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## Girolando Breed Genetic Improvement Program / Sire Summary / Progeny Test Results / June 2016

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# Girolando Breed Genetic Improvement Program Sire Summary Progeny Test Results - June/2016

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Embrapa Dairy Cattle
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# Presentation

The successful history of Girolando, which was initialized with the first official registration of the breed in 1996 by the Ministry of Agriculture, is been outlined along with its development, and have been strongly supported by genetic improvement initiatives held by the Girolando Breeders Association and Embrapa Dairy Cattle. Those initiatives include the progeny test, established in 1997, and the Girolando Breed Genetic Improvement Program, established in 2007.

The partnership between Girolando Breeders Association and Embrapa Dairy Cattle, held in order to produce and release this summary in behalf of the Girolando breed, involves efforts of a staff composed of approximately one hundred people, working in several fields of animal production and science. Their work encompasses from registering field data, prospecting, organizing and managing partner herds, by the Girolando association; until treating, storing and analyzing data, as well as designing and publishing this present document. Hence, as a result of this work, the Girolando Sire Summary and Progeny Test Results contain a synthesis of several information that are greatly valuable for producers as well as for the community that shares interest in the Girolando breed.

This Sire Summary/Progeny Test Results document has innovative tools and resources, for breeders and/or other professionals. Those include information regarding molecular markers, the Girolando Linear Evaluation System (SALG) and the updated genetic evaluation of age at first calving. The methods for analysis were modified for this current evaluation and are detailed further in this document.

Still, in order to convert this work into effective benefit for the Girolando breed, it is important that producers and people working in the field apply, more and more, those results as a primary source of information to support managerial decisions for improvement of their herds.

*Paulo do Carmo Martins*
General Manager
Embrapa Dairy Cattle

# Sumary

# Girolando Breed Genetic Improvement Program
# Sire Summary
# Progeny Test Results - June/2015

*Marcos Vinicius Gualberto Barbosa da Silva, Marta Fonseca Martins, Marcello de Aguiar Rodrigues Cembranelli, Leandro de Carvalho Paiva, Ary Ferreira de Freitas, João Cláudio do Carmo Panetto, Bruna Rios Coelho Alves, Gustavo Sousa Gonçalves, Mariana Magalhães Campos, Bruno Campos de Carvalho, Marco Antonio Machado, Daniele Ribeiro de Lima Reis Faza*

## 1. Introduction

The Girolando breed progeny test was established in 1997, as a result of the partnership between Girolando and Embrapa Dairy Cattle. In 2007, the Programa de Melhoramento Genético da Raça Girolando – PMGG (Genetic Improvement Program of the Girolando Breed) was implemented. Besides interacting with previously existing initiatives of the Girolando Breeders Association, such as the genealogical register service, the progeny test and the dairy control service, the PMGG launched the Linear Evaluation System (SLAG). The main objectives of the PMGG comprises identification of genetically superior individuals, the technically-oriented multiplication of genetics, the evaluation of economic traits and the promotion of sustainable dairy activities.

The Program's results are remarkable. Currently, Girolando has the most growing rates of semen production in Brazil. More than 641,360 semen doses from Girolando sires were produced in 2015, representing an increase of more than 70%, in comparison to 2013. The increased milk yield during the first three lactations of Girolando cows is another important achievement of this Program. The average milk yield in up to 305 days a year of Girolando cows was 3,703 kg in 2000 and, in 2014, reached 5,220 kg, representing a rise of 41%.

As a consequence of those and other factors, Girolando is achieving more recognition, nationally and internationally, and therefore, is being considered the preferable dairy breed in tropical regions. Because Girolando animals are capable to sustain an acceptable production level when raised in diverse types of management systems and environmental conditions, the breed is widely accepted in Brazilian dairy systems. In fact, 80% of the milk produced in the country originates from Girolando cows.

## 2. History of the Breed

The first activities involving crossbreeding between Holstein and Gyr in Brazil emerged in the 40's. According to some older traditional dairy farmers, this crossing occurred mistakenly when a Gyr bull invaded a neighboring farm and mated Holstein cows. Nonetheless, the directed crosses were guided in order to generate offspring that would combine the high milk production capacity of the Holstein cattle and the rusticity of the Gyr breed. The crossbreds were noteworthy for excellent productivity, high fertility indexes and good vigor. Due to these advantages, the crossbreeding practice quickly spread around the entire country. Within a short period, Girolando became the predominant cattle breed on the majority of Brazilian dairy farms.

Over the years, dairy crossbred achieved great importance, and lead many research and rural extension institutions to study and apply the crossbred practice, with the objective of improving the quality of the products. Thus, in 1978, the Programa de Cruzamento Dirigido – PROCRUZA (Directed Crossbreeding Program) was created in order to select different dairy and beef cattle crossbreeds. Under the leadership of the Associação Brasileira de Criadores – ABC (Brazilian Association of Breeders), the Criadores de Gado de Leite do Triângulo Mineiro e Alto Paranaíba – ASSOLEITE (Triângulo Mineiro and Alto Paranaíba Association of Dairy Cattle Breeders) was in charge of implementing PROCRUZA. In 1988, the Ministry of Agriculture determined the end of PROCRUZA, and in 1989 ASSOLEITE was registered under the Ministry and began managing the program for the formation of the Girolando breed. The association was since there named as Associação Nacional dos Criadores de Girolando (National Association of Girolando Breeders). In 1996, the Girolando breed became official, the entity took on the name Associação Brasileira dos Criadores de Girolando – GIROLANDO (Brazilian Association of Girolando Breeders), headquartered in Uberaba, Minas Gerais State, Brazil.

## 3. The Girolando Breed

The Girolando breed was conceived aiming the development an ethnic group that produces milk sustainable, in tropical and subtropical regions. The breed's background is the crossing of Holstein (HOL) and Gyr (G) breeds, ranging genetic compositions varying from 1/4 HOL + 3/4 G to 7/8 HOL + 1/8 G. However, matings are been directed in order to establish the breed's genetic composition at 5/8 HOL + 3/8 G. The ultimate goal is to generate productive and standardized cattle that meet the needs of dairy farmers. Animals resulting from mating between 5/8 HOL + 3/8 Gyr individuals are considered as Pure Synthetics (PS), which means the proper Girolando breed. In other to be registered as a definitive PS, besides being a product of such mate, an animal must have a positive genetic evaluation for the milk yield (PTA milk). This evaluation is based on an individual's own performance or on the performance of its parents. Other requirements are also demanded according to regulations from the Girolando Breed Genealogical Register, available on the Girolando site (www.girolando.com.br). The leading matings and crossbreeds practiced within the Girolando Program are presented below (Figure 1).

| | | MOTHER | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Hostein | 7/8 | 3/4 | 5/8 or PS | 1/2 | 3/8 | 1/4 | Gir |
| FATHER | Hostein | x | x | 7/8 (87,5%) | x | 3/4 (75%) | F≈5/8 (68,75%) | 5/8 (62,5%) | 1/2 (50%) |
| | 3/4 | 7/8 (87,5%) | 13/16 (81,25%) | 3/4 (75%) | x | 5/8 (62,5%) | F≈5/8 (56,25%) | 1/2 (50%) | 3/8 (37,5%) |
| | 5/8 or PS | 13/16 (81,25%) | 3/4 (75%) | F≈5/8 (68,75%) | PS (62,5%) | F≈5/8 (56,25%) | 1/2 (50%) | 7/16 (43,75%) | 5/16 (31,25%) |
| | Gir | 1/2 (50%) | 7/16 (43,75%) | 3/8 (37,5%) | x | 1/4 (25%) | x | x | x |

Prepared by: Brazilian Association of Girolando Breeders, 2011.

**Figure 1.** Girolando breed crossbreed table.

In Figure 1 the fraction or percentage of Holstein breed composition is always read first. The genetic composition of the sire always comes before the dam. For the purpose of the register, only 5/8 or PS cows can be bred with 5/8 or PS bulls. Females with genetic composition between F≈5/8 will be controlled as 5/8. Males of F≈5/8 will not have their genetic composition rounded off to 5/8, maintaining the correct fraction according to the mating from which it arose. The cells marked with the X are products from crossbreeds of which Girolando does not turn official the genealogy.

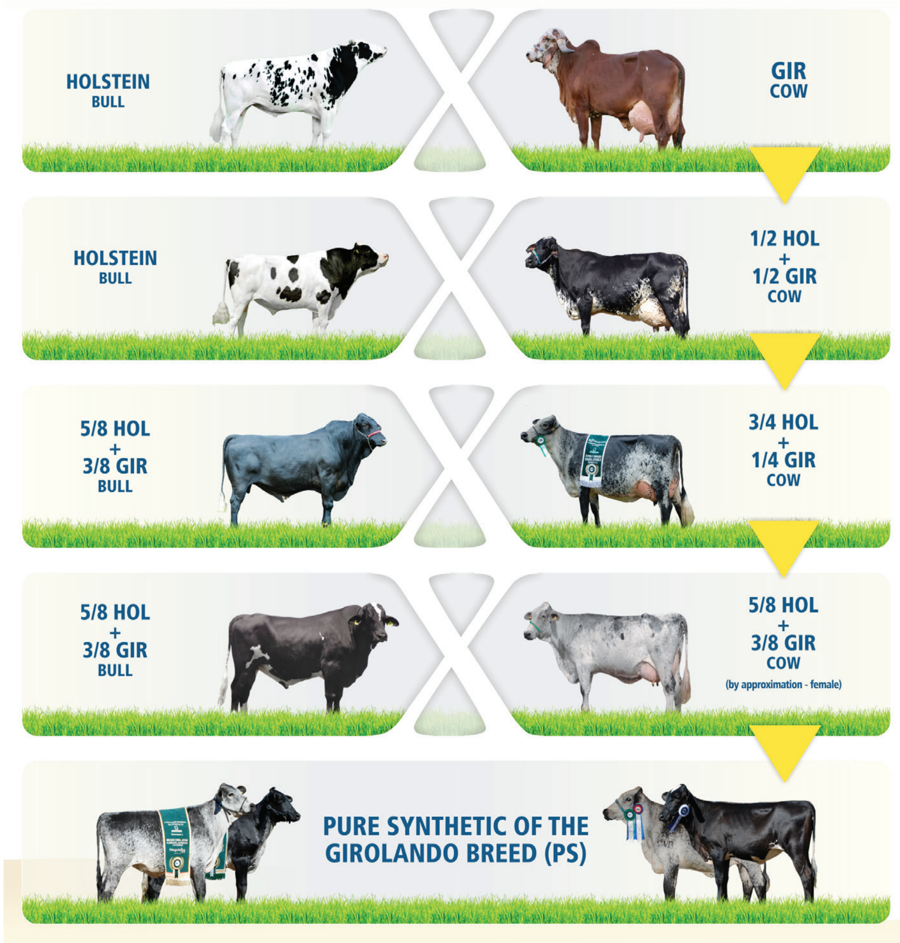



**Figure 2.** Crossbreed strategies for obtaining PS animals using Holstein breed bulls in the first two generations and a 5/8 Girolando bull in the following generations.

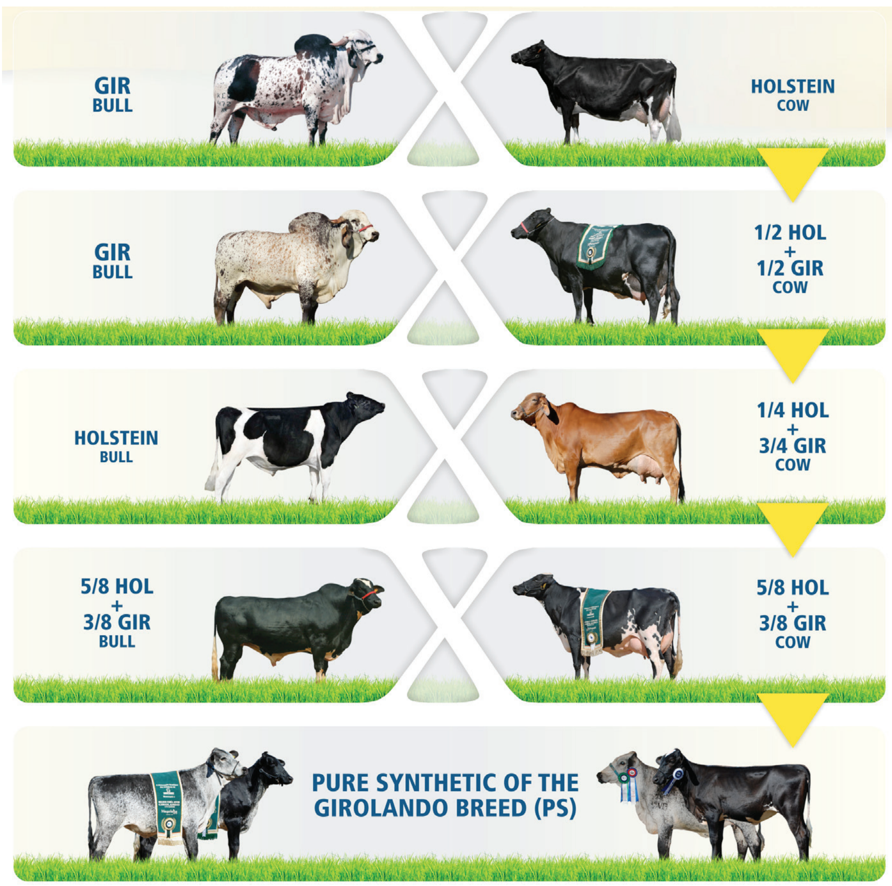



**Figure 3.** Crossbreed strategy for obtaining PS animals, using Gir and Holstein breed bulls in the first three generations and a 5/8 Girolando bull in the last generation.


**Figure 4.** Crossbreed strategy for obtaining PS animals, using Holstein breed bulls in the first generation, a 3/4 Girolando in the second generation and a 5/8 Girolando bull in the third generation.


**Figure 5.** Crossbreed strategy for obtaining PS animals, using a Gir bull in the first generation and a 5/8 Girolando bull in the last two generations.

The diagrams presented in Figures 2, 3, 4 and 5 show the leading strategies for the formation of Pure Synthetic (PS) Girolando. However, any combination between the breeds, Holstein, Gyr and its crossbreeds can be used for obtaining PS.

Due to the greater availability of semen from Girolando bulls, the crossbreeding strategy using Girolando semen has become more viable. The main crossbreeding strategies using 5/8 of PS bulls are presented in Figure 6, and using 3/4 bulls are presented in Figure 7.

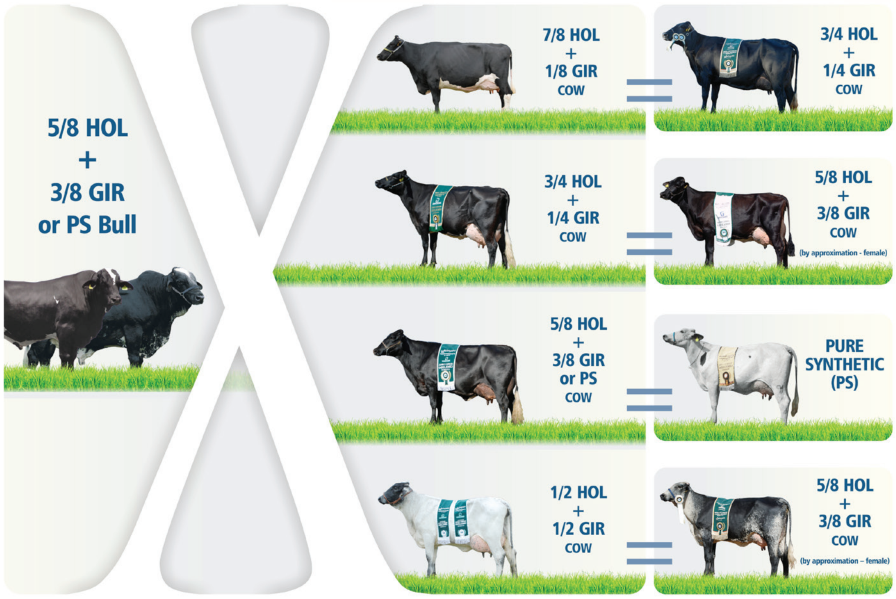



**Figure 6.** Most commonly used crossbreeds with Girolando 5/8 or PS bulls.

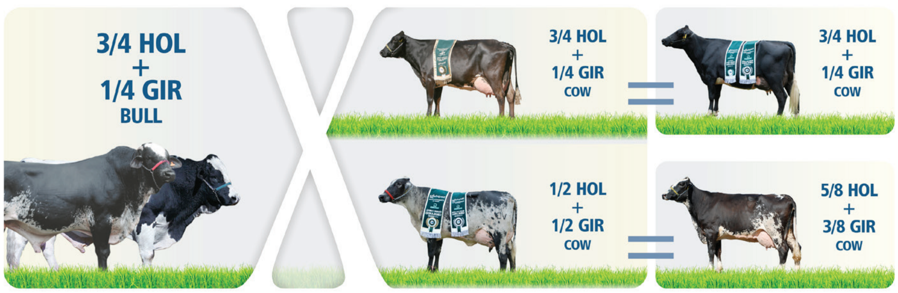



Figure 7. Most commonly used crossbreeds with Girolando 3/4 bulls.

## 4. Genotyping of Progeny Test Bulls

The evolution and recent advances achieved in the field of biotechnology allowed the use of molecular markers information for selection and mating programs. The knowledge about animal genotypes is of strategic importance and elevated economic value, as it allows for the identification of animals with greater potential for milk production, fat and protein milk content. Also this knowledge permits the identification of alleles linked to genetic diseases. With this information at hand, farmers can direct mating, choose semen, and therefore, apply the assisted selection through molecular markers for genetic improvement of Girolando breed.

### 4.1. Molecular Markers

**Kappa-casein (k-CN)** - The properties and quality of dairy are directly influenced by its protein content. The main proteins in milk are caseins, lactoglobulins and albumins. Molecular studies have identified that variants of Kappa-casein are strongly associated to a greater yield for cheese production. The BB-genotype animals produce more milk protein when compared to AA-genotype animals. The BB genotype is associated to superior cheese processing traits, such as less coagulation time and the formation of a denser coagulate. The production of BB animals are associated with yield 12% greater in terms of mozzarella and 8% for cheddar cheese in comparison to AA-genotype animals. AB animals have an intermediary yield comparing to BB and AA genotypes.

**Beta-casein** - This gene encodes a protein present in milk and has been correlated with allergies, type 1 diabetes and other effects. The two major alleles are A1 and A2. The A1 allele when digested in the gastrointestinal tract, giving rise to the BCM-7 peptide that was negatively correlated to health problems in humans. But the allele A2 is positively associated with increased production of milk and protein in cattle.

**Beta-lactoglobulin (β-LGB)** - This gene encodes a milk protein which corresponds to 50 to 55% of the proteins contained in whey. Twelve alleles have been identified for this gene, and A and B alleles are the most frequent in commercial herds. Allele A is the most favorable for milk production, while allele B is related to a larger percentage of fat and protein in milk. The milk from the animals with the AA genotype is recommended for *in natura* sale and milk from animals with the BB genotype is most recommended for the production of dairy, such as cheese.

**DGAT1** - The DGAT1 (diacylglycerol O-acyltransferase 1) gene is strongly associated to the percentage of fat in the milk. Two alleles of this gene were identified in bovines. The A allele, fixed in the majority of Zebu breeds, is associated to increased protein and milk production. The K allele, very common in European breeds, is associated with a reduction in protein production and an increase in the production of fat in milk.

**BLAD** - Bovine leukocyte adhesion deficiency (BLAD) is a genetic disorder common in Holstein breeds. This disease is caused by a recessive mutation of the CD18 gene. Animals which are homozygote for this mutation have retarded growth, tooth loss, immune system failure and premature death, generally driven by pneumonia. Heterozygote animals (carriers of the recessive allele) have normal development.

**DUMPS** - Deficiency of Uridine Monophosphate Synthase (DUMPS) is another important genetic disorder of Holstein breed. It is characterized by a recessive mutation in the *UMPS* gene, resulting in deficiency of the *UMPS*. This enzyme is part of the pyrimidine synthesis pathway, which comprises the process of RNA and DNA synthesis. Homozygote embryos for this mutation die around the $40^{th}$ day, since pyrimidines are greatelly needed during that embryonic stage. Heterozygote cows have elevated level of orotic acid in the urine and milk.

**CVM** - Complex vertebral malformation (CVM) is a syndrome that include congenital growth retardation, vertebral malformation and deformation of the ventricular septum. The syndrome is caused by a mutation in the *SLC25A53* gene, which encodes a protein that plays an important role in the formation of the vertebra. Similar to other recessive genetic diseases, such as DUMPS and BLAD, carrier animals develop normally, while recessive animals die shortly after birth.

**OPN (osteopontin)** - Studies with Holstein animals, showed that this gene is associated with milk yield and with fat and protein percentage in milk. Other studies also demonstrated that this marker is also associated with growth traits.

## 5. Zootechnical Performance

For the current evaluation, 368,350 records were used. Those included milk yield and genealogy data, originated from herds supervised by the Dairy Control Service, and provided by Girolando Breeders Association. The milk yield of first lactations (57,336) was edited for age at first calving (560 to 1,650 days), year of birth (1997 to 2014), year of calving (2000 to 2014), breed composition (2/8 to 7/8 HOL:G), causes of lactation termination, herd size and contemporary groups for herd-calving year. Lactations included in those analyses met the criteria of pertaining to a herd that had at least three controlled lactations and used at least two bulls in the same year.

The productive performance at first lactation of 31,552 Girolando cows, controlled by this Program, pertaining from 778 collaborator herds, in the period from 2000 to 2014, is shown in Table 1 and Figures 8 and 9. The general average for milk yield in 305 days in the period was 4,629 kg, taking into account the first, second and third lactations. The average total milk yield and the average duration of lactation were 5,204 kg and 283 days, respectively. The average calving interval was 429 days and the average age at the first calving was 1,076 days.

**Table 1.** Number of herds and lactations, average milk production 305 days and total milk yield of the third lactations, duration of lactation, calving interval and age at first calving of cows from the Girolando breed during the period from 2000 to 2015.

| Calving year | Number of herds | Number of lactations | Milk yield (kg) | | Lactation length (days) | CI[1] (dias) | Nº de Obs. CI | AFC[2] (dias) | Nº Obs AFC |
|---|---|---|---|---|---|---|---|---|---|
| | | | In 305 days | Total | | | | | |
| 2000 | 48 | 643 | 3,703 ± 1,837 | 4,132 ± 2,486 | 277 ± 106 | 426 ± 91 | 369 | 1,007 ± 168 | 620 |
| 2001 | 64 | 1,162 | 3,575 ± 1,671 | 3,796 ± 1,929 | 257 ± 97 | 426 ± 88 | 575 | 1,040 ± 173 | 798 |
| 2002 | 77 | 1,397 | 3,615 ± 1,582 | 3,842 ± 1,872 | 263 ± 93 | 436 ± 95 | 684 | 1,038 ± 177 | 800 |
| 2003 | 85 | 1,775 | 3,608 ± 1,635 | 3,859 ± 1,913 | 268 ± 97 | 436 ± 98 | 860 | 1,024 ± 165 | 1,016 |
| 2004 | 103 | 1,911 | 3,844 ± 1,758 | 4,135 ± 2,083 | 273 ± 98 | 438 ± 91 | 832 | 1,053 ± 172 | 989 |
| 2005 | 119 | 2,081 | 3,778 ± 1,759 | 4,087 ± 2,116 | 267 ± 102 | 444 ± 93 | 806 | 1,109 ± 190 | 1,082 |
| 2006 | 135 | 2,169 | 3,913 ± 1,819 | 4,354 ± 2,215 | 271 ± 101 | 440 ± 89 | 771 | 1,106 ± 166 | 1,285 |
| 2007 | 134 | 2,094 | 4,257 ± 2,010 | 4,616 ± 2,452 | 278 ± 89 | 440 ± 86 | 827 | 1,130 ± 181 | 1,182 |
| 2008 | 139 | 2,408 | 4,424 ± 2,052 | 4,913 ± 2,693 | 292 ± 97 | 430 ± 89 | 1,038 | 1,145 ± 177 | 1,544 |
| 2009 | 191 | 3,228 | 4,562 ± 2,141 | 5,052 ± 2,745 | 285 ± 99 | 426 ± 92 | 1,408 | 1,115 ± 180 | 2,154 |
| 2010 | 213 | 4,366 | 4,655 ± 2,272 | 5,191 ± 3,018 | 278 ± 109 | 436 ± 101 | 1,764 | 1,091 ± 186 | 2,900 |
| 2011 | 266 | 5,158 | 4,976 ± 2,210 | 5,623 ± 2,925 | 294 ± 116 | 432 ± 98 | 1,905 | 1,062 ± 194 | 3,410 |
| 2012 | 278 | 6,312 | 5,217 ± 2,173 | 5,985 ± 2,998 | 303 ± 114 | 424 ± 86 | 2,048 | 1,071 ± 190 | 4,294 |
| 2013 | 401 | 9,463 | 5,168 ± 2,481 | 5,821 ± 3,238 | 294 ± 102 | 436 ± 95 | 2,652 | 1,055 ± 210 | 5,934 |
| 2014[3] | 388 | 10,300 | 5,220 ± 2,506 | 5,761 ± 3,117 | 285 ± 94 | 426 ± 96 | 2,263 | 1,074 ± 235 | 7,327, |
| 2015[3,4] | 290 | 2,869 | 4,003 ± 2,370 | 4,124 ± 2,530 | 241 ± 68 | 419 ± 95 | 696 | 1,089 ± 237 | 2,157 |
| **Geral** | **778** | **57,336** | **4,692 ± 2,297** | **5,204 ± 2,929** | **283 ± 103** | **429 ± 93** | **19,498** | **1,076 ± 204** | **31,552** |

[1]Calving interval, [2]Age at first calving, [3]CI incomplete data, [4]Only lactations initiated up to October 2015 were included.

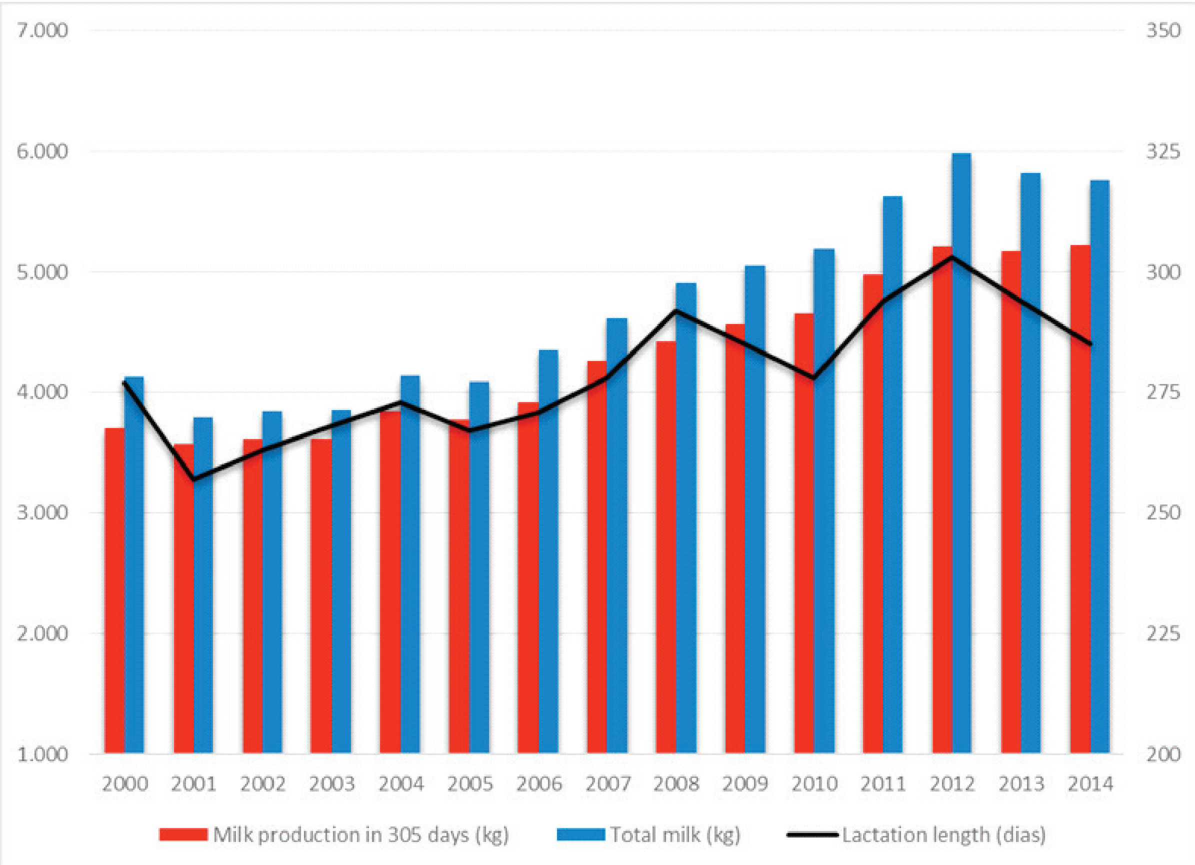



**Figure 8.** Average milk production in 305 days, total milk yield of the third lactation and lactation length of Girolando cows from 2000 to 2014.

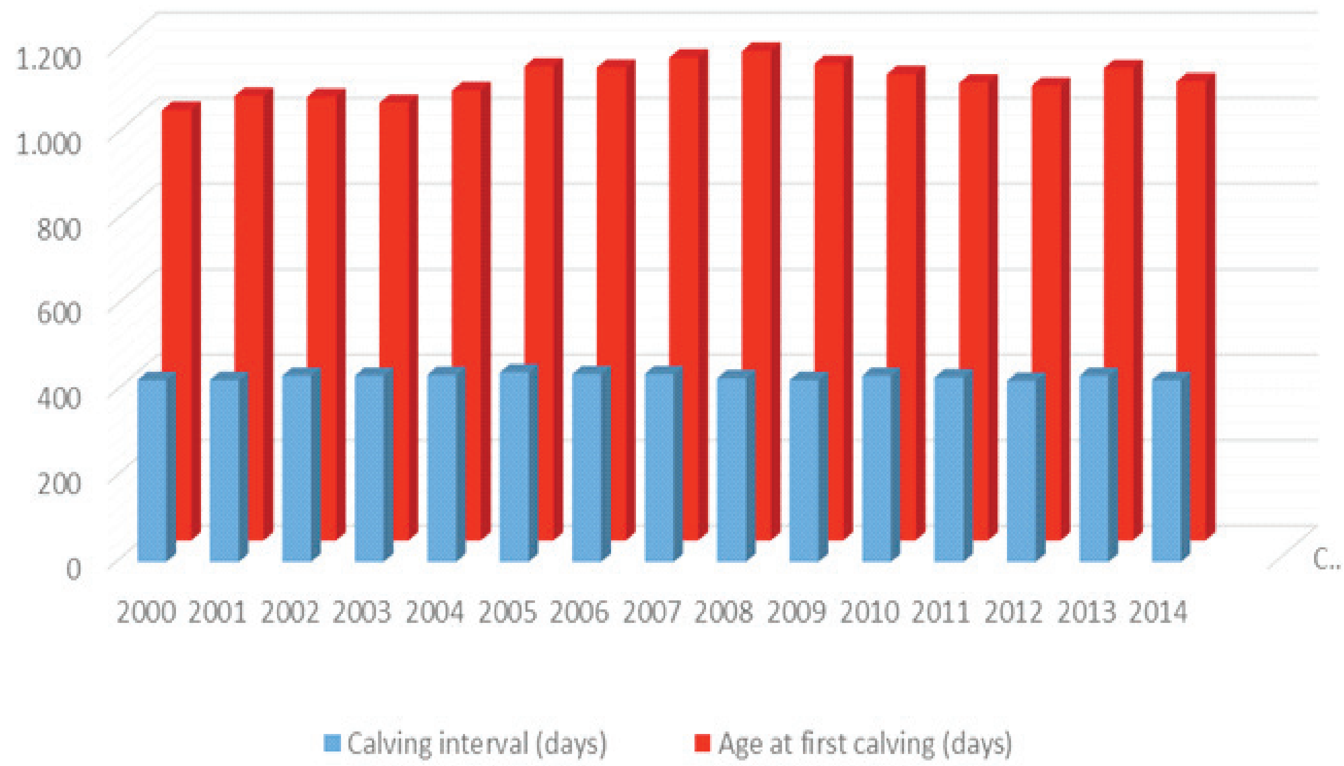



**Figure 9.** Average first calving interval (FCI) and age at first calving (AFC) of Girolando cows from 2000 to 2014.

## 6. Progeny Test and Genetic Evaluation of Bulls

The Girolando Breed Genetic Improvement Program (PMGG) has been underway for 19 years, under technical coordination of Embrapa Dairy Cattle. The PMGG is geared toward dairy control and the use of artificial insemination in the herds of breeders (Annex 3) for the conduction of the Girolando Bull Progeny Test. The progeny test started in 1997 and 88 sires of the first 12 groups have already been tested. Five other groups that are currently under testing (Annex 1) and include 116 sires whose semen doses were distributed between 2009 and 2015 and 24 sires whose semen doses were distributed in 2016.

### 6.1. Distribution of Progeny Test Semen

For the Progeny Test to be conducted it is necessary that sires and dams are available to breeders. Sires must be of excellent genetic origin and be selected by a technical board. The criteria for selection are specified in the regulation for the participation of bulls in the Girolando Breed Progeny Test. The selected sires are divided into groups according to the year of registration. The dams to be inseminated with the coded semen from these bulls are called collaborative dams. For each group of bulls, the period from the distribution of the coded semen to the publication of the first results of the progeny test take in average six years. This is due to factors such as the period of distribution, use of semen by breeders, gestation period of the dams, age at first calving, lactation period of the bulls' daughters and time for analysis of dairy control and genealogy data (Table 2).

The average time estimated for the publication of the first results is 71 months, that is, 5 years and 11 months after the start of the distribution of semen to the collaborating herds. This period may be shorter or longer, according to the time necessary for the execution of each of the stages. The most relevant stages of the test are the use of the semen and the collection of data regarding age at the first calving for the bull's daughters. Another stage of high importance is the distribution of semen, as the faster this occurs, the less time is necessary for the collaborative dams to be inseminated. The years of registration and semen distribution, as well as for the disclosure of the first results of each sire group of the Girolando progeny test are in Table 3.

**Table 2.** Time for the realization of the Progeny Test.

| Stage | Duration (months) |
|---|---|
| Semen distribution | 6 |
| Use of semen in the herds | 6 |
| Gestation of collaborative matrixes | 9 |
| Average age at first calving | 36 |
| Average period of lactation of bulls' daughters | 10 |
| Data analysis | 4 |
| Total Duration | 71 |

**Table 3.** Years of registration and distribution of semen from sires pertaining to 17 groups of the Girolando Progeny Test.

| Group | Registration | Distribution | Results |
|---|---|---|---|
| 1 | 1996 | 1997 | Available in 2004 |
| 2 | 1997 | 1999 | Available in 2005 |
| 3 | 2000 | 2001 | Available in 2007 |
| 4 | 2001 | 2002 | Available in 2008 |
| 5 | 2003 | 2004 | Available in 2009 |
| 6 | 2004 | 2005 | Available in 2010 and 2011 |
| 7 | 2005 | 2006 | Available in 2011 |
| 8 | 2006 | 2007 | Available in 2013 |
| 9 | 2007 | 2008 | Available in 2014 |
| 10 | 2008 | 2009 | Available in 2014 and 2015 |
| 11 | 2009 | 2010 | Available in 2015 and 2016 |
| 12 | 2010 | 2011 | Predicted for 2017 |
| 13 | 2011 | 2012 | Predicted for 2018 |
| 14 | 2012 | 2013 | Predicted for 2019 |
| 15 | 2013 | 2014 | Predicted for 2020 |
| 16 | 2014 | 2015 | Predicted for 2021 |
| 17 | 2015 | 2016 | Predicted for 2022 |

Results of the groups 12 to 17 may become available after five or six years, varying according to the performance of the collaborator herds and each individual animal. In 1998, 2000 and 2003, there was no semen distributed. This fact disrupted the timing of this phase and the disclosure of the first results of the other groups of sires.

## 6.2. Statistical Model and Analysis Methodology

The file containing the basis for the genetic evaluation included only the first three lactations of each cow, in accordance to the following rules:

- Data from the second lactation was only included if the first lactation has been controlled;
- Data from the third lactation was only included if the first and second lactation have been controlled.

From 2015, lactations that lasted more than 60 days were included in the evaluation, as long as the cause of the end of lactation was considered valid. In addition, the file also included the lactations of daughters produced from commercial semen, excepting those pertaining from the sire herd. Cows that had at least one controlled lactation performed during a milk yield contest were included in a specific contemporary group, according to the year of the initiation of lactation.

The model used for the genetic evaluation milk yield included the fixed effects of herd-year of calving, season and age of the cow at calving as covariates, with the linear and quadratic components. Other effects included were the fixed cow breed composition (defined as the contribution of Holstein and Gyr breeds, in proportions varying from 2/8 to 7/8), and the random effects of the animal and experimental error. The predicted breeding values of each animal were obtained using the Best Linear Unbiased Prediction (BLUP) methodology within the software MTDFREML (1995). Table 4 contains the general information about the database, the values of the estimates of the variance components and heritability used in the model.

**Table 4.** Estimative of the heritability ($h^2$) for milk yield in 305 days and age at first calving and the genetic correlation of those traits.

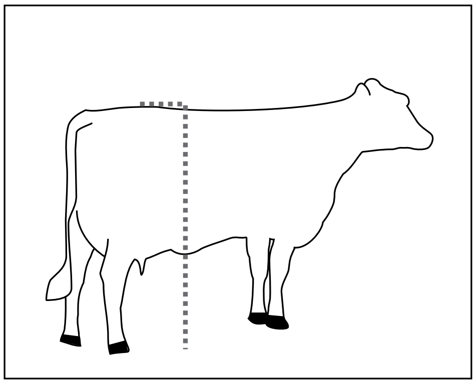
| Trait | Heritability | Genetic correlation |
|---|---|---|
| Milk yield in 305 days | 0.29 | |
| Age at first calving | 0.18 | -0.60 |

The breeding values of the bulls were expressed as the Predicted Transmitting Ability (PTA) in relation to the genetic base, defined as the average of the breeding values of 742 cows born in 2000.

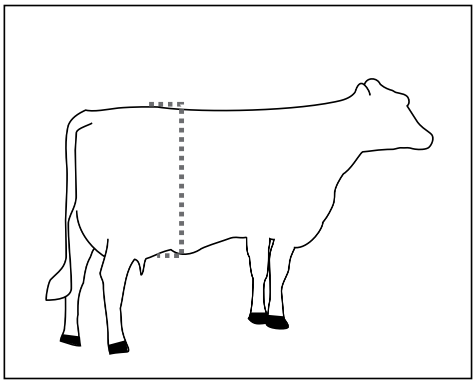
## 7. Girolando Linear Evaluation System – SALG

The aim of the Girolando Linear Evaluation System (SALG) is to measure and evaluate the conformation and handling traits of Girolando animals, and therefore, to generate highly reliable data that can be used for the prediction of breeding values for bulls in the progeny test. These predictions will be useful for breeders to select sires and dams, with the objective of improvement of economically important traits. This year, genetic values for an additional seven conformation traits were included in the Girolando sire report, totaling 12 evaluated traits. Below, the traits measured and evaluated through SALG are described briefly.

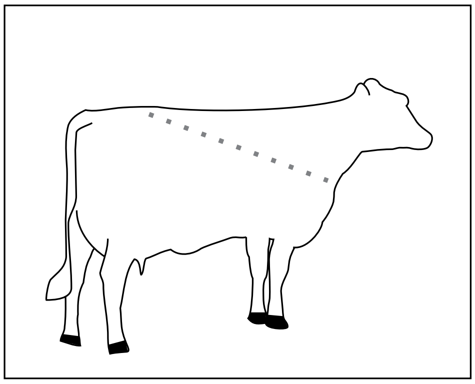
### 7.1. Body Capacity Measurements



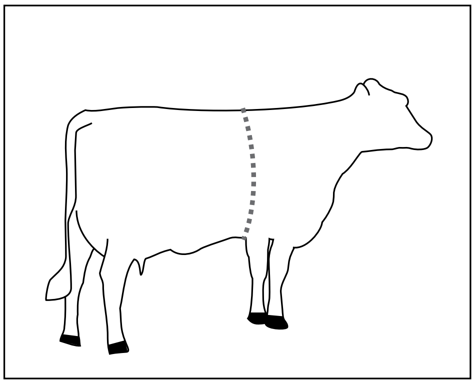
**7.1.1. Rump height:** measured using a measuring stick. The device is placed above the rump, close to the hook bone, to the ground. Ideally, the rump should be high enough for the udder to be sufficiently far from the ground in order to reduce the risks of injuries and contamination.



**7.1.2. Body depth:** measured using a measuring stick. The device is placed at the region immediately behind the rump, before the hooks (lumbar region), up to the lower line of the animal's belly, the cranial portion of the previous udder insertion. This trait is directly related to the animal's digestive and productive capacity. The body depth should be above the breed average.

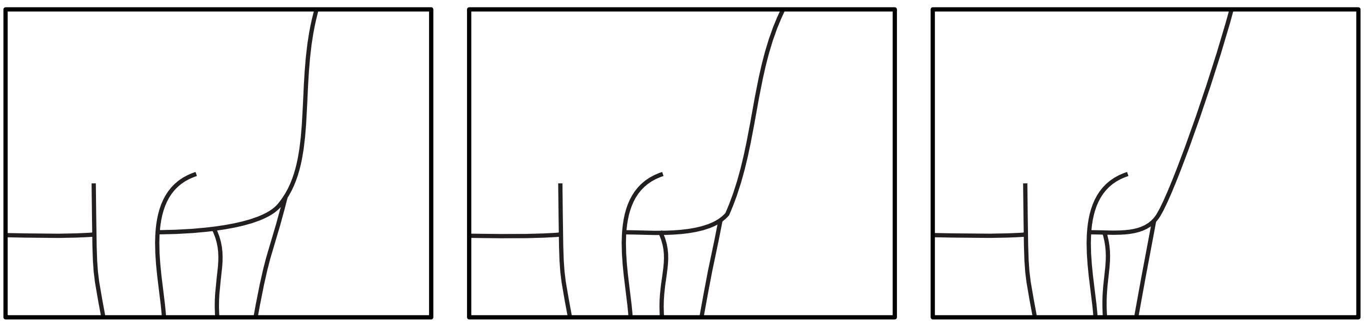


**7.1.3. Body length:** the measure is taken from the point of the scapula to the hook bone, using a measuring stick. It is related to the animal's respiratory, digestive and productive capacity. Body length should be above the breed average.

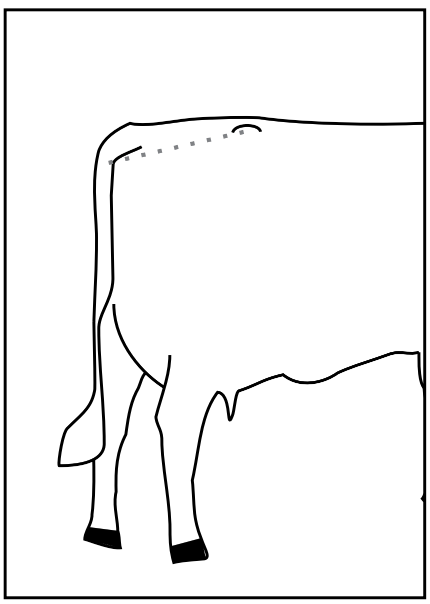


**7.1.4. Thoracic perimeter:** the circumference of the animal's thorax is measured using a measuring tape. It is strongly related to the cardiac and respiratory capacities. The thoracic perimeter should be above the breed average.

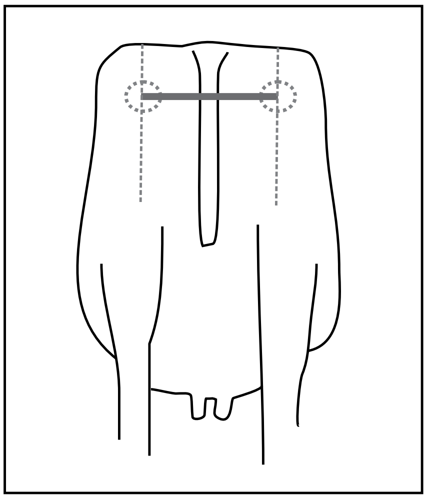
**7.1.5. Chest amplitude:** evaluated by means of a score. The distance between the back members is evaluated and refers to the animal's strength. The grades vary from 1 to 9: extremely closed chest is grades as 1, intermediary amplitude grades as 5 and an extremely ample chest is graded as 9.



## 7.2. Rump Measurements

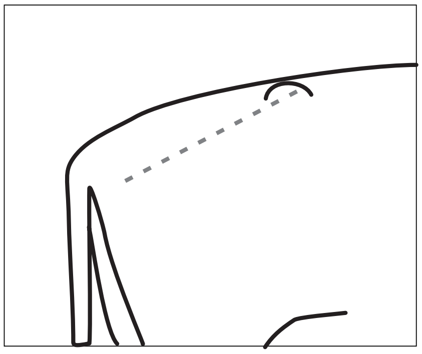


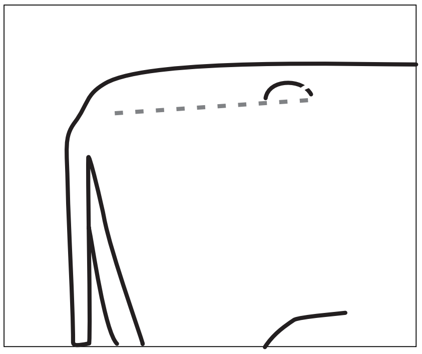
**7.2.1. Rump length:** is the distance between the point of the pin bone and the point of the hook bone, measured using a stick or tape. Rump length strongly influences the quality and the support of the mammary system, as it is the dorsal support of the udder. High values, above average, are favorable.

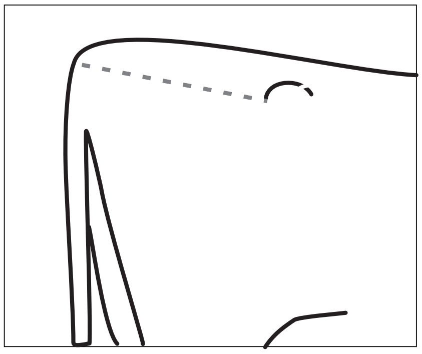


**7.2.2. Width between pin bones:** is the distance from the left point to the right point of the pin, measured using a measuring stick or tape. Higher values are related to greater calving facility for the animal and better dorsal support of the udder.

**7.2.3. Rump angle/inclination:** the angle of the rump is assessed by measuring the height of the hook bones, height of the pin bones and length of the rump. The inclination of the hook bone is calculated in relation to the pin bone. The value obtained can be either positive or negative. Above zero indicates a smooth rump.  Below zero indicates an inverted rump, which leads to problems during calving and elimination of the placenta. The ideal value is as close to zero as possible.

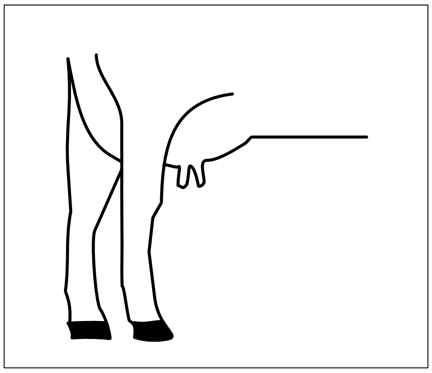


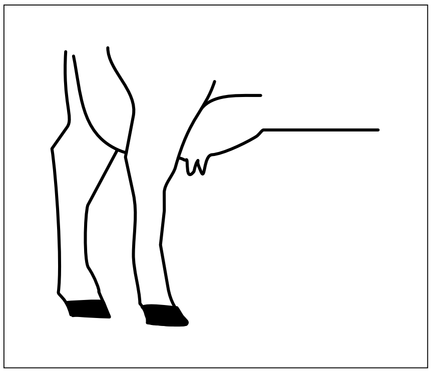


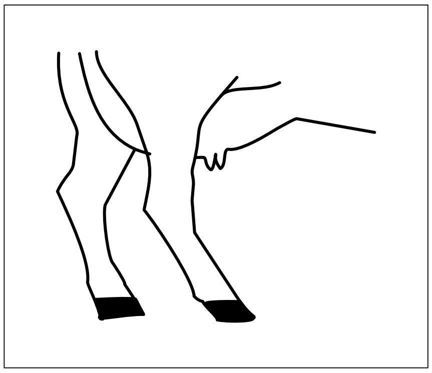


## 7.3. Legs and Feet

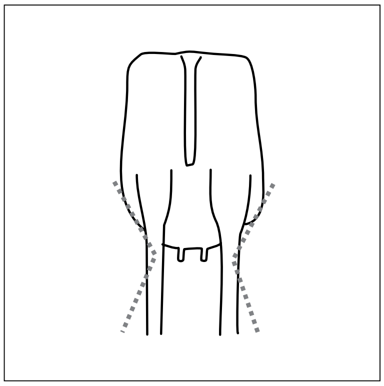
**7.3.1. Legs - side view:** the angle of the leg's curvature is evaluated through a score. Score 1 is given for very curved legs, 5 for intermediary legs (ideal) and 9 for extremely straight legs. At the height of the hock, the legs should have slight curvature, which should not be accentuated. Very curved legs may lead to wear of the hoof claws, making them cracked and very straight legs may cause mobility problems. The ideal score is close to 5.

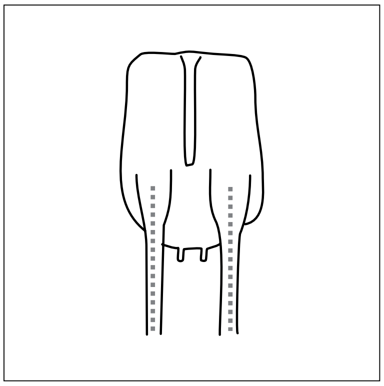


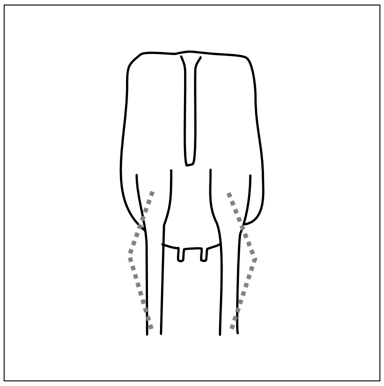




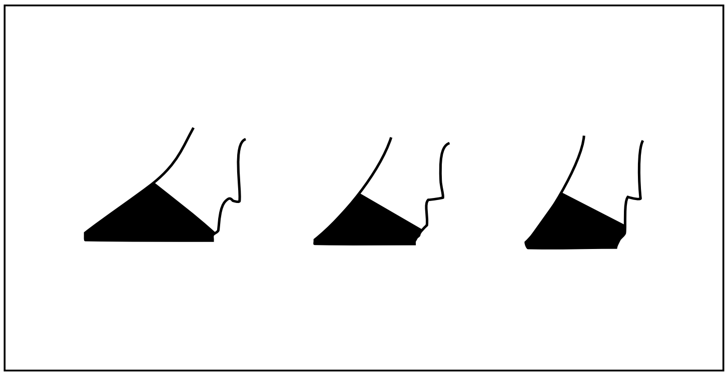
**7.3.2. Legs - rear view:** the position of the back legs id evaluated based on a score from 1 to 9. Score 1 is given for legs with very closed hocks, 5 for parallel legs (ideal) and 9 for legs with open hocks. Legs with closed hocks may crush and reduce udder space, causing injury and increasing the occurrence of mastitis, while very open legs may cause mobility problems.





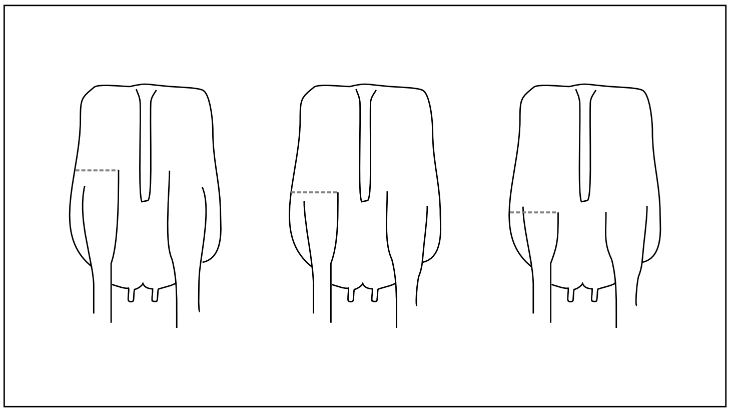


**7.3.3. Hoof angle:** is evaluated by means of a score. For good animal mobility, it is important that the hooves are strong and set at a good angle (close to 45°). Score 1 is given for very low angle hooves, 5 for hooves with an angle close to 45° (ideal) and score 9 for extremely steep angle hooves.

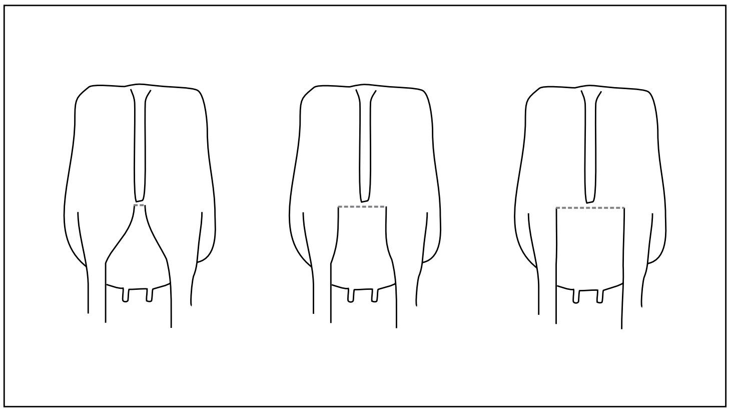


## 7.4. Posterior Udder

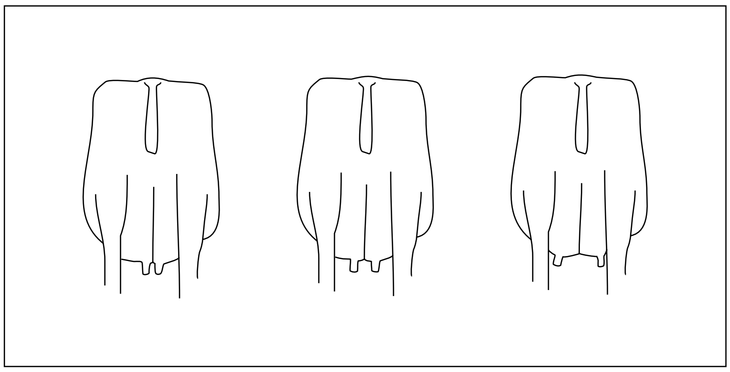
**7.4.1. Rear udder height:** is the distance between the base of the vulva to the fore udder insertion, in the perineal region. It is measured using measuring tape. It is related to the length and milk storage capacity of the fore udder. The higher, the better.



**7.4.2. Rear udder width:** is the distance between the left and right rear ligament of the udder. It can be measured with a measuring tape or ruler. It is strongly related to milk production and storage capacity.

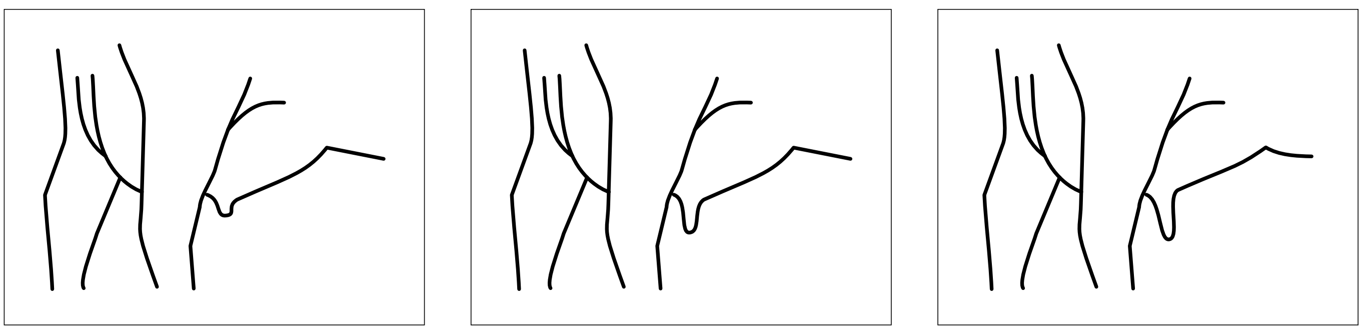


**7.4.3. Rear teat placement:** is evaluated based on a score from 1 to 9, 1 given for low quality placement, 5 for intermediary placement and 9 for extreme quality placement. The rear teats must be centered in the udder quarters. Values close to 9 are preferable, indicating more centralized teats than low values, which means open teats, placed on the sides of the quarters and which complicates mechanized milking.



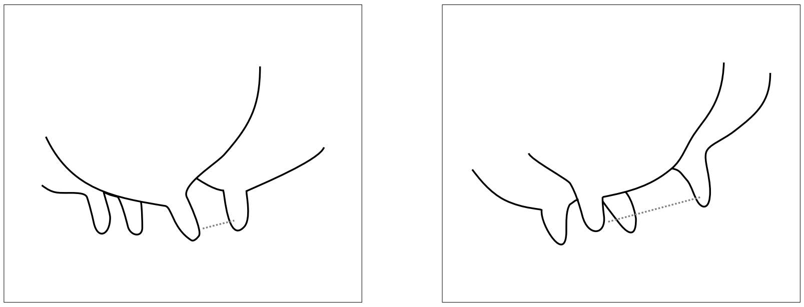
## 7.5. Anterior udder

**7.5.1. Teat length:** the front teats of the animal are measured using a measuring tape or ruler. The ideal length of the teats is around 5 to 7 cm. Long teats are associated with inefficient colostrum nursing and mechanized milking. Also, they are related to increased incidence of teat loss and mastitis.

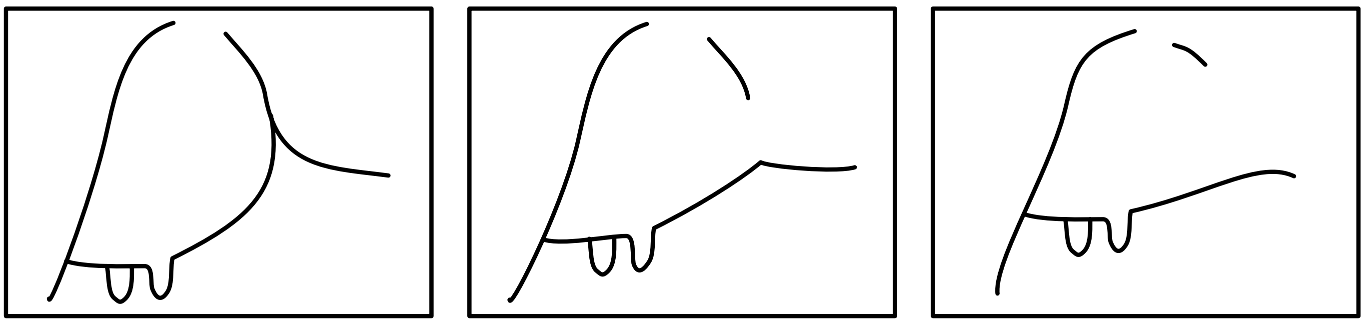


**7.5.2. Teat diameter:** is measured using a caliper, placed on the teat base. Wide teats are associated with inefficient colostrum nursing and mechanized milking. Also, they are related to increased incidence of teat loss and mastitis.

**7.5.3. Front teat placement:** the placement of the front teats is evaluated through a score. The score varies from 1 to 9: 1 is given for low quality placement, 5 for intermediary placement and 9 for extreme quality placement. The front teats must be centered in the udder quarters. Values close to 9 are preferable, indicating more centralized teats than low values, which means open teats, placed in the sides of the quarters and which complicates mechanized milking.

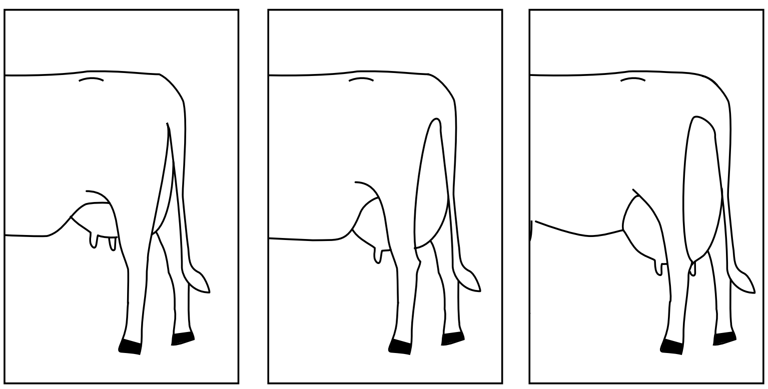


**7.5.4. Ligament:** the quality of fore udder insertion and support is assessed through visual evaluation (by means of a score). The evaluator can also press the area in order to feel the quality of the tissue. The fore udder must be firmly attached to the animal's ventral region, preventing the formation of swelling. This trait is of great importance, as it strongly influences the longevity of the mammary system. The score varies from 1 to 9: 1 is given for an extremely weak ligament and 9 for an extremely strong ligament.



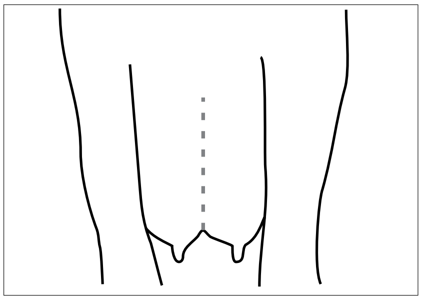
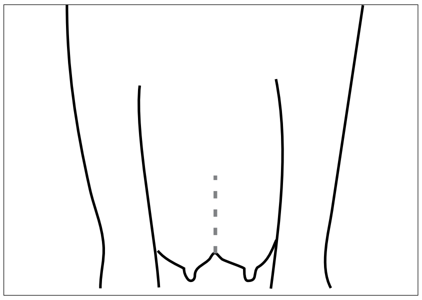
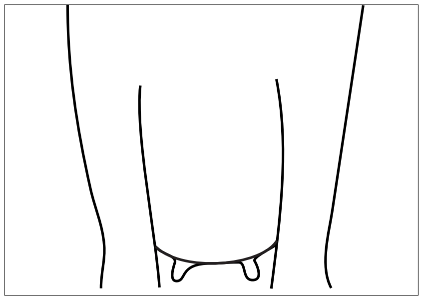
## 7.6. Mammary System

**7.6.1. Udder depth:** is the distance from an  imaginary line traced from the level of the hocks to the base of the udder. It is measured using a measuring tape or ruler. This trait strongly influences the longevity of the mammary system and the quality of the fore, rear and central ligaments. The ideal udder has its base at approximately 10 cm above the hocks. Deep udders are subject to trauma.



**7.6.2. Central ligament:** the quality and support of the central ligament is evaluated visually. It is directly related to the longevity of the mammary system. The score varies from 1 to 9: 1 is given for an extremely weak ligament and 9 for an extremely strong ligament.

It is one of them most important udder traits, as this ligament keeps the udder attached to the animal's abdomen. To support high production for a number of lactations, this ligament should be very strong. The more positive, the better.

## 7.7. Dairy Characterization

**7.7.1. Angularity:** the bone quality and dairy form of the animal is evaluated visually, considering the femininity and the angular form, also known as a wedge. The evaluation score ranges from 1 to 9: 1 given for extremely angular cows, 5 for intermediary angularity and 9 for extremely thickset cows.

## 7.8. Auxiliary Traits

**7.8.1. Temperament:** is evaluated by means of an animal docility score. More docile animals have better productive and reproductive performance. Scores vary between 1 and 9: 1 given for extremely aggressive animals and 9 for exceptionally docile animals.

**7.8.2. Milking ease:** is associated to the time and effort involved at the time of milking the animal. It is directly linked to milk production. Cows that are harder to milk tend to be more vulnerable to disease and to retain more milk (residual milk). For the evaluation of that trait, a score from 1 to 9 is given, very hard to milk cows are scored as 1 cows extremely easy to milk score a 9.

**7.8.3. Calving ease:** is related to the size of the calf and the need for assistance at the time of calving. Cows that calve easy resume post-partum estrus faster and, consequently, have better reproductive performance. This traits is evaluated by means of a score that varies from 1 to 9: 1 assigned to cows with extreme calving difficulty and 9 to cows with extreme facility in calving.

## 7.9. SALG Results

The averages for the traits described above are presented in Table 5. The averages for daughters of Girolando bulls participating in the Progeny Test are described.

## 7.10. How to Interpret the Results

In order to understand better the results of the evaluations published in this report, an example of results obtained and their interpretations are presented bellow (Table 6). Right after the sire's registration number XXXXX, and its general classification by PTAL (XX° - in parenthesis) and its name, are the registration numbers and the names of the sire's father, mother, and the PTA for milk production (PTAL), followed by reliability (REL).

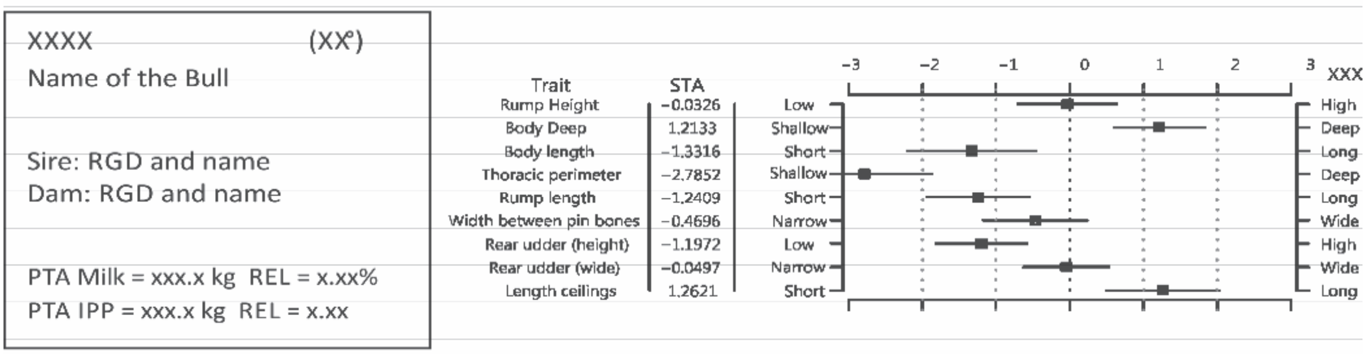
In the Table, the results for productive traits are in the left and the genetic evaluations, STAs (standardized PTAs) for some of the evaluated conformation and  management traits are in the right. STA is the standardized predicted transmitting ability (PTA) of the handling and conformation traits that allows comparison of the traits, even when they were measured in different units, as they are expressed as standard deviations. Thus, the breeder can evaluate a sire's ability to improve a specific trait, in case of the sire is bred with an average cow of the herd. STA values vary from -3 to 3 standard deviations.

**Table 5.** Averages of conformation traits and handling of cows that are daughters of Girolando bulls, measured and evaluated through SALG.

| Trait | | Number of Observations | $h^2 \pm$ SE** | Trait Average | Standard Deviation |
|---|---|---|---|---|---|
| **Body Capacity** | Height at the rump (cm) | 965 | 0.37±0.14 | 138.7 | 6.8 |
| | Body depth (cm) | 741 | 0.34±0.15 | 71.0 | 5.6 |
| | Body length (cm) | 967 | 0.10±0.11 | 110.8 | 9.5 |
| | Thoracic perimeter (cm) | 869 | 0.01±0.07 | 186.4 | 13.9 |
| | Chest amplitude (cm) | 822 | - | 3.07 | 0.64 |
| **Rump** | Rump length (cm) | 968 | 0.32±0.14 | 48.0 | 3.6 |
| | Width between pin bones (cm) | 968 | 0.24±0.12 | 19.2 | 2.8 |
| | Hook bone height (cm) | 741 | - | 135.5 | 6.1 |
| | Pin bone height (cm) | 741 | - | 128.3 | 5.8 |
| **Legs and Feet** | Legs - side view (*) | 822 | - | 2.93 | 0.6 |
| | Legs – rear view (*) | 823 | - | 2.84 | 0.5 |
| | Hoof angle (*) | 823 | - | 2.8 | 0.6 |
| **Posterior Udder** | Rear height (cm) | 764 | 0.32±0.15 | 17.4 | 3.8 |
| | Rear width (cm) | 763 | 0.23±0.13 | 10.1 | 2.9 |
| | Teat placement (*) | 770 | - | 3.1 | 0.8 |
| **Anterior Udder** | Teat length (cm) | 704 | 0.08±0.10 | 5.8 | 1.7 |
| | Teat placement (*) | 769 | - | 3.4 | 0.7 |
| | Ligament (*) | 770 | - | 3.3 | 0.7 |
| **Mammary System** | Udder depth (cm) | 703 | 0.09±0.15 | 13.9 | 4.8 |
| | Central ligament (*) | 768 | - | 3.3 | 1.7 |
| **Dairy characterization** | Angularity (*) | 965 | 0.37±0.14 | 138.7 | 6.8 |
| **Auxiliary traits** | Temperament (*) | 741 | 0.34±0.15 | 71.0 | 5.6 |
| | Milking ease (*) | 967 | 0.10±0.11 | 110.8 | 9.5 |
| | Calving ease (*) | 869 | 0.01±0.07 | 186,4 | 13.9 |

* Traits evaluated through scores.
** Heritability ± Standard error.

**Table 6.** Example for interpretation of results.




The first column, under the title Traits, contains the names of the traits and under the name STA, are the traits' respective standardized predicted transmitting abilities (standard deviation values of -3 to 3). The line in front each of the traits indicates its confidence interval, a measure related to the average and the reliability of the STA estimation. The dot on the line corresponds to the STA estimate. The smaller the line, the greater the reliability of the STA value, and contrariwise. Furthermore, the line expresses the confidence for the estimated STA averages within these limits that is expected for future mating, in 95% of the cases. It is important to stress that this information must be used with the aim of complementarily in mating.

It is important to highlight that this information should be used with the aim of achieving complementarity in breeding. The right or left deviations in conformation and management traits imply that there will be genetic progress in the selected direction. As an example, if a cow has very large teats (above average), the ideal scenario includes mating this cow with a sire that has an STA close to zero for teat length, seeking to correct this problem in the next generation. The same rationale should be applied to other traits.

The publication of a graph containing one sire's characteristics will only occur if the following criteria is met:
a) the sire must have a positive PTA for milk yield (Table 8);
b) the sire's daughters must have measures within SALG enough to guarantee reliability of the results.

### 7.11. STAs for Conformation

This year will not be published the results of STAs for conformation. New data were collected in 2015/2016 and are being analyzed. The results will be published later.

## 8. PTAs for Milk Production and Age at First Calving

The results of the genetic evaluation of sires, pertaining to the 12 groups tested since 1997, are presented in Tables 7 and 8.  Those contain the registration number, the genetic composition, and the name of each Girolando sire, the PTA for milk yield, the age at first calving (IFC), the reliability of each test, with the respective numbers of daughters and herds evaluated, as well as the sire's genotypes. These results are presented for sires used in at least three herds, with a minimum confidence interval of 60% for milk yield PTA, if the bull does not have more daughters to be assessed and has no semen available in the market, the result will be released even with a lower reliability at minimum.

Table 7 contains the results of the tests of 11 bulls, 8 from the eleventh group and 3 from twelveth group of the progeny test. The PTA for milk yield ranged from -65.33 kg to 503.76 kg, and 10 sires had positive genetic values and one had negative values. Out of the positive PTA sires, one is a PS, six are 5/8 HOL:G  and three are 3/4 HOL:G. The PTA for age at first calving ranged from -8.75 to 39.95 days, positive values were observed in nine sires and negative values were observed in two sires (Table 8).

Table 8 contains the general results and the genotypes for all sires tested since 1997. The PTAs for milk ranged from -444.76 kg to 504.19 kg, and 53 sires had positive genetic values and 35 had negative values. Among the 53 sires that had a positive PTA for milk yield, four are PS, 33 are 5/8 HOL:G  and 16 are 3/4 HOL:G. The PTA for age at first calving ranged from -9.75 to 66.57 days, positive values were observed in 72 sires and negative values were observed in 16 sires (Table 8).

The negative genetic correlation of milk yield in 305 days during the first lactation and age at first calving (Table 4) indicates that genes related to the former trait have an opposite effect under the later trait. It seems that daughters of sires that have a higher genetic value for milk yield in up to 305 days tend to have a more accelerated growth or earlier maturity. Hence, it can be concluded that selection for milk yield results also in earlier calving heifers. In this case, it should be stressed that sires that have a negative value for age at first calving (AFCPTA) are desirable, as daughters of a sire that has a AFCPTA of -10 days are prone to firstly calve 10 days earlier than daughters of sires that have AFCPTA equal to zero.

**Table 7.** Milk yield and genotypes results of the Girolando Breed Progeny Test of sires tested for the first time, ranked according to PTA milk in 2016.

| Rank. | Group | Reg. | Genetic composition | Sire | N Daughter | N Herds | PTA milk (kg) | R. PTA Milk (%) | PTA AFC[9] (days) | R. AFC[9] (%) | Molecular markers | | | | | | | | Semen available |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | *K-CN*[2] | *B-CN*[3] | *B-LGB*[4] | *DGAT 1*[5] | *BLAD*[6] | *DUMPS*[7] | *CVM*[8] | *OPN*[9] | AI Company |
| **1** | 12 | 1487 | 5/8 | Thor FIV da Prata JAC | 11 | 10 | 503.76 | 69 | 17.81 | 79 | AB | NG | AB | AK | TL | TD | TV | CT | Semex |
| **2** | 12 | 0990 | 3/4 | Curió FIV Paramount JGVA | 23 | 8 | 483.18 | 75 | -5.45 | 86 | AA | A2A2 | AA | AK | TL | TD | TV | CT | CRV Lagoa |
| **3** | 11 | 917 | 5/8 | Jacuba Prime Bem Feitor Lou* | 4 | 3 | 448.95 | 54 | 32.83 | 58 | AB | NG | AB | AK | TL | TD | TV | CT | Not available |
| **4** | 11 | 1413 | 5/8 | Limão TE JRS | 10 | 8 | 422.37 | 63 | 34.01 | 69 | AA | A2A2 | AB | AK | TL | TD | TV | CT | Not available |
| **5** | 11 | 1400 | 5/8 | RBC Arquiteto | 9 | 4 | 410.33 | 60 | 25.61 | 73 | AA | A2A2 | BB | AK | TL | TD | TV | CT | CRV Lagoa |
| **6** | 12 | 1021 | 3/4 | Charmoso Wildman Tannus | 43 | 20 | 293.27 | 83 | 39.95 | 91 | AA | A1A1 | BB | KK | TL | TD | TV | TT | Alta Genetics |
| **7** | 11 | 1313 | 5/8 | Sabiá IT | 35 | 18 | 284.93 | 76 | -8.75 | 88 | AA | A2A2 | AB | AK | TL | TD | NG | CT | ABS Pecplan |
| **8** | 11 | 944 | 3/4 | Aristeu Billy Linda Santa Luccia | 9 | 6 | 145.47 | 62 | 10.91 | 73 | AA | A1A2 | AA | KK | TL | TD | TV | CT | Semex |
| **9** | 11 | 0131 | PS | Heros Florin Dom Nato | 8 | 8 | 142.94 | 61 | 37.88 | 73 | AA | A2A2 | AA | AK | TL | TD | TV | CT | CRV Lagoa |
| **10** | 11 | 812 | 5/8 | Falcon Ribeirão Grande TE | 23 | 14 | 5.39 | 74 | 5.71 | 83 | AB | NG | BB | AK | TL | TD | TV | TT | Semex |
| **11** | 11 | 0053 | PS | Raro das Arábias | 7 | 6 | -65.33 | 60 | 26.80 | 67 | AA | A1A2 | AA | AK | TL | TD | TV | TT | ABS Pecplan |

[1] **AFC** - Age at first calving (days).
[2] **Allele A** - High yield for cheese**, Allele B** - low yield for cheese.
[3] **Allele A1** - associated with nutritional and health problems in humans, A2 - higher milk production and protein.
[4] **Allele A** - High milk yield **Allele B** - High protein and fat milk content.
[5] **Allele A** - Increase in milk and protein production, **Allele K** - Reduction in milk protein content and increase in milk fat content.
[6] **BL** - Heterozygote animal - carrier of the allele for BLAD, **TL** - Homozygote animal - non-carrier of the allele for BLAD
[7] **DP** - Heterozygote animal - carrier of the allele for DUMPS, **TD** - Homozygote animal - non-carrier of the allele for DUMPS
[8] **CV**- Animal - Heterozygote animal - carrier of the allele for CVM, **TV** - Homozygote animal - non-carrier of the allele for CVM
[9] **Allele C** - Associated to increased protein and fat milk content, **Allele T** - Associated to elevated weight gain.

**Table 8.** Milk yield and genotypes results of the Girolando Breed Progeny Test of sires from diverse tested groups, ranked according to PTA milk in 2016.

| Rank. | Group | Reg. | Genetic composition | Sire | N Daughter | N Herds | PTA Milk (kg) | R. (%) | PTA AFC[9] (dias) | R. AFC[9] (%) | Molecular markers | | | | | | | | Semen Disponível AI Company |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | K-CN[2] | B-CN[3] | B-LGB[4] | DGAT 1[5] | BLAD[6] | DUMPS[7] | CVM[8] | OPN[9] | |
| **1** | 9 | 1154 5/8 | 5/8 | Jacuba Titânio Bem Feitor Celsius | 11 | 11 | 504.19 | 68 | 10.32 | 77 | AA | NG | AB | AK | TL | TD | TV | TT | Alta Genetics |
| **2** | 12 | 1487 | 5/8 | Thor FIV da Prata JAC | 11 | 10 | 503.76 | 69 | 17.81 | 79 | AB | NG | AB | AK | TL | TD | TV | CT | Semex |
| **3** | 12 | 0990 | 3/4 | Curió FIV Paramount JGVA | 23 | 8 | 483.18 | 75 | -5.45 | 86 | AA | A2A2 | AA | AK | TL | TD | TV | CT | CRV Lagoa |
| **4** | 8 | 780 3/4 | 3/4 | Argeu Leduc Santa Luccia TE | 18 | 11 | 482.13 | 75 | 47.54 | 84 | AA | A2A2 | AA | AK | TL | TD | TV | TT | Not available |
| **5** | 11 | 917 | 5/8 | Jacuba Prime Bem Feitor Lou* | 4 | 3 | 448.95 | 54 | 32.83 | 58 | AB | NG | AB | AK | TL | TD | TV | CT | Not available |
| **6** | 11 | 1413 | 5/8 | Limão TE JRS | 10 | 8 | 422.37 | 63 | 34.01 | 69 | AA | A2A2 | AB | AK | TL | TD | TV | CT | Not available |
| **7** | 6 | 945 5/8 | 5/8 | Turbante Touch das Arábias | 39 | 15 | 417.81 | 80 | 52.45 | 89 | AA | A2A2 | AA | KK | TL | TD | TV | TT | Alta Genetics |
| **8** | 11 | 1400 | 5/8 | RBC Arquiteto | 9 | 4 | 410.33 | 60 | 25.61 | 73 | AA | A2A2 | BB | AK | TL | TD | TV | CT | CRV Lagoa |
| **9** | 10 | 806 3/4 | 3/4 | Luter King TE Terra Vermelha | 44 | 23 | 407.43 | 82 | 11.01 | 90 | AA | NG | AA | KK | TL | TD | TV | TT | Sembra |
| **10** | 11 | 960 3/4 | 3/4 | Torpedo Bolton Santa Luzia | 55 | 30 | 401.31 | 86 | 12.99 | 93 | AA | A1A2 | AB | AA | TL | TD | TV | CT | Not available |
| **11** | 11 | 1338 5/8 | 5/8 | Imperador FIV Ribeirão Grande | 22 | 17 | 335.60 | 75 | 4.29 | 85 | AA | A2A2 | AA | AA | TL | TD | TV | CT | ABS Pecplan |
| **12** | 12 | 1021 | 3/4 | Charmoso Wildman Tannus | 43 | 20 | 293.27 | 83 | 39.95 | 91 | AA | A1A1 | BB | KK | TL | TD | TV | TT | Alta Genetics |
| **13** | 11 | 1313 | 5/8 | Sabiá IT | 35 | 18 | 284.93 | 76 | -8.75 | 88 | AA | A2A2 | AB | AK | TL | TD | NG | CT | ABS Pecplan |
| **14** | 10 | 1293 5/8 | 5/8 | Jacuba Dark Bem Feitor Aaron | 9 | 9 | 242.85 | 62 | 27.12 | 74 | AA | NG | AB | AK | TL | TD | TV | TT | Alta Genetics |
| **15** | 5 | 621 5/8 | 5/8 | Kaien Celsius Itaúna | 10 | 9 | 234.42 | 71 | 25.63 | 81 | BB | A1A2 | AA | KK | TL | TD | TV | CT | Not available |
| **16** | 2 | 454 5/8 | 5/8 | Magical Mascot TE Rancho Alegre | 65 | 40 | 212.27 | 87 | 35.75 | 93 | AA | A2A2 | AA | KK | TL | TD | TV | TT | Not available |
| **17** | 4 | 541 3/4 | 3/4 | MBF 0246 | 6 | 4 | 208.20 | 60 | 39.40 | 69 | AA | NG | AA | AK | TL | TD | TV | CT | Not available |
| **18** | 6 | 931 5/8 | 5/8 | Lion Império Itaúna | 33 | 15 | 199.93 | 80 | -8.23 | 88 | AA | A1A2 | AA | AA | TL | TD | TV | TT | Not available |
| **19** | 11 | 1284 5/8 | 5/8 | Diplomata Roy Santa Luzia | 38 | 18 | 191.94 | 81 | -6.16 | 90 | AA | A2A2 | BB | KK | TL | TD | TV | CT | Alta Genetics |
| **20** | 5 | 580 3/4 | 3/4 | Aristóteles Grandslan TE Sta Luccia | 34 | 15 | 190.04 | 80 | 32.28 | 88 | AA | NG | AA | KK | TL | TD | TV | CT | Not available |
| **21** | 3 | 476 3/4 | 3/4 | Estand Luke HB | 33 | 13 | 186.44 | 77 | -4.61 | 86 | AA | A2A2 | AA | KK | TL | TD | TV | CT | Not available |
| **22** | 1 | 300 3/4 | 3/4 | 110 Billy Fancy Paul Y | 86 | 43 | 174.10 | 93 | 3.45 | 96 | AA | A1A2 | AA | KK | TL | TD | TV | CC | Not available |
| **23** | 9 | 855 3/4 | 3/4 | Garimpo Boss JGVA | 44 | 24 | 168.52 | 81 | 32.09 | 90 | AA | A1A2 | BB | AA | TL | TD | TV | CT | Alta Genetics |
| **24** | 10 | 1248 5/8 | 5/8 | Impacto FIV da Prata JAC | 96 | 37 | 149.20 | 89 | 1.86 | 95 | AA | A1A2 | AA | KK | TL | TD | TV | CT | Alta Genetics |
| **25** | 11 | 944 | 3/4 | Aristeu Billy Linda Santa Luccia | 9 | 6 | 145.47 | 62 | 10.91 | 73 | AA | A1A2 | AA | KK | TL | TD | TV | CT | Semex |
| **26** | 11 | 0131 | PS | Heros Florin Dom Nato | 8 | 8 | 142.94 | 61 | 37.88 | 73 | AA | A2A2 | AA | AK | TL | TD | TV | CT | CRV Lagoa |
| **27** | 5 | 734 5/8 | 5/8 | Cowboy Addison TE Rancho Alegre | 201 | 55 | 142.07 | 94 | -9.75 | 97 | AB | A2A2 | AA | KA | TL | TD | TV | TT | Not available |
| **28** | 10 | 1294 5/8 | 5/8 | Cacique Índio Sertão | 4 | 4 | 138.36 | 67 | 3.80 | 77 | AB | NG | BB | KK | TL | TD | TV | TT | Alta Genetics |
| **29** | 2 | 452 5/8 | 5/8 | Damião Bellwood 3E | 49 | 15 | 115.85 | 84 | 26.89 | 91 | AB | A1A2 | AA | KK | TL | TD | TV | TT | Not available |
| **30** | 7 | 1039 5/8 | 5/8 | Florin Marker Dom Nato | 42 | 21 | 115.70 | 83 | 14.07 | 91 | AA | A2A2 | AA | KK | TL | TD | TV | TT | CRV Lagoa |
| **31** | 8 | 754 3/4 | 3/4 | Diamante Billy da Cacá | 10 | 9 | 113.97 | 69 | 23.76 | 80 | AA | A1A2 | AA | AK | TL | TD | TV | CT | CRI Genética/Alta Genetics |
| **32** | 7 | 983 5/8 | 5/8 | Tango Storm Renascer | 44 | 21 | 108.80 | 84 | 11.84 | 91 | AA | A1A2 | AA | AA | TL | TD | TV | TT | Not available |
| **33** | 8 | 955 5/8 | 5/8 | Índio Windstar Sertão | 24 | 6 | 107.44 | 81 | 34.87 | 88 | AB | A2A2 | AB | AK | TL | TD | TV | TT | Not available |
| **34** | 7 | 636 3/4 | 3/4 | RBC Redator | 21 | 8 | 93.77 | 78 | 40.62 | 86 | AA | NG | AA | KK | TL | TD | TV | TT | Not available |
| **35** | 9 | 973 5/8 | 5/8 | Ébano Gordon da Limeira | 52 | 19 | 85.38 | 85 | 15.93 | 92 | AA | A1A2 | BB | AK | TL | TD | TV | TT | Not available |
| **36** | 6 | 563 3/4 | 3/4 | Executivo Billy Beleza Y TE | 36 | 17 | 82.00 | 81 | 36.35 | 89 | AB | NG | AA | KA | TL | TD | TV | TT | Not available |
| **37** | 9 | 0016 PS | PS | Notebook das Três Passagens | 7 | 5 | 77.06 | 69 | 39.87 | 80 | AA | A2A2 | AA | AK | TL | TD | TV | TT | Not available |
| **38** | 7 | 880 5/8 | 5/8 | Átila Irã da Cacá | 24 | 12 | 71.97 | 73 | 23.89 | 82 | AB | A2A2 | AA | KA | TL | TD | TV | TT | Sembra |
| **39** | 8 | 684 5/8 | 5/8 | Nicolau Fausto Itaúna | 15 | 9 | 69.12 | 69 | 17.90 | 80 | AA | A2A2 | AA | KK | TL | TD | TV | TT | Alta Genetics |
| **40** | 10 | 0030 PS | PS | Baú das Arábias | 13 | 7 | 65.48 | 74 | 11.78 | 84 | AA | NG | AA | AK | TL | TD | TV | TT | ABS Pecplan |
| **41** | 10 | 0020 PS | PS | Potter Kaien Itaúna | 11 | 9 | 65.41 | 67 | 32.32 | 78 | AB | NG | AA | AK | TL | TD | TV | TT | Alta Genetics |
| **42** | 5 | 781 5/8 | 5/8 | Rincão Itaipu Y | 54 | 27 | 59.16 | 87 | 35.66 | 93 | AA | A2A2 | AA | KK | TL | TD | TV | CT | Not available |
| **43** | 7 | 752 5/8 | 5/8 | Lama Preta Instrutor Cavalier | 12 | 6 | 56.28 | 60 | 21.92 | 67 | AA | NG | AA | KA | TL | TD | TV | CT | Not available |
| **44** | 10 | 917 3/4 | 3/4 | Abdu Lord Lily Santa Luz | 17 | 4 | 54.85 | 82 | -8.99 | 90 | AA | NG | AA | AK | TL | TD | TV | TT | CRV Lagoa |

(to be continued...)

(continuation...)

| Rank. | Group | Reg. | Genetic composition | Sire | N Daughter | N Herds | PTA Milk (kg) | R. (%) | PTA AFC[9] (dias) | R. AFC[9] (%) | Molecular markers | | | | | | | | Semen Disponível AI Company |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | K-CN[2] | B-CN[3] | B-LGB[4] | DGAT 1[5] | BLAD[6] | DUMPS[7] | CVM[8] | OPN[9] | |
| **45** | 8 | 1065 5/8 | 5/8 | Ocidente London do Morro | 15 | 11 | 52.67 | 69 | 25.11 | 82 | AA | NG | BB | AK | TL | TD | TV | CT | CRI Genética |
| **46** | 6 | 928 5/8 | 5/8 | Soberano Adonias Santa Luccia | 39 | 16 | 51.68 | 76 | 16.81 | 87 | AA | A2A2 | BB | AK | TL | TD | TV | CT | Not available |
| **47** | 2 | 455 5/8 | 5/8 | Maguito Mascot TE Rancho Alegre | 68 | 25 | 35.89 | 88 | 37.56 | 93 | AB | A2A2 | AA | KA | TL | TD | TV | TT | Not available |
| **48** | 9 | 1204 5/8 | 5/8 | Dillon Ito das Arábias | 20 | 9 | 29.31 | 73 | 12.76 | 84 | AA | NG | BB | AA | TL | TD | TV | CT | Not available |
| **49** | 9 | 1167 5/8 | 5/8 | Globo Billy JAC | 14 | 5 | 27.80 | 74 | -8.71 | 85 | AA | NG | AA | AK | TL | TD | TV | CC | Alta Genetics |
| **50** | 1 | 216 5/8 | 5/8 | Santa Cruz Zinabre Dynamic | 22 | 12 | 25.05 | 74 | -5.14 | 83 | AB | A1A1 | AA | AA | TL | TD | TV | TT | Not available |
| **51** | 5 | 566 3/4 | 3/4 | Escote Royalist Curral Velho | 21 | 11 | 14.59 | 65 | 5.66 | 79 | AA | NG | AA | KK | TL | TD | TV | CT | Not available |
| **52** | 1 | 243 5/8 | 5/8 | Dileto Balthazar Sonho | 20 | 11 | 11.21 | 69 | 52.38 | 79 | AA | A1A2 | AA | AA | TL | TD | TV | TT | Not available |
| **53** | 11 | 812 | 5/8 | Falcon Ribeirão Grande TE | 23 | 14 | 5.39 | 74 | 5.71 | 83 | AB | NG | BB | AK | TL | TD | TV | TT | Semex |
| **54** | 4 | 639 5/8 | 5/8 | Brutus das Arábias | 38 | 15 | -0.93 | 80 | 15.66 | 88 | AA | A2A2 | AA | KA | TL | TD | TV | TT | Not available |
| **55** | 7 | 997 5/8 | 5/8 | Curimã III TE Alegre | 25 | 17 | -8.92 | 78 | 36.43 | 85 | AA | A2A2 | AA | KA | TL | TD | TV | TT | Not available |
| **56** | 3 | 475 3/4 | 3/4 | Millenium Hortência Alf Boa Fé | 287 | 105 | -28.23 | 97 | -0.17 | 98 | AA | NG | AA | KK | TL | TD | TV | CT | ABS Pecplan |
| **57** | 4 | 500 3/4 | 3/4 | Chaplin Billy Fancy Paul Y | 57 | 29 | -34.79 | 86 | 3.39 | 92 | AA | A1A2 | AB | KA | TL | TD | TV | CT | Not available |
| **58** | 1 | 350 5/8 | 5/8 | Doutor Bellringer Itaúna | 47 | 22 | -35.78 | 85 | -7.91 | 91 | AB | A2A2 | AB | KA | BL | TD | TV | TT | Not available |
| **59** | 6 | 885 5/8 | 5/8 | Jaguar das Três Passagens | 66 | 33 | -40.29 | 88 | 10.22 | 94 | AA | A2A2 | AA | KA | TL | TD | TV | CT | Not available |
| **60** | 2 | 487 5/8 | 5/8 | Baco das Arábias | 55 | 26 | -42.90 | 87 | 2.90 | 92 | AA | A2A2 | AA | AA | TL | TD | TV | CT | Not available |
| **61** | 8 | 1066 5/8 | 5/8 | Milagre das Três Passagens | 28 | 9 | -44.12 | 79 | 40.01 | 87 | AA | NG | AA | KK | TL | TD | TV | CT | CRI Genética |
| **62** | 3 | 667 5/8 | 5/8 | Zimbo das Arábias | 57 | 26 | -49.14 | 86 | 13.41 | 93 | AA | A2A2 | AA | KA | TL | TD | TV | TT | Not available |
| **63** | 11 | 0053 | PS | Raro das Arábias | 7 | 6 | -65.33 | 60 | 26.80 | 67 | AA | A1A2 | AA | AK | TL | TD | TV | TT | ABS Pecplan |
| **64** | 4 | 470 5/8 | 5/8 | Galã Fancy Paul Itaúna TE | 44 | 16 | -72.44 | 79 | 24.03 | 88 | AA | A2A2 | AA | AA | TL | TD | TV | CT | Not available |
| **65** | 4 | 717 5/8 | 5/8 | Fausto Polo Itaúna | 104 | 50 | -75.50 | 92 | 6.41 | 96 | AA | A1A2 | BB | KK | TL | TD | TV | TT | Alta Genetics |
| **66** | 5 | 657 5/8 | 5/8 | Feiticeiro Riacho da Serra | 88 | 36 | -96.82 | 90 | 32.48 | 95 | AA | A1A2 | AA | KK | TL | TD | TV | TT | Not available |
| **67** | 2 | 366 3/4 | 3/4 | Nautilus Bandit Rancharia | 26 | 11 | -133.60 | 77 | -8.19 | 87 | AA | A2A2 | AA | KK | TL | TD | TV | CT | Not available |
| **68** | 6 | 864 5/8 | 5/8 | Império das Três Passagens | 18 | 11 | -137.90 | 73 | 1.60 | 83 | AA | A1A2 | BB | AA | TL | TD | TV | CT | Not available |
| **69** | 1 | 200 5/8 | 5/8 | Azoto da Ouro Verde | 44 | 22 | -148.62 | 81 | 18.61 | 89 | AA | A2A2 | AA | AA | TL | TD | TV | TT | Not available |
| **70** | 8 | 632 3/4 | 3/4 | Talento Millenium Boa Fé | 24 | 16 | -152.08 | 82 | 66.57 | 90 | AA | NG | BB | KK | TL | TD | TV | TT | Not available |
| **71** | 7 | 555 5/8 | 5/8 | Simbolo Swinger Cal | 39 | 18 | -164.07 | 81 | 12.87 | 89 | AA | A2A2 | AA | KA | TL | TD | TV | CT | Not available |
| **72** | 4 | 680 5/8 | 5/8 | Famoso das Três Passagens | 178 | 68 | -173.24 | 94 | 21.81 | 97 | AA | A2A2 | AB | AA | TL | TD | TV | CC | Not available |
| **73** | 1 | 215 5/8 | 5/8 | Santa Cruz Zape Elevation | 16 | 10 | -183.93 | 67 | 37.62 | 78 | AA | A2A2 | BB | KA | TL | TD | TV | TT | Not available |
| **74** | 9 | 0014 PS | PS | RBC Singelo | 10 | 6 | -187.30 | 74 | 30.40 | 84 | BB | NG | AB | AK | TL | TD | TV | CT | Not available |
| **75** | 2 | 312 3/4 | 3/4 | BR Granito Mandingo TE | 25 | 10 | -197.64 | 73 | 11.72 | 83 | AA | A2A2 | BB | AA | TL | TD | TV | CT | Not available |
| **76** | 5 | 619 5/8 | 5/8 | Garboso Curimatã das Três Passagens | 18 | 8 | -211.63 | 69 | 14.06 | 80 | AA | A1A2 | AA | AA | TL | TD | TV | TT | Not available |
| **77** | 7 | 559 5/8 | 5/8 | Bátila Irã da Cacá | 11 | 9 | -213.10 | 68 | 51.78 | 80 | AB | A2A2 | AA | KA | TL | TD | TV | CT | Not available |
| **78** | 9 | 797 5/8 | 5/8 | Netuno Famoso Dona Beja | 21 | 15 | -229.16 | 73 | -7.50 | 84 | AA | A2A2 | AB | KK | TL | TD | TV | TT | Not available |
| **79** | 6 | 871 5/8 | 5/8 | Lama Preta Hércules Twist-TE | 67 | 33 | -234.19 | 86 | -9.65 | 93 | AA | A2A2 | BB | AK | TL | TD | TV | CT | Not available |
| **80** | 8 | 999 5/8 | 5/8 | Curimã I TE Alegre | 30 | 17 | -236.15 | 83 | 36.94 | 90 | AA | A2A2 | AA | AA | TL | TD | TV | TT | Not available |
| **81** | 2 | 333 3/4 | 3/4 | Senador S.W.D Santa Izabel | 77 | 42 | -252.21 | 87 | 13.41 | 93 | AA | A2A2 | AA | KA | TL | TD | TV | CT | Not available |
| **82** | 10 | 0010 PS | PS | Fergus TE Caxi Alegre | 18 | 10 | -254.65 | 73 | 20.89 | 83 | AA | A2A2 | AA | KK | TL | TD | TV | TT | Not available |
| **83** | 8 | 1075 5/8 | 5/8 | Vilão TE Alegre | 176 | 67 | -288.30 | 95 | 4.46 | 98 | AB | NG | AA | KK | TL | TD | TV | TT | Not available |
| **84** | 3 | 345 5/8 | 5/8 | Caxi OG | 56 | 24 | -321.43 | 88 | 19.52 | 93 | AA | A2A2 | AA | KA | TL | TD | TV | TT | Not available |
| **85** | 2 | 410 5/8 | 5/8 | Curimatã Três Passagens | 261 | 79 | -327.02 | 96 | -0.42 | 98 | AB | A2A2 | AA | AA | TL | TD | TV | TT | Not available |
| **86** | 9 | 0007 PS | PS | Neon das Três Passagens | 11 | 8 | -363.27 | 70 | 43.85 | 80 | AA | A2A2 | AA | AA | TL | TD | TV | CT | Not available |
| **87** | 3 | 604 5/8 | 5/8 | Império Paviljon Itaúna | 46 | 21 | -377.72 | 87 | -5.24 | 93 | AA | NG | AA | KA | TL | TD | TV | CT | Not available |
| **88** | 3 | 479 5/8 | 5/8 | Dedé Três Passagens | 33 | 17 | -444.76 | 83 | 27.08 | 90 | AA | A1A2 | BB | AA | TL | TD | TV | CT | Not available |

[1]**AFC** - Age at first calving (days).
[2]**Allele A** - High yield for cheese**, Allele B** - low yield for cheese.
[3]**Allele A1** - associated with nutritional and health problems in humans, A2 - higher milk production and protein.
[4]**Allele A** - High milk yield **Allele B** - High protein and fat milk content.
[5]**Allele A** - Increase in milk and protein production, **Allele K** - Reduction in milk protein content and increase in milk fat content.
[6]**BL** - Heterozygote animal - carrier of the allele for BLAD, **TL** - Homozygote animal - non-carrier of the allele for BLAD
[7]**DP** - Heterozygote animal - carrier of the allele for DUMPS, **TD** - Homozygote animal - non-carrier of the allele for DUMPS
[8]**CV**- Animal - Heterozygote animal - carrier of the allele for CVM, **TV** - Homozygote animal - non-carrier of the allele for CVM
[9]**Allele C** - Associated to increased protein and fat milk content, **Allele T** - Associated to elevated weight gain.

## 9. Acknowledgments

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## 11. Glossary of Technical Terms

**Additive Genetic Variance** - The variation in the genetic values among animals of a population (breed), for a specific trait.

**Allele** - The alternative form of a specific gene located in the region of a homologous chromosome (locus). There are two alleles for each gene in diploid bovine cells, with and each allele passed down from a progenitor.

**Animal Model** - The procedure used to estimate genetic values or PTAs, using the registers records from the databases provided by breeder associations.

**BLUP (Best Linear Unbiased Prediction)** - Statistical method for data analysis, aiming to obtain solutions for the effects considered in a specific model. Among its statistical properties, the simultaneous estimation of equation solutions for fixed and random effects (genetic values) stands out are noteworthy. In practical ways, the genetic values (PTAs) are estimated simultaneously to the adjustment to the effects of the environment (contemporary herd-year groups, time, age at calving, genetic groups, etc.)

**Genetic Base** - The mean genetic value of cows born in a specific year, for each trait. Composed of the genetic merit reference of the breed for the comparison of bulls.

**Genetic correlation** - The probability that two distinct traits are determined by the same group of genes. Positive values mean that the group of genes increase the value of both traits, and negative values mean that one trait is increased and the other is decreased in response of the activation of the genes.

**Genotype** - The allelic constitution of a homologous chromosome region. Example: AA, Aa or AA.

**Heritability** - The parameter that describes the proportion of total variance for a specific trait that is due to the genetic differences among the individuals of the population (breed).

**Heterozygote** - The individual or genotype carrier of different alleles in one locus. Example: Aa.

**Homozygote** - The individual or genotype that presents two copies of the same allele in one locus. Example: AA or aa.

**MTDFREML** - The abbreviation for the set of programs written in the Fortran language (Multiple Trait Derivative Free REML), which uses the Restricted Maximum Likelihood methodology with the algorithm that does not use derivatives for the estimation of variance components and the prediction of animals' genetic values, in accordance with the model applied in the analysis of a specific database.

**PTA (Predicated Transmitting Ability)** - The measurement of the bull's genetic value, obtained through the performance of its daughters and its relatives in different herds, expressed as the difference (superiority or inferiority) of the breed's genetic base. Example: a bull with a PTA equal to 100 kg means that its progeny, on average, has an expected production potential of 100 kg of milk greater than the breed average.

**Reliability (R)** - The measurement of the amount of information used in the estimation of the genetic value. It indicates (in percentage) the confidence that can be placed on the PTA estimated for each bull. The greater the reliability, the greater the certainty that the value of the estimated PTA represents the real genetic value of the bull.

**Annex 1.** List and genotype of sires in test by the Girolando Progeny Test, ordered by group, breed composition and alphabetic order.

| Sire name | Reg. | Genetic composition | Father | Mother | Molecular Markers[1] | | | | | | | | Semen available - AI Company |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | K-CN[2] | B-CN[3] | B-LGB[4] | DGAT 1[5] | BLAD[6] | DUMPS[7] | CVM[8] | OPN[9] | |
| **11th Group - Results expected in 2017** | | | | | | | | | | | | | |
| Berílio Soberano Santa Luccia | 0052 PS | PS | Soberano Adonias Santa Luccia | Manequim Hético Dona Beja | AA | A1A2 | BB | AK | TL | TD | TV | CT | CRI Genética |
| **12th Group - Results expected in 2017** | | | | | | | | | | | | | |
| Deflector Rendeira Vilão FIV Boa Fé | 0072 | PS | Vilão TE Alegre | Rendeira Nica Millenium Boa Fé | AA | A2A2 | AB | AK | TL | TD | TV | TT | ABS Pecplan |
| Detetive Feiticeiro FIV Boa Fé | 0071 | PS | Feiticeiro Riacho da Serra | Rendeira Nica Millenium Boa Fé | AB | NG | AB | AK | TL | TD | TV | TT | ABS Pecplan |
| Dólar Dabliu Delib | 0064 | PS | Dabliu Curimatã Dom Nato | Tabitha Windstar El Rancho | AA | A2A2 | AA | AK | TL | TD | TV | TT | CRI Genética |
| Franco Feiticeiro Y | 0143 | PS | Feiticeiro Riacho da Serra | Caroline de Mônaco Sharp Y | AA | NG | AB | AK | TL | TD | TV | TT | Alta Genetics |
| IPA Bochecho | 0075 | PS | Zimbo das Arábias | IPA Ociosa | AA | A2A2 | AB | AK | TL | TD | TV | TT | Alta Genetics |
| Atual Garimpo Zak TE | 1096 | 5/8 | Garimpo Boss JGVA | Estrela Tricordiana | AA | A1A2 | AB | AK | TL | TD | TV | TT | Indisponível |
| Imperor Bolton Santa Luzia | 1211 | 5/8 | Sandy Valley Bolton-ET | Laranja Santa Luzia | AA | NG | AB | KK | TL | TD | TV | TT | CRV Lagoa |
| Jacuba Fax Bem Feitor Garter | 1464 | 5/8 | Welcome Garter-ET | Jacuba II Tais I | AA | A2A2 | BB | AK | TL | TD | TV | TT | CRI Genética |
| Jacuba Printer Bem Feitor Blitz | 1465 | 5/8 | Fustead Emory Blitz-ET | Jacuba II Natureza I | AA | NG | BB | AK | TL | TD | TV | CT | ABS Pecplan |
| Netuno Astre Renascer | 1662 | 5/8 | Duregal Astre Starbuck | Morena Renascer | AA | A1A2 | AB | AK | TL | TD | TV | CT | CRV Lagoa |
| Ozias da Centrogen TE | 1671 | 5/8 | Sandy Valley Bolton-ET | Jenoca LH TE | AA | NG | BB | KK | TL | TD | TV | CT | ABS Pecplan |
| Alfy Cayuaba Mission Irídio TE | 993 | 3/4 | Seagull-Bay Mission-ET | Alfy Cayuaba Teatro Danda | AA | NG | AB | AK | TL | TD | TV | TT | Alta Genetics |
| Imperador Toy Story FIV Gama | 1022 | 3/4 | Jenny Lou Marshall Toystory-ET | Beldade MAMJ | AB | NG | BB | AK | TL | TD | NG | CT | CRI Genética |
| Jordan Goldwyn DLS | 823 | 3/4 | Braedale Goldwyn | Teteia OG | AB | NG | AB | AK | TL | TD | TV | CT | ABS Pecplan |
| JPZ Bulgari Millenium Lia Santa Luccia | 1111 | 3/4 | Millenium Hortência Alf Boa Fé | Lia Terra Vermelha | AA | NG | AB | AK | TL | TD | TV | CC | ABS Pecplan |
| RBC Barão | 987 | 3/4 | Ricecrest Touchdown-ET | Cajamanga AAO | AB | A2A2 | AA | AK | TL | TD | TV | CT | ABS Pecplan |
| **13th Group - Results expected in 2018** | | | | | | | | | | | | | |
| Bambu FIV Rincão da Tropical | 0045 | P/S | Rincão Itaipu Y | Rendeira Nica Millenium Boa Fé | AA | NG | AB | AK | TL | TD | TV | CT | CRV Lagoa |
| Boticário da Olaria | 0197 | P/S | Fausto Polo Itaúna | Ficção Olaria | AA | NG | BB | AK | TL | TD | TV | TT | CRV Lagoa |
| IPA Cajano | 0076 | P/S | Magical Mascot TE Rancho Alegre | IPA Selada | AA | NG | AB | AK | TL | TD | TV | CT | Sembra |
| Júpiter FIV Rincão São Marcos | 0207 | PS | Rincão Itaipu Y | 363 Urik Vista Alegre | AA | A2A2 | AA | AK | TL | TD | TV | TT | Alta Genetics |
| Mago Zimbo das Arábias | 0313 | PS | Zimbo das Arábia | Angel Touch das Arábias | AA | A2A2 | BB | AK | TL | TD | TV | TT | ABS Pecplan |
| Apolo FR Recreio | 1590 | 5/8 | Regancrest JR Defender-ET | Jacutinga FR Recreio | AA | NG | AB | AK | TL | TD | TV | CT | CRI Genética |
| Duque FIV Shottle da Medalha Milagrosa | 1470 | 5/8 | Picston Shottle-ET | Lama Preta Opala Brilhante | AB | NG | AA | AK | TL | TD | TV | CT | ABS Pecplan |
| General Millenium FIV TS da Muquém | 1750 | 5/8 | Millenium Hortência Alf Boa Fé | Viola Esteio Valiant LE | AA | A2A2 | AB | AK | TL | TD | TV | CT | CRV Lagoa |
| Imperador Baxter Volta Fria | 1459 | 5/8 | Emerald-ACR-SA T-Baxter | Felipeta Cenoura Bazuah Volta Fria | AA | A2A2 | BB | KK | TL | TD | TV | CT | Alta Genetics |
| Imperador Jocko FIV WTF da Estiva | 1600 | 5/8 | Jocko Besn | Zumira 982 WTF da Estiva | AA | NG | AB | AK | TL | TD | TV | TT | CRV Lagoa |
| Jacuba Master Benfeitor Shottle | 1762 | 5/8 | Picston Shottle-ET | Jacuba II Natureza I | AA | A2A2 | AB | AK | TL | TD | TV | CC | ABS Pecplan |
| Labirinto Don FAC | 1526 | 5/8 | Gem-Hill Amel Don-ET | Carol Paladino FAC | AA | NG | BB | AK | TL | TD | TV | CT | CRI Genética |
| Minister da Prata JAC | 1560 | 5/8 | Mr. Minister | Harmonia Terra Vermelha | AA | A1A2 | AB | AK | TL | TD | TV | CT | Alta Genetics |
| Pavão Olympic IA da Terra Sagrada | 1640 | 5/8 | Delta Olympic | Fazendona da Terra Sagrada | AB | A2A2 | AB | AK | TL | TD | TV | CT | CRV Lagoa |
| Projeto Leitegen | 1594 | 5/8 | Stouder Morty-ET | Paloma Estância Correa | AA | NG | BB | AK | TL | TD | TV | TT | CRV Lagoa |
| RBC Caratê | 1485 | 5/8 | Ricecrest Touchdown-ET | Padaria Retiro da Barra | AA | A2A2 | BB | AK | TL | TD | TV | CT | ABS Pecplan |
| Rei Shottle da Centrogen FIV | 1671 | 5/8 | Picston Shottle-ET | Opera da Centrogen TE | AA | NG | AB | AK | TL | TD | TV | CT | ABS Pecplan |
| Rocky Goldwyn FIV RDMS | 1731 | 5/8 | Braedale Goldwyn | Laranja Santa Luzia | AB | A1A2 | AB | KK | TL | TD | TV | CT | Alta Genetics |
| Tajmahal Wildman JSM | 8080-D | 5/8 | Ladys-Manor Wildman | Rubi Indiano OG | AA | A2A2 | AB | KK | TL | TD | TV | CT | Sembra |
| Tufão Flora Toystory Itauna | 1675 | 5/8 | Jenny Lou Marshall Toystory-ET | Flora 4 Nobre Itauna | AB | A2A2 | AB | AK | TL | TD | TV | CT | CRI Genética |
| Atual Wildman Thor TE | 747 | 3/4 | Ladys-Manor Wildman | Estrela Tricordiana | AA | A1A1 | AB | AK | TL | TD | TV | TT | Alta Genetics |
| Galanteio XA | 409 | 3/4 | Mr. Minister | Canção XA | AA | NG | AB | AK | TL | TD | TV | CC | ABS Pecplan |
| Gold Goldwyn RPM da Santo Antônio | 1122 | 3/4 | Braedale Goldwyn | Romana Barbante RPM Santo Antônio | AA | A2A2 | AB | KK | TL | TD | TV | CC | Alta Genetics |
| JPZ Basileu Argeu Linda FIV | 1203 | 3/4 | Argeu Leduc Santa Luccia TE | Linda do SPA | AA | NG | AB | AK | TL | TD | TV | CC | CRV Lagoa |
| Napolitano TE Terra Vermelha | 487 | 3/4 | Doolhof December | Quartinha Terra Vermelha | AA | NG | AB | KK | TL | TD | TV | CT | CRV Lagoa |
| **14th Group - Results expected in 2019** | | | | | | | | | | | | | |
| Albatroz Laverna Aftershok Nova Terra | 1652 | PS | MS Atlees SHT Aftershock-ET | Lama Preta Laverna Rajkot | AA | A1A2 | AB | AK | TL | TD | TV | TC | ABS Pecplan |
| Axxor Avalon RPM da Santo Antônio | 1734 | PS | Farnear- TBR Altaavalon-ET | Geleia Sansão RPM Santo Antonio | AB | A2A2 | AA | AK | TL | TD | TV | TT | Alta Genetics |
| Barreto Masky Felícia Fausto FIV | 3841-H | PS | Fausto Polo Itaúna | Felicia Riberao Grande TE | AA | A2A2 | BB | AK | TL | TD | TV | TT | Semex |

(to be continued...)

(continuation...)

| Sire name | Reg. | Genetic composition | Father | Mother | Molecular Markers[1] | | | | | | | | Semen available - AI Company |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | K-CN[2] | B-CN[3] | B-LGB[4] | DGAT 1[5] | BLAD[6] | DUMPS[7] | CVM[8] | OPN[9] | |
| Bond Choral Felicidade | 7000-J | PS | Emerald-ACE-VA Choral ET | Lama Preta Nuvem Meteoro | AB | A2A2 | AA | AK | TL | TD | TV | TT | Alta Genetics |
| Brazão Bixia Toystory Nova Terra | 1105 | PS | Jenny-LOU Marshall Toystory-ET | Engenho da Rainha Bixia | AB | A2A2 | AA | AK | TL | TD | TV | TC | ABS Pecplan |
| Delegado Homestead FIV GRF M. Milagrosa | 1800-D | PS | Bomaz Homestead-ET | Calha Castelo Boa Fé | AB | A1A2 | AA | AK | TL | TD | TV | TC | ABS Pecplan |
| Diamante Valinhos | 0040 | PS | Fausto Polo Itaúna | Imagem Valinhos | AA | A1A2 | BB | AK | TL | TD | TV | TC | Semex |
| Dionisio FR Recreio | 9999-H | PS | Tango Storm Renascer | Leopoldina FR Recreio | AB | A1A1 | AA | AK | TL | TD | TV | TT | CRI Genética |
| Galáctico 4365 Megaton NF Irmãos | 3984-H | 5/8 | ShadyCrest-H Megaton-ET | Elegancia 4365 Gameta NF Irmãos | AB | A2A2 | AA | AK | TL | TD | CV | TT | ABS Pecplan |
| Gênio das Arábias | 8686-F | 5/8 | Bomaz Shtl Kolton 692-ET | Semente das Arabias | AA | A1A2 | AB | AK | TL | TD | TV | TT | CRI Genética |
| Golias Fausto da Mu Mu | 0580-D | 5/8 | Fausto Polo Itaúna | Dolores Dabliu da Mu mu | AA | A2A2 | BB | AK | TL | TD | TV | TT | Alta Genetics |
| Icaro Super RBR | 1209 | 5/8 | Charlesdale Superstition ET | Volga Bem Feitor RBR | AA | A1A1 | BB | AK | TL | TD | TV | TC | CRI Genética |
| Jacuba GM Kyoto Bem Feitor Planet | 1769 | 5/8 | Encenada Taboo Planet-ET | Jacuba I Bela I | AA | A2A2 | BB | AK | TL | TD | TV | TT | ABS Pecplan |
| Jagunço IV FIV Shottle Alegre | 1733 | 5/8 | Picston Shottle-ET | Colonia Sansão OG | AA | A2A2 | AB | AK | TL | TD | TV | TC | Alta Genetics |
| JPZ Calisto FBI Laranja FIV | 1681 | 5/8 | Gillette Brilea FBI | Laranja Santa Luzia | AA | A2A2 | BB | AK | TL | TD | TV | TC | Semex |
| Luti Florin Dom Nato | 0580-G | 5/8 | Florin Marker Dom Nato | Rendeira Nica Millenium Boa Fé | AA | A2A2 | AA | AK | TL | TD | TV | TT | ABS Pecplan |
| Mark Fausto TE São Marcos | 8080-I | 5/8 | Fausto Polo Itaúna | 363 Urik Vista Alegre | AA | A1A2 | BB | AK | TL | TD | TV | TC | CRI Genética |
| Meteoro Florim JEBR | 0039 | 3/4 | Florin Marker Dom Nato | Macieira JEBR | AA | A2A2 | AA | AK | TL | TD | TV | TC | Alta Genetics |
| Olodum Sadonana FIV | 1170 | 3/4 | Millenium Hortencia ALF Boa Fé | Kayene TE Sadonana | AB | A2A2 | BB | AK | TL | TD | TV | TC | CRI Genética |
| Quentao Planet FIV FZD | 1187 | 3/4 | Encenada Taboo Planet-ET | Parabolica Everest 3E | AB | A2A2 | AB | AK | TL | TD | TV | TC | CRV Lagoa |
| Rage Blitz da Garden S Buck | 0911-E | 3/4 | Fustead Emory Blitz-ET | Maravilha Rolex Fela | AA | A2A2 | AA | AK | TL | TD | TV | TT | Sembra |
| Recanto da Baronesa Bonitão | 8470-K | 3/4 | Fausto Polo Itauna | Liz Luke TE Mutum | AA | A2A2 | BB | AK | TL | TD | TV | TC | Alta Genetics |
| Tesouro Dengo Toystory Itaúna | 1682 | 3/4 | Jenny-LOU Marshall Toystory-ET | Dengosa 6 Nobre Itauna | AB | A2A2 | AB | AK | TL | TD | TV | TC | CRV Lagoa |
| **15th Group - Results expected in 2020** | | | | | | | | | | | | | |
| Alado Blitz FIV JM Monte Alverne | 1206 | 3/4 | Fustead Emory Blitz-ET | Botique JM Monte Alverne | AA | A2A2 | AB | AK | TL | TD | TV | NG | CRV Lagoa |
| Alfy Cayuaba Impacto Kamby IV | 190 | 5/8 | Impacto FIV da Prata JAC | Alfy Cayuaba Cacique Halina | AA | A1A2 | AA | AK | TL | TD | TV | NG | Alta Genetics |
| Caique Goldwyn FIV F. Congonhas | 6827-P | 5/8 | Braedale Goldwyn | Neves da CA Boa Vista | AA | A2A2 | AB | AK | TL | TD | TV | NG | Alta Genetics |
| Capiu FIV Florin da Tropical | 1010-M | PS | Florin Marker Dom Nato | Celeste Durham Santa Luzia | AA | A2A2 | AA | AK | TL | TD | TV | NG | CRV Lagoa |
| Castelo de Uberaba Goldwyn Fube | 7114-R | 5/8 | Braedale Goldwyn | Castanhola Herdeiro MAMJ | AA | A2A2 | AB | KK | TL | TD | TV | NG | Alta Genetics |
| Corel FIV Fausto da Tropical | 1020-M | PS | Fausto Polo Itauna | Rendeira Nica Millenium Boa Fe | AA | A2A2 | BB | AK | TL | TD | TV | NG | Alta Genetics |
| Dragao FIV Wildman da Tropical | 1000-M | 5/8 | Ladys-Manor Wildman-ET | Pitanga Sansão OG | AA | A1A2 | BB | AK | TL | TD | TV | NG | Alta Genetics |
| Ebalco Magnetim FIV da Medalha Milagrosa | 6833-P | 5/8 | Mister Magnetism-ET | Lama Preta Opala Brilhante | AA | A2A2 | AB | AK | TL | TD | TV | NG | ABS Pecplan |
| Evoque Morty Gil Giv São Marcos | 7120-R | 5/8 | Stouder Morty-ET | Gil São Marcos | NG | NG | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Farrok FIV Córrego Branco | 1232 | 3/4 | Torpedo Bolton Santa Luzia | Mexerica Santa Luzia | AA | A2A2 | AB | AK | TL | TD | TV | NG | CRV Lagoa |
| Febo FR Recreio | 6300-N | 3/4 | Stanbro More | Lapaz FR Recreio | AA | A1A1 | AA | AK | TL | TD | TV | NG | CRV Lagoa |
| Groman FIV Blitz Santa Luzia | 1795 | 5/8 | Fustead Emory Blitz-ET | Castanhola Herdeiro MAMJ | AA | A2A2 | BB | AK | TL | TD | TV | NG | Semex |
| Hugo Fever da Mumu | 6829-P | 5/8 | Crackholm Fever | Eureka I FIV Teatro Delib | AA | A2A2 | AA | KK | TL | TD | TV | NG | Semex |
| ICH K85 Canela Shottle | 4230-K | 3/4 | Picston Shottle-ET | ICH Canela Teatro | AA | A1A2 | AB | AK | TL | TD | TV | NG | ABS Pecplan |
| Jacuba Ping Impressor Freddie | 1765 | 5/8 | Badger Bluff Fanny Freddie | Jacuba I Brenda II | AB | NG | AA | AK | TL | TD | TV | NG | ABS Pecplan |
| Jagunço VIII FIV Shotle Alegre | 6839-P | 5/8 | Picston Shottle-ET | Colonia Sansao OG | AA | A1A2 | AA | AK | TL | TD | TV | NG | Alta Genetics |
| Natan Mandel Dom Nato | 8738-J | 5/8 | Lutz-Meadows e Mandel-ET | Gioconda Napolitano Dom Nato | AA | A1A2 | AB | AK | TL | TD | TV | NG | CRV Lagoa |
| Pierro FIV Morada Corinthiana | 2386-Q | 5/8 | Impacto FIV da Prata JAC | Jalita Tutti Morada Corinthiana | AB | A1A2 | AB | AK | TL | TD | TV | NG | Alta Genetics |
| Porto Real Da Terra Vermelha | 1799-D | 3/4 | Picston Shottle-ET | Quartinha Terra Vermelha | AA | A1A2 | AA | AK | TL | TD | TV | NG | ABS Pecplan |
| Queops Planet FIV 3S FZD | 1188 | 5/8 | Ensenada Taboo Planet | Raina Quilate do Fazendão | AA | A2A2 | AA | AK | TL | TD | TV | NG | Alta Genetics |
| Querubin FIV Terra Vermelha | 2254-J | 5/8 | Mountfield Altaexacter | Lalila TE Terra Vermelha | AB | A2A2 | AB | AK | TL | TD | TV | NG | Semex |
| RBC Farol Paramount FIV | 2820-I | 5/8 | Delta Paramount | Laranja Santa Luzia | AA | A2A2 | AB | AK | TL | TD | TV | NG | CRV Lagoa |
| Templo Raro das Arabias II | 78 | PS | Raro das Arabias | Bailarina das Arabias | AA | A2A2 | AA | KK | TL | TD | TV | NG | Alta Genetics |
| Vesúvio Avalon Itáuna | 6836-P | 5/8 | Farnear-TBR Altaavalon-ET | Norma Jarro de Ouro Itaúna | AA | A2A2 | AB | AK | TL | TD | TV | NG | Alta Genetics |
| Vulcano Avalon Itaúna | 6838-P | 5/8 | Farnear-TBR Altaavalon-ET | Laranja Limogenes Itaúna | AB | A2A2 | AB | AK | TL | TD | TV | NG | Semex |
| **17th Group - Results expected in 2021** | | | | | | | | | | | | | |
| Batuque Diamante Java | 5127N | PS | Diamante Valinhos | Lama Preta Kamuela Lheros | AA | A1A2 | BB | AK | TL | TD | TV | NG | Semex |
| Destaque FIV Fausto Morada Corinthiana | 5383W | PS | Fausto Polo Itauna | Jalita Tutti Morada Corinthiana | NG | A2A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |

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| Sire name | Reg. | Genetic composition | Father | Mother | Molecular Markers[1] | | | | | | | | Semen available - AI Company |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | K-CN[2] | B-CN[3] | B-LGB[4] | DGAT 1[5] | BLAD[6] | DUMPS[7] | CVM[8] | OPN[9] | |
| Poderoso Fausto OG | 1000P | PS | Fausto Polo Itauna | Esparta Windstar OG | NG | A1A1 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Surfista FIV das Arábias II | 6637S | PS | Turbante Touch das Arábias | Bailarina das Arábias | NG | A2A2 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Turbo das Arábias | 79 | PS | Turbante Touch das Arabias | Preta Jewel das Arábias | AA | A2A2 | AB | AK | TL | TD | TV | NG | Accelerated Genetics |
| Arpoador Lamina Aftershock FIV NT | 5753J | 5/8 | MS Atlees SHT Aftershock | Lama Preta Lamina Pioneiro | AA | A1A2 | AB | AK | TL | TD | TV | NG | Alta Genetics |
| Brooklin Rancho Tunin | 5385W | 5/8 | Gillette Windbrook | Olinda Terra Vermelha | NG | A2A2 | NG | NG | NG | NG | NG | NG | Semex |
| Calígula Aftershock FIV da Xapetuba | 5654R | 5/8 | MR Atlees SHT Aftershock | Harmonia Terra Vermelha | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Cantor Wildman IA da Xapetuba | 6831P | 5/8 | Ladys-Manor Wildman-ET | Iguana Palma | AA | A2A2 | BB | AK | TL | TD | TV | NG | CRV Lagoa |
| Deano FIV Goldwyn da Tropical | 7640S | 5/8 | Braedale Goldwyn | Pitanga Sansão OG | NG | A1A2 | NG | NG | NG | NG | NG | NG | Accelerated Genetics |
| Destino Jayven FIV F. Congonhas | 7900Q | 5/8 | Stouder Jayven-ET | Neves da C.A Boa Vista | NG | A2A2 | NG | NG | NG | NG | NG | NG | ABS Pecplan |
| Detetive Jayven FIV F. Congonhas | 7901Q | 5/8 | Stouder Jayven-ET | Bibiana FIV Sansão da Tropical | NG | A2A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Eldorado FIV da Prata JAC | 0583Q | 5/8 | Gen-Mark Stmatic Sanchez | Harmonia Terra Vermelha | NG | A2A2 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Logan FIV Rio do Leite | 5300U | 5/8 | Picston Shottle-ET | Laranja Santa Luzia | NG | A2A2 | NG | NG | NG | NG | NG | NG | N/D |
| Quincas da Terra Vermelha | 2253J | 5/8 | Mountfield Altaexacter | Lalila TE Terra Vermelha | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Raroa Reitor Sansão Gerard | 8700K | 5/8 | Schillview Oman Gerard | Franca TE Sansao RPM Santo Antonio | NG | A2A2 | NG | NG | NG | NG | NG | NG | ABS pecplan |
| RBC Florentino Shottle | 5220U | 5/8 | Picston Shottle-ET | RBC Colcheia | NG | A2A2 | NG | NG | NG | NG | NG | NG | Semex |
| Romano Jocko FIV WTF da Estiva | 1763 | 5/8 | Jocko Besne | Zumira 982 WTF Da Estiva | NG | A2A2 | NG | NG | NG | NG | NG | NG | Select Sires |
| Valente FIV da Prata JAC | 0584Q | 5/8 | Picston Shottle-ET | Harmonia Terra Vermelha | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Apolo FIV Extreme RC do Morro | 4986M | 3/4 | MR Andis Altaextreme | Legitima Ravena das Três Passagens | NG | NG | NG | NG | NG | NG | NG | NG | Não disponível |
| Elino FIV Shottle da Tropical | 3240G | 3/4 | Picston Shottle-ET | Espanhola Fiasco MAMJ | NG | NG | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Horizonte FIV Xa | 8803J | 3/4 | Hornland Jayz-ET | Balada X.A | NG | A2A2 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| ICH Lupi Aftershock | 4228K | 3/4 | MR Atlees SHT Aftershock | ICH Canela Teatro | NG | NG | NG | NG | NG | NG | NG | NG | ABS Pecplan |
| JPZ Olimpio Argeu Linda FIV | 5381W | 3/4 | Argeu Leduc Santa Luccia | Linda do SPA | NG | NG | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Oásis da Divisa Luxo Aftershock | 2837J | 3/4 | MR Atlees SHT Aftershock | Botique JM Monte Alverne | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Rústico FIV Santa Luzia | 1566S | 3/4 | Gillette Jordan | Aduana DF | NG | NG | NG | NG | NG | NG | NG | NG | ABS Pecplan |
| **17th Group - Results expected in 2022** | | | | | | | | | | | | | |
| Apocalipse Goli FIV WTF da Estiva | 4566J | 5/8 | DE-SU Oman Goli-Et | Denuncia Refugio WTF da Estiva | NG | A1A2 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Astronalta FIV IT | 9077L | 5/8 | Schillview Oman Gerard-ET | Duda Kubera IT | NG | A2A2 | NG | NG | NG | NG | NG | NG | ABS Pecplan |
| Barack FIV Atwood RC do Moinho | 8915U | 5/8 | Maple-Downs-I G W Atwood ET | Bianca Sansao FIV JJC | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Cadilack Gerard FIV Nova Fé | 2596F | 5/8 | Schillview Oman Gerard-ET | Colonia Sansao OG | NG | A2A2 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Casique Abacatuxia Jordan Estancia Nova Terra | 9140M | 5/8 | Gillette Jordan | Abacatuxia Bixia Jaguar FIV E.N.T | NG | A1A2 | NG | NG | NG | NG | NG | NG | ABS Pecplan |
| Cobalter FIV Goldwyn Jacuba Santa Luzia | 9795 | 5/8 | Braedale Goldwyn | Jacuba I Bela I | NG | A2A2 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Conde Gerard FIV Nova Fé | 9152U | 3/4 | Schillview Oman Gerard-ET | Engenho da Rainha Balada | NG | A1A1 | NG | NG | NG | NG | NG | NG | ABS Pecplan |
| Cupido Planet Renascer | 9384M | 3/4 | Ensenada Taboo Planet-ET | Maluca Marvelous Renascer | NG | A2A2 | NG | NG | NG | NG | NG | NG | Select Sires |
| Demetrio Felicidade Braxton Nova Terra | 3056Z | 5/8 | Regancrest S Braxton ET | Felicidade FIV Everest Volta Fria | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Dialeto Shottle IA da Xapetuba | 9743Y | 3/4 | Picston Shottle-ET | Aspen Paramount FIV da Xapetuba | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Etelvino FIV Planet da Tropical | 4476K | 3/4 | Ensenada Taboo Planet-ET | Dracena Fabian Mamj | NG | A2A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Federal Bolton FIV da Medalha Milagrosa | 6212X | 5/8 | Sandy-Valley Bolton ET | Lama Preta Opala Brilhante | NG | A2A2 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Feitiço Bolton FIV da Medalha Milagrosa | 4850AE | 5/8 | Sandy-Valley Bolton ET | Lama Preta Opala Brilhante | NG | A2A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Fortiz Tango FIV Boa Fé | 0036 | PS | Tango Storm Renascer | Felicia Ribeirão Grande TE | NG | A2A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Jango FIV Aftershock Rancho do Ro | 330 U | 3/4 | MS Atlees SHT Aftershock - ET | Engenho da Rainha Brenda Teatro | NG | A1A1 | NG | NG | NG | NG | NG | NG | ABS Pecplan |
| Lama Preta Salmão Jerrick FIV | 1571S | 5/8 | Gillette Jerrick | Lama Preta Manchete Meteoro | NG | A1A1 | NG | NG | NG | NG | NG | NG | Semex |
| Lancaster FIV Garrison Santa Luzia | 5622P | 3/4 | Penn-England Garrison ET | Aduana DF | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Luxo FIV Atwood Ermelinda Volta Fria | 9100I | 3/4 | Maple-Downs-I G W Atwood ET | Ermelinda Mergulhao | NG | A1A1 | NG | NG | NG | NG | NG | NG | Select Sires |
| Raroa Raio Toystory | 8248Y | 5/8 | Jenny-Lou Marshall Toystory-ET | Franca TE Sansao RPM Santo Antonio | NG | A2A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Segredo FIV Terra Vermelha | 8272S | 3/4 | Crockett-Acres B Bronson-ET | Quartinha Terra Vermelha | NG | A1A2 | NG | NG | NG | NG | NG | NG | CRV Lagoa |
| Thor FIV FR Recreio | 4913P | 5/8 | Rockalli Bradley | Jacutinga FR Recreio | NG | A1A2 | NG | NG | NG | NG | NG | NG | Alta Genetics |
| Titan Gold Chip DLS Pantanal | 9085 | 5/8 | MR Chassity Gold Chip-ET | Alicia Radar Dls Pantanal | NG | A1A2 | NG | NG | NG | NG | NG | NG | Semex |
| Twister Windbrook Tannus | 1579 | 3/4 | Gillette Windbrook | Alcachofra Mamj | NG | A2A2 | NG | NG | NG | NG | NG | NG | Semex |
| Viçoso Aftershock RC do Moinho | 4983M | 5/8 | MS Atlees Sht Aftershock - ET | Vicosa Sansao FIV JJC | NG | A1A2 | NG | NG | NG | NG | NG | NG | Semex |

[1]NG - Not genotyped, [2]Allele A - High yield for cheese, Allele B - low yield for cheese. [3]Allele A1 - associated with nutritional and health problems in humans, A2 - higher milk production and protein, [4]Allele A - High milk yield Allele B - High protein and fat milk content. [5]Allele A - Increase in milk and protein production, Allele K - Reduction in milk protein content and increase in milk fat content. [6]BL - Heterozygote animal - carrier of the allele for BLAD, TL - Homozygote animal - non-carrier of the allele for BLAD, [7]DP - Heterozygote animal - carrier of the allele for DUMPS, TD - Homozygote animal - non-carrier of the allele for DUMPS. [8]CV - Animal - Heterozygote animal - carrier of the allele for CVM, TV - Homozygote animal - non-carrier of the allele for CVM. [9]Allele C - Associated to increased protein and fat milk content, Allele T - Associated to elevated weight gain.

Annex 2. Pedigree information of Girolando sires of the 2015 Report, ordered by general ranking classification.

| Rank | Group | Reg. | Sire | Father | Mother | Paternal Grandfather | Maternal Grandfather | Owner |
|---|---|---|---|---|---|---|---|---|
| **1** | 9 | 1154 5/8 | Jacuba Titânio Bem Feitor Celsius | 528 Etazon Celsius-ET | Jacuba I Novena I | How-El-Acres K Bellman-ET | Bem Feitor Raposo da Cal | Roberto Pimentel de Mesquita |
| **2** | 12 | 1487 | Thor FIV da Prata JAC | Jenny-Lou Marshall Toystory-ET | Harmonia Terra Vermelha | Mara-Thon BW Marshall-ET | C.A.Quero-Quero | José Antônio da Silva Clemente |
| **3** | 12 | 0990 | Curió FIV Paramount JGVA | Curio FIV Paramount JGVA | Flor Canvas Gap Paraiso | Delta Paramount | Delta Canvas | Geraldo Antônio de Paiva |
| **4** | 8 | 780 3/4 | Argeu Leduc Santa Luccia TE | Lystel Leduc-ET | Iracema LE | Juniper Rotate Jed-ET | Lonte Blackstar Jewel TL | CondominioJPZ Jorge Papazoglu e outro |
| **5** | 11 | 917 | Jacuba Prime Bem Feitor Lou* | Jenny-Lou Marshall Toystory-ET | Jacuba III Carina I | Mara-Thon BW Marshall-ET | Bem Feitor Raposo da Cal | Roberto Pimentel de Mesquita |
| **6** | 11 | 1413 | Limão TE JRS | Lexvold Luke Hershel-ET | Laranja Santa Luzia | Norrielake Cleitus Luke-TW | Caju de Brasilia | João Reis Soares |
| **7** | 6 | 945 5/8 | Turbante Touch das Arábias | Dinomi Melwood Touch TL | Maravilha das Arábias | Arlinda Melwood-ET | N/D* | Ricardo Miziara Jreige |
| **8** | 11 | 1400 | RBC Arquiteto | RBC Corisco | RBC Talentosa | C.A.Universo TE | Cedar-Creek Bergwil-ET | Roberto Antônio P. Melo carvalho |
| **9** | 10 | 806 3/4 | Luter King TE Terra Vermelha | Regancrest Elton Durham-ET | Quartinha Terra Vermelha | Emprise Bell Elton | Red-Fever Oakland-ET | Marta de Azevedo Bernardes |
| **10** | 11 | 960 3/4 | Torpedo Bolton Santa Luzia | Sandy-Valley Bolton-ET | Quartinha Terra Vermelha | Lexvold Luke Hershel-ET | Red Fever Oakland-ET | José Coelho Vitor |
| **11** | 11 | 1338 5/8 | Imperador FIV Ribeirão Grande | Sandy-Valley Bolton-ET | Laranja Santa Luzia | Lexvold Luke Hershel-ET | Caju de Brasília | João Reis Soares |
| **12** | 12 | 1021 | Charmoso Wildman Tannus | Ladys-Manor Wildman-ET | Alcachofra Mamj | Mara-Thon BW Marshall-ET | G.D.R.Canadian Star-TE | Délcio Vieira Tannus |
| **13** | 11 | 1313 | Sabiá IT | MR Motel-ET | Duda Kubera IT | Mara-Thon BW Marshall-ET | Castelo de Kubera | Itamir Faria Valle |
| **14** | 10 | 1293 5/8 | Jacuba Dark Bem Feitor Aaron | Dixie-Lee AARON-ET | Jacuba II Sara I 1/4 | Norrielake Cleitus Luke-TW | Benfeitor Raposo da Cal | Roberto Pimentel de Mesquita |
| **15** | 5 | 621 5/8 | Kaien Celsius Itaúna | 528 Etazon Celsius-ET | Emboaba Everest Itaúna | How-EL-Acres K Bellman-ET | C. A. Everest | Valério Machado Guimarães |
| **16** | 2 | 454 5/8 | Magical Mascot TE Rancho Alegre | S-Brook N-B Mascot-ET | Mágica Rancho Alegre | Whittier-Farms Ned Boy | Beguaba Gil | Hilton da Cunha Peixoto |
| **17** | 4 | 541 3/4 | MBF 0246 | Etazon Wallace | MBF Redação | Singing-Brook N-B Mascot-ET | Clover Mist Dandana-ET | Maria Dias Barretto Figueiredo |
| **18** | 6 | 931 5/8 | Lion Império Itaúna | Império Paviljon Itaúna | Gama TE Mason Itaúna | Etazon Paviljon | Shoremar Mason-ET | Valério Machado Guimarães |
| **19** | 11 | 1284 5/8 | Diplomata Roy Santa Luzia | Roylane Jordan-ET | Laranja Santa Luzia | Ked Juror-ET | Caju de Brasília | José Coelho Vitor |
| **20** | 5 | 580 3/4 | Aristóteles Grandslam TE Santa Luccia | J-L-G Grandslam-ET | Iracema LE | Exrango Thor | Lonte Blackstar Jewel | Jorge Papazoglu |
| **21** | 3 | 476 3/4 | Estand Luke HB | Norrielake Cleitus Luke | Chaleira HB | Bis-May Tradition Cleitus | N/D* | Hélcio Borges Barbosa |
| **22** | 1 | 300 3/4 | 110 Billy Fancy Paul Y | Utag Valiant Fancy Paul-ET | Panorama IY | SWD Valiant | N/D* | Renato da Cunha Oliveira |
| **23** | 9 | 855 3/4 | Garimpo Boss JGVA | Bosside Ruben-ET | Fineza Urânio JGVA | Ked Juror-ET | Uranio TE da Silvânia | José Geraldo Vaz Almeida |
| **24** | 10 | 1248 5/8 | Impacto FIV da Prata JAC | Clinita Zack Frederick-ET | Harmonia Terra Vermelha | Chance Southwind LB Zack-ET | C.A.Quero-Quero | José Antônio da Silva Clemente |
| **25** | 11 | 944 | Aristeu Billy Linda Santa Luccia | 110 Billy Fancy Paul Y | Linda do Spa | Utag Valiant Fancy Paul-ET | ND* | Condomínio JPZ - Jorge Papazoglu e outro |
| **26** | 11 | 0131 | Heros Florin Dom Nato | Florin Marker Dom Nato | Evelyn Magical Dom Nato | 528 Southland Marker-ET | Magical Mascot TE Rancho Alegre | José Donato Dias Filho |
| **27** | 5 | 734 5/8 | Cowboy Addison TE Rancho Alegre | Etazon Addison-ET | Mágica Rancho Alegre | Bis-May E-L Mountain-ET | Beguaba Gil | Hilton da Cunha Peixoto |
| **28** | 10 | 1294 5/8 | Cacique Índio Sertão | Índio Windstar Sertão | Madame Sertão | Dupasquier Windstar | Ipu Haley Birigitta Black ET | Nazareth Dias Pereira |
| **29** | 2 | 452 5/8 | Damião Bellwood 3E | Maizefield Bellwood | Maravilha 3E | Arlinda Melwood-ET | N/D* | Antônio de Souza Salgueiro |
| **30** | 7 | 1039 5/8 | Florin Marker Dom Nato | 528 Southland Marker-ET | Famosa Oliveira | Singing-Brook N-B Mascot-ET | N/D* | José Donato Dias Filho |
| **31** | 8 | 754 3/4 | Diamante Billy da Cacá | 110 Billy Fancy Paul Y | Lira Boagy da Caca | Utag Valiant Fancy Paul-ET | Sherryhill Cubby Boagy-ET | José Mascarenhas T.Jr/Cassio R.B.Paiva |
| **32** | 7 | 983 5/8 | Tango Storm Renascer | Mi-Bren Mathie Storm | Morena Renascer | Paradise-r Cleitus Mathie | N/D* | João Dário Ribeiro |
| **33** | 8 | 955 5/8 | Índio Windstar Sertão | Dupasquier Windstar | Angra Sertão | Duregal Astre Starbuck ET | N/D* | Nazareth Dias Pereira |
| **34** | 7 | 636 3/4 | RBC Redator | Regancrest RBK Die-hard-ET | RBC Paraninfa | Paradise-r Roebuck | N/D* | Roberto Antônio Pinto Melo de Carvalho |
| **35** | 9 | 973 5/8 | Ébano Gordon da Limeira | Dellka Juror Gordon | 2244 Matoso HG | Ked Juror-ET | Reinador da Epamig | José Márcio de Simone Silveira |
| **36** | 6 | 563 3/4 | Executivo Billy Beleza Y TE | 110 Billy Fancy Paul Y | Beleza Haden CF | Utag Valiant Fancy Paul-ET | N/D* | Renato da Cunha Oliveira |
| **37** | 9 | 0016 PS | Notebook das Três Passagens | Magical Mascot TE Rancho Alegre | Favela Feitiço das Três Passagens | Singing-Brookn-B Mascot – ET | Feitiço das Primaveras | Ricardo Catão Ribeiro |
| **38** | 7 | 880 5/8 | Átila Irã da Cacá | Irã Urutu do Morro | Andorinha Spacey da Cacá | Santa Cruz Urutu Relógio | N/D* | João Augusto Junqueira Reis |
| **39** | 8 | 684 5/8 | Nicolau Fausto Itaúna | Fausto Polo Itauna | Java Gaiato Itauna | B-Hiddenhills Mark-O-Polo TL | Gaiato Mason Itauna | Valério Machadoi Guimarães |
| **40** | 10 | 0030 PS | Baú das Arábias | Lutz Meadows Blackstar Miles | Gemada das Arábias | To-Mar Blackstar | N/D* | Ricardo Miziara Jreige |
| **41** | 10 | 0020 PS | Potter Kaien Itaúna | Kaien Celsius Itaúna | Gama TE Mason Itaúna | 528 Etazon Celsius-ET GM | Shoremar Mason-ET | Valério Machado Guimarães |
| **42** | 5 | 781 5/8 | Rincão Itaipu Y | Itaipu Nobre Y | Beleza Y | Nobre Fancy Paul Y | N/D* | Renato da Cunha Oliveira |
| **43** | 7 | 752 5/8 | Lama Preta Instrutor Cavalier | Ca-Lill Standout Cavalier | Fartura OG | Sunnyside Standout | Mongol da Pontal | Arpoador Agropecuária e Promoções Ltda. |
| **44** | 10 | 917 3/4 | Abdu Lord Lily Santa Luz | Etazon Lord Lily-ET | Independência Santa Luzia | To-Mar Blackstar-ET | N/D* | José Coelho Vitor |
| **45** | 8 | 1065 5/8 | Ocidente London do Morro | Londondale Lman Magnum-ET | Sevilha Ocidente do Morro | Rothrock Tradition Leadman | Ocidente | Olavo de Resende Barros Júnior |
| **46** | 6 | 928 5/8 | Soberano Adonias Santa Luccia | Adonias Progress Santa Luccia TE | Ametista Caju Santa Luccia TE | Duncan Progress-ET | Caju de Brasília | Jorge Papazoglu |
| **47** | 2 | 455 5/8 | Maguito Mascot TE Rancho Alegre | S-Brook N-B Mascot-ET | Mágica Rancho Alegre | Whittier-Farms Ned Boy | Beguaba Gil | Hilton da Cunha Peixoto |
| **48** | 9 | 1204 5/8 | Dillon Ito das Arábias | Barbee-M Juror Ito-ET | Semente das Arábias | Ked Juror-ET | Caju de Brasília | Maria Beatriz Costa Gomes |
| **49** | 9 | 1167 5/8 | Globo Billy JAC | 110 Billy Fancy Paul Y | Gemada Decal II JAC | Utag Valiant Fancy Paul-ET | Vir-Clar Enchantin Decal | Jair Alves Camargos/José Alves Camargos |
| **50** | 1 | 216 5/8 | Santa Cruz Zinabre Dynamic | Caernavon Rotate Dynamic | Relíquia Oásis Santa Cruz | Arlinda Rotate | Santa Cruz Oásis Hábil | José João Salgado dos Reis |

(to be continued...)

(continuation...)

| Rank | Group | Reg. | Sire | Father | Mother | Paternal Grandfather | Maternal Grandfather | Owner |
|---|---|---|---|---|---|---|---|---|
| **51** | 5 | 566 3/4 | Escote Royalist Curral Velho | Startmore Royalist-ET | Malvina Curral Velho | Madawaska Aerostar | N/D* | Renildo Neides Alves |
| **52** | 1 | 243 5/8 | Dileto Balthazar Sonho | Conductor Balthazar | Azurita FR | Wapa Arlina Conductor | N/D* | Mário Lúcio Barros Borges |
| **53** | 11 | 812 | Falcon Ribeirão Grande TE | Stouder Morty-ET | Laranja Santa Luzia | Shen-Val NV LM Formation-ET | Caju de Brasilia | Miller Cresta de Melo Silva |
| **54** | 4 | 639 5/8 | Brutus das Arábias | Santa Cruz Zinabre Dynamic | Bailarina das Arábias | Caernavon Rotate Dynamic | Peticote Boda-ET | Ricardo Miziara Jreige |
| **55** | 7 | 997 5/8 | Curimã III TE Alegre | Curimatã das Três Passagens | Arita Vertente | Twist Astronaut | Richlawn Simon Dustin | Nelson Ariza |
| **56** | 3 | 475 3/4 | Millenium Hortência Alf Boa Fé | Alvoor Elton Alf | Hortência Boa Fé | Emprise Bell Elton | N/D* | Agropecuária Boa Fé Ltda. |
| **57** | 4 | 500 3/4 | Chaplin Billy Fancy Paul Y | 110 Billy Fancy Paul Y | Cancela Y | Utag Valiant Fancy Paul-ET | SS Juazeiro Berlin | Renato da Cunha Oliveira |
| **58** | 1 | 350 5/8 | Doutor Bellringer Itaúna | Tiho Bellringer-ET | Mansinha Itaúna | Carlin-M Ivanhoe Bell | Santa Cruz Oriente Morcego | RYG Emp. Part. e Adm. S/A |
| **59** | 6 | 885 5/8 | Jaguar das Três Passagens | Famoso das Três Passagens | Gata das Três Passagens | Curimatã das Três Passagens | J-L-G Grandslam-ET | Carlos Eduardo Ferreira |
| **60** | 2 | 487 5/8 | Baco das Arábias | Lutz Meadows Blackstar Miles | Gemada das Arábias | To-Mar Blackstar | N/D* | Ricardo Miziara Jreige |
| **61** | 8 | 1066 5/8 | Milagre das Três Passagens | Imperio Paviljon Itauna | Goiabada das Três Passagens | Etazon Paviljon | Peticote Lance TL | Marco Paulo Lemos Ferreira |
| **62** | 3 | 667 5/8 | Zimbo das Arábias | Santa Cruz Zimbo Elevation | Bailarina das Arábias | Três Irmãos Elevation | Peticote Boda-ET | Ricardo Miziara Jreige |
| **63** | 11 | 0053 | Raro das Arábias | FEITICEIRO RIACHO DA SERRA | PRETA JEWEL DAS ARABIAS | KED JUROR-ET | LONTE BLACKSTAR JEWEL TL | MARIA BEATRIZ COSTA GOMES |
| **64** | 4 | 470 5/8 | Galã Fancy Paul Itaúna TE | Utag Valiant Fancy Paul-ET | Mansinha Itaúna | SWD Valiant | Santa Cruz Oriente Morcego | José Henrique Pastore |
| **65** | 4 | 717 5/8 | Fausto Polo Itaúna | B-Hiddenhills Mark-O-Polo | Bolacha Oásis Itaúna | Walkway Chief Mark | Santa Cruz Oásis Hábil | Valério Machado Guimarães |
| **66** | 5 | 657 5/8 | Feiticeiro Riacho da Serra | Ked Juror-ET | Cajuína Riacho da Serra | To-Mar Blackstar | N/D* | Álvaro Vasconcelos/Marcos Costa |
| **67** | 2 | 366 3/4 | Nautilus Bandit Rancharia | Hanoverhill Bandit-ET | Sapeca Astro M-4 | Rockalli Son of Bova | Capucho da Camig | Aldir Henrique Silva |
| **68** | 6 | 864 5/8 | Império das Três Passagens | Dedé Três Passagens | Cocaína Três Passagens | Twist Astronaut | Bis-May Tradition Cleitus | Carlos Eduardo Ferreira |
| **69** | 1 | 200 5/8 | Azoto da Ouro Verde | Caldas Supremo TE | Araponga da Ouro Verde | Pawnee Farm Arlinda Chief | N/D* | Francisco Geraldo Megale |
| **70** | 8 | 632 3/4 | Talento Millenium Boa Fé | Millenium Hortência Alf Boa Fé | Lancha Agrauna Booster Boa Fé | Alvoor Elton Alf | Fustead Tesk Booster-ET | Enos Toledo Yan Hsin Ma |
| **71** | 7 | 555 5/8 | Símbolo Swinger Cal | Delta Swinger-ET | Diadema Cal | 528 Etazon Celsius-ET | N/D* | Olavo de Resende Barros |
| **72** | 4 | 680 5/8 | Famoso das Três Passagens | Curimatã das Três Passagens | Capivara Três Passagens | Twist Astronaut | B-Hiddenhills Mark-O-Polo | Carlos Eduardo Ferreira |
| **73** | 1 | 215 5/8 | Santa Cruz Zape Elevation | Três Irmãos Elevation | Idade MEF Santa Cruz | Round Oak Rag Aple Elevation | Maravilha Expoente Faizão | José João Salgado dos Reis |
| **74** | 9 | 0014 PS | RBC Singelo | Curimatã Três Passagens | RBC Proveta | Curimatã das Três Passagens | Oitavo Retiro da Barra | Roberto Antônio P. Melo Carvalho |
| **75** | 2 | 312 3/4 | BR Granito Mandingo TE | Fisher Place Mandingo Twin | Fortaleza BR | SWD Valiant | N/D* | Bruno Regis Borges da Costa |
| **76** | 5 | 619 5/8 | Garboso Curimatã das Três Passagens | Curimatã das Três Passagens | Cereja das Três Passagens | Twist Astronaut | Lee-Gin Chris Bell | Bráulio Conti Júnior |
| **77** | 7 | 599 5/8 | Bátila Irã da Cacá | Irã Urutu do Morro | Andorinha Spacey da Cacá | Santa Cruz Urutu Relógio | N/D* | José Mascarenhas Torres Junior |
| **78** | 9 | 797 5/8 | Netuno Famoso Dona Beja | Famoso das Três Passagens | 363 Urik Vista Alegre | Curimatã das Três Passagens | Jatoba Urik Persistent Rima | Rubens Belchior da Cunha |
| **79** | 6 | 871 5/8 | Lama Preta Hércules Twist-TE | Twist Astronaut | Cocaína Três Passagens | Flamengo da GB | Bis-May Tradition Cleitus | Arpoador Agrop. Prom. Ltda. |
| **80** | 8 | 999 5/8 | Curimã I TE Alegre | Curimatã das Três Passagens | Arita Vertente | Twist Astronaut | Richlawn Simon Dustin | Nelson Ariza |
| **81** | 2 | 333 3/4 | Senador S.W.D. Santa Izabel | SWD Valiant | Miss da GB | Pawnee Farm Arlinda Chief | N/D* | José de Freitas Amaral |
| **82** | 10 | 0010 PS | Fergus TE Caxi Alegre | Caxi OG | Arita Vertente | Feitiço das Primaveras | Richlawn Simon Dustin | Nelson Ariza |
| **83** | 8 | 1075 5/8 | Vilão TE Alegre | Caxi OG | Ambição Lindy Reata | Feitiço das Primaveras | Mineirão Lindy Roma TE | Nelson Ariza |
| **84** | 3 | 345 5/8 | Caxi OG | Feitiço das Primaveras | Montanha da OG | Combo Criss | N/D* | Vilmar Pereira Pires |
| **85** | 2 | 410 5/8 | Curimatã das Três Passagens | Twist Astronaut | Belaíba Sonho | Flamengo da GB | GRF Máximo Twin Chief | Carlos Eduardo Ferreira |
| **86** | 9 | 0007 PS | Neon das Três Passagens | Famoso das Três Passagens | Jandira das Três Passagens | Curimatã das Três Passagens | Caxi OG | Olavo de Resende Barros Júnior |
| **87** | 3 | 604 5/8 | Império Paviljon Itaúna | Etazon Paviljon | Bolacha Oásis Itaúna | To-Mar Wister-ET | Santa Cruz Oásis Hábil | RYG Emp. Part. e Adm. S/A |
| **88** | 3 | 479 5/8 | Dedé Três Passagens | Twist Astronaut | Ativa das Três Passagens | Flamengo da GB | Mainsteam Hotshot | Carlos Eduardo Ferreira |

***N/D** - Not determined.

**Annex 3.** Girolando Breed Genetic Improvement Program Participating Herds.

| Owner | Farm | City | State |
|---|---|---|---|
| Albino Gomes de Oliveira | Colônia Santa Clara | Plácido de Castro | AC |
| Altair Ferreira dos Santos | Fazenda Bela Vista | Plácido de Castro | AC |
| Carletti Pereira Machado | Fazenda Novo Destino | Plácido de Castro | AC |
| Cloves Brasileiro Franco | Colônia São Pedro - AC | Plácido de Castro | AC |
| David Martins de Menezes | Água do Bugre | Plácido de Castro | AC |
| Divino Santos da Silva | Colônia Dois Irmãos | Plácido de Castro | AC |
| Elizeu Flaqueto Junior | Colônia Flaqueto Junior | Plácido de Castro | AC |
| João dos Santos da Silva | Fazenda São João | Plácido de Castro | AC |
| Jordão Ferreira da Silva | Fazenda Ouro Verde | Plácido de Castro | AC |
| Lindomar Silveira Borges | Colônias P1 e P2 | Plácido de Castro | AC |
| Mateus da Silva de Oliveira | Colônia Realeza | Plácido de Castro | AC |
| Paulo Roberto da Silva | São Paulo | Plácido de Castro | AC |
| Valmor Tonis Malfada | Colônia Águia Real | Plácido de Castro | AC |
| José Hildo Gonçalves Fernandes | Fazenda São José | Porto Acre | AC |
| Raimundo Nonato Nogueira | Rancho JL | Porto Acre | AC |
| Alexandre Vasconcelos de Araújo | Fazenda Boi Verde | Senador Guiomard | AC |
| Almir Neves de Morais Filho | Fazenda Boa Vista | Senador Guiomard | AC |
| Cosmoty Pascoal Nogueira | Fazenda São Francisco | Senador Guiomard | AC |
| José Augusto Martins de Araújo | Fazenda San Sebastian | Senador Guiomard | AC |
| Lauro Fontana | Fazenda Iquiri | Senador Guiomard | AC |
| Maria de Lourdes Andrade Ferreira | Fazenda Minas Gerais I | Senador Guiomard | AC |
| Inácio José de Araújo | Fazenda Água Boa | Xapuri | AC |
| José Sebastião Rodrigues | Fazenda Três Irmãos | Xapuri | AC |
| Álvaro José do Monte Vasconcelos | Fazenda Alto Verde | Maceió | AL |
| José Geraldo Vaz Almeida | Fazenda Belo Horizonte | Amargosa | BA |
| Bonanza Industria e Agrícola Ltda | Fazenda Bonanza | Cachoeira | BA |
| Antônio Carlos Guimarães Brandão | Fazenda Córrego Raso | Candeias | BA |
| Beiro Rio Agropecuária Ltda | Fazenda Beira Rio | Rafael Jambeiro | BA |
| Rodrigo Mota | Fazenda Mangueira | Apiacá | ES |
| Agnaldo Calinsliki | Sitio Silva | Barra de São Francisco | ES |
| Angelo André Bosi | Fazenda Dourada | Barra de São Francisco | ES |
| Celso Antonio Fagundes | Sitio Fagundes | Barra de São Francisco | ES |
| Devair da Silva Paiva | Sitio Paiva | Barra de São Francisco | ES |
| Jackson Martins Pereira | Fazenda Vovô Mel | Barra de São Francisco | ES |
| Joaquim Justino Sobrinho | Fazenda Santa Cruz | Barra de São Francisco | ES |
| Ataíde José Légora | Fazenda Pedra Branca | Cachoeiro do Itapemirim | ES |
| Adriano Garcia Mendes | Capel | Ecoporanga | ES |
| Alvaro Dal'Col | Sitio Três Irmãos | Ecoporanga | ES |
| Antonio Carlos de Siqueira | Fazenda São Paulo | Ecoporanga | ES |
| Antônio Rodrigues Lima | Fazenda Vista Alegre | Ecoporanga | ES |
| Devair Rodrigues Lima | Fazenda Córrego do Divino | Ecoporanga | ES |
| Djalma de Sá Oliveira Filho | Fazenda Cachoeira Comprida | Ecoporanga | ES |
| Edimar Monteiro de Barros | Fazenda Sayonara | Ecoporanga | ES |
| Elcio de Oliveira Alvim | Fazenda Naná | Ecoporanga | ES |
| Elson Ferreira Florentino | Sítio Água Boa | Ecoporanga | ES |
| Henrique Bianquini Junior | Fazenda Estrela | Ecoporanga | ES |
| José Carlos Tavares de Souza | Sítio do José Carlos | Ecoporanga | ES |
| José Laurindo Pimenta | Sitio Senhor do Bonfim | Ecoporanga | ES |
| Leandro Almeida Santos | Fazenda Palmeira | Ecoporanga | ES |
| Luiz Alves de Freitas Neto | Fazenda Vista Alegre | Ecoporanga | ES |
| Luiz Roberto Silva Machado | Fazenda Boa União | Ecoporanga | ES |
| Marcos Dal'Col | Fazenda Primavera | Ecoporanga | ES |
| Mario Dal'Col | Colibrí | Ecoporanga | ES |
| Sândalo Tavares Souza | Sitio do Sândalo | Ecoporanga | ES |
| Sebastião Vieira de Junqueira | Fazenda J. F. | Ecoporanga | ES |
| Delfino Vieira | Agropecuária Viva | Ibitirama | ES |
| Gilson Peixoto da Silva | Fazenda Água limpa | Ibitirama | ES |
| João Carlos Barreto | Fazendas Reunidas VB Ltda. | Mimoso do Sul | ES |
| Haroldo Carvalho  Fernandes | Fazenda Mato Grosso | São Pedro de Rati | ES |
| Hélvio Queiroz dos Santos | Fazenda Shangrilá | Abadia de Goiás | GO |
| Danilo Alves Ribeiro Paes Leme | Fazenda Ribeirão das Paulas | Cachoeira Alta | GO |
| Ediney Cabral Marques | Fazenda Soledade | Caçu | GO |
| Mauro Sebastião Guimarães | Fazenda Baú | Caçu | GO |
| Zilderlei Nunes Ferreira | Fazenda São José | Caçu | GO |
| Lucilla Campana Trevisolli | Fazenda Santa Rosa | Caçú | GO |

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| Owner | Farm | City | State |
|---|---|---|---|
| Rogério Trevisoli | Fazenda Paraiso do Rio Verde | Caçú | GO |
| Tiago Guimarães Assis | Fazenda Baú | Caçú | GO |
| Marcelo Rocha Ferreira | Caldas Novas | Caldas Novas | GO |
| Vanessa Silva Lobato Moura | Fazenda Vitória | Edeia | GO |
| Danillo Rafael Caixeta | Fazenda Boa Vista dos Pires | Ipameri | GO |
| Diego José Spirlandelli | Fazenda Nossa Senhora de Fátima | Ipameri | GO |
| Antônio Virgilio Faria | Fazenda Feleicidade | Itarumã | GO |
| Athos Marques Borges | Fazenda Ribeirão do Meio | Itarumã | GO |
| Danilo Fernandes Valle | Fazenda Cabrito | Itarumã | GO |
| Fagner Souza Ribeiro | Fazenda Barro Branco | Itarumã | Go |
| Itamir Faria Valle | Fazenda Serrinha I | Itarumã | GO |
| João Antônio Borges | Fazenda Ribeirão do Meio | Itarumã | GO |
| Josiel Gouveia de Paula | Sítio Estrela da Manhã | Itarumã | Go |
| Leandro Alves de Freitas | Fazenda Baú | Itarumã | GO |
| Luiz José Machado | Chacara Nova Esperança | Itarumã | GO |
| Marcos Gonçalves Rodrigues | Fazenda Terra Nova | Itarumã | Go |
| Murilo Freitas Lima | Fazenda São Pedro | Itarumã | GO |
| Nelson Borges de Freitas Junior | Fazenda Rio Solar | Itarumã | GO |
| Plinio Borges Assis | Fazenda Primavera | Itarumã | GO |
| Rubens Assis Freitas | Fazenda Barreiro | Itarumã | GO |
| Fernando Inácio Cardoso | Fazenda Ponte Alta | Jataí | GO |
| Geraldo José de C. Neto | Fazenda Lagoa | Jataí | GO |
| Hudson Alves Guimarães | Sítio São Judas Tadeu | Jataí | GO |
| João Vilson Damazio Silveira | Sítio São Francisco - Lote 124 | Jataí | GO |
| José Abadia da Silva | Sítio Divino Pai Eterno - Lote 42 | Jataí | GO |
| José Ronaldo Franco | Fazenda Boa Vista | Jataí | GO |
| Lázaro Henrique de Oliveira | Fazenda Santo Mé | Jataí | GO |
| Leandro Oliveira Silva | Fazenda Santo Mé | Jataí | GO |
| Leni Ferreira Carvalho Lima | Fazenda Boa Vista do Rio Claro | Jataí | GO |
| Marcos Vinicius Martins Oliveira | Sítio Meu Xodó | Jataí | GO |
| Paulo Fernando Zaiden Rezende | Fazenda Santa Lúcia Pombalinho | Jataí | GO |
| Sandro Borges Almeida | Fazenda Rio Verde | Jataí | GO |
| Sebastião Lucio do Prado | Sítio Nova Esperança - Lote 27 | Jataí | GO |
| Sergio Martins Castro | Sítio Manancial | Jataí | GO |
| Sidney Filizzola Borges | Fazenda Braz Filizzola | Jataí | GO |
| Univ. Federal de Goias | Fazenda Santa Rosa do Rochedo | Jataí | GO |
| Vilson Vilela de Assis | Fazenda Bom Jardim | Jataí | GO |
| João Domingos Gomes dos Santos | Fazenda São Domingos | Luziânia | GO |
| Henrique Alves Pires Franco | Fazenda Paraíso | Maripotaba | GO |
| José Renato Chiari | Fazenda São Caetano | Morrinhos | GO |
| Walter Alves de Queiroz | Fazenda Sabarú | Novo Gama | GO |
| Francisco Antonio Hudinik | Fazenda Campo Verde | Orizona | GO |
| José Correia Pereira | Fazenda Capão Comprido | Orizona | GO |
| João Lazaro Pereira | Fazenda Cachoeira | Ourizona | GO |
| Junior Brito | Fazenda São Carlos | Ouro Verde de Goiás | GO |
| Rúbio Fernal Ferreira e Sousa | Fazenda Salto | Padre Bernardo | GO |
| Aluísio Aguiar Pereira | Fazenda Bauzinho | Pires do Rio | GO |
| Carlos Lania de Araújo | Fazenda Rio Preto | Rio Verde | GO |
| Universidade de Rio Verde | Fazenda Fonte do Saber | Rio Verde | GO |
| Embrapa Arroz e Feijão | Núcleo Regional Arroz e Feijão | Santo Antônio de Goiás | GO |
| César Corrêa de Sousa | Fazenda Boa Vista | Abaeté | MG |
| Marco Antônio de Oliveira | São Sebastião da Morada | Abaeté | MG |
| Janilson Silva Sallum | Fazenda Buriti | Água Comprida | MG |
| Marcio Moraes Sampaio | Fazenda Morro Grande | Aiuruoca | MG |
| Rodrigo Bernardo Silva | Fazenda Taquara Preta | Aracitaba | MG |
| Pollyanna Marques Vieira | Fazenda Taioba | Araguari | MG |
| Carlos Roberto Borges | Chácara Santa Isabel | Araxá | MG |
| Clovis Antonio de Faria Sousa | Fazenda JL | Araxá | MG |
| Walter Machado Borges Neto | Fazenda 2 Irmãos | Araxá | MG |
| Adilson José do Couto | Fazenda São Domingos | Arcos | MG |
| André Luis de Oliveira | Fazenda Cristais | Arcos | MG |
| Anselmo Verçosa de Oliveira | Fazenda Vargem dos Servos | Arcos | MG |
| César Júnio de Faria Andrade | Fazenda Boa Vista | Arcos | MG |
| Deibson José Mendonça | Fazenda Varjao | Arcos | MG |
| Emanuel Alves do Couto | Fazenda Sobradinho/Capoeirão | Arcos | MG |

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| Owner | Farm | City | State |
|---|---|---|---|
| Fábio da Silva Rodrigues | Fazenda Boa Vista | Arcos | MG |
| Irineu Borges de Jesus | Faz Rio Preto | Arcos | MG |
| Jamil Veloso Borges | Faz Vargem Grande | Arcos | MG |
| José Francisco de Faria | Fazenda Capoeira do Café | Arcos | MG |
| Juarez Veloso Borges | Faz Vargem Grande | Arcos | MG |
| Leandro Geraldo Fonseca | Fazenda São Domingos dos Carneiros | Arcos | MG |
| Lécio Alves Veloso | Fazenda Reserva | Arcos | MG |
| Sebastião dos Reis Primo | Fazenda São Domingos | Arcos | MG |
| Centro Fed. de Educ. Tec. de Bambuí | Fazenda Varginha | Bambuí | MG |
| Luiz José Simon Vilella | Sítio Morro Redondo | Barão de Monte Alto | MG |
| Roberto Antônio Guimarães | Sítio Sapeca | Barão de Monte Alto | MG |
| Francisco Rangel de Queiroz | Fazenda San Francisco | Belo Horizonte | MG |
| Archimedes Machado Borges | Sítio Morro Redondo | Bias Fortes | MG |
| Antônio Olímpio Mendes de Souza | Fazenda Caiçara | Biquinhas | MG |
| Bruno Eduardo de Oliveira Menezes | Faz Vô Zico | Bom Despacho | MG |
| Emanuel Luiz | Faz Limeira | Bom Despacho | MG |
| Geraldo Magela de Araujo | Faz Cedro | Bom Despacho | MG |
| Leandro Machado da Silva | Fazenda Santa Rita | Bom Despacho | MG |
| Luiz Carlos Araujo Gontijo Junior | Faz Grota D`agua | Bom Despacho | MG |
| Luiz Henrique Teixeira Pereira Melo | Faz Guariba | Bom Despacho | MG |
| Pedro Ivo de Araujo | Faz Extrema | Bom Despacho | MG |
| Ricardo Cardoso Gontijo Silva | Fazenda Bom Sucesso | Bom Despacho | MG |
| Roberto Jose de Araujo | Faz Retirinho | Bom Despacho | MG |
| Thiago Luciano de Araujo | Faz Saco de Cipó | Bom Despacho | MG |
| Atailio Geovane dos Santos | Fazenda São Geraldo | Bom Sucesso | MG |
| Carlos Henrique Guimarães Lopes | Fazenda São Sebastião | Bom Sucesso | MG |
| Duílio Mata de Souza Lima | Fazenda Pedra do Urubú | Bom Sucesso | MG |
| Marco Túlio R. A. Castanheira | Fazenda Bocaina | Bom Sucesso | MG |
| Arlindo José dos Santos | Sítio Mariana | C. do Brumado | MG |
| Luiz Antônio Franco | Fazenda Borda do Mato | Campestre | MG |
| Udelson Nunes Franco | Fazenda Angico | Campina Verde | MG |
| Adão José de Assunção | Fazenda Boa Esperança | Campo Florido | MG |
| Márcio Gleik Garcia Borges | Fazenda Sta Teresinha | Campo Florido | MG |
| Marilza Ribeiro de Sousa Castro | Fazenda Santo Inácio I | Campo Florido | MG |
| Olavo Gonçalves | Fazenda Santo Inácio | Campo Florido | MG |
| Reinildo Antônio da Silva | Sítio Três Lagoas | Campo Florido | MG |
| Silvio Feliciano | Fazenda Sta Teresinha | Campo Florido | MG |
| Jair Faria Paiva Filho | Fazenda do Café | Carandaí | MG |
| Adriano Francisco de Castro | Fazenda Fortaleza/Forquilha | Carmo da Mata | MG |
| Almir Resende Júnior | Fazenda Gameleira | Carmo da Mata | MG |
| Antonio Afonso Rodrigues | Sítio Forquilha/Morro das Pedras | Carmo da Mata | MG |
| Cesar Almeida | Fazenda Rancho do Fundo | Carmo da Mata | MG |
| Denilson Donizete Ribeiro | Fazenda Ponte Alta/Fortaleza | Carmo da Mata | MG |
| Evaldo Teodoro Pinto | Fazenda Folha Larga | Carmo da Mata | MG |
| Fernando Correa Ribeiro | Fazenda Lajinha | Carmo da Mata | MG |
| Francisco Marques Neto | Sítio São Sebastião | Carmo da Mata | MG |
| Luis Carlos Lobato | Fazenda dos Ipês | Carmo da Mata | MG |
| Sebastião Ribeiro Filho | Fazenda Ponte Alta/Fortaleza | Carmo da Mata | MG |
| Sindicato dos Produtores Rurais de Carmo da Mata | Diversas | Carmo da Mata | MG |
| Iranildo Antunes Clemente | Fazenda São Clemente | Carmo do Cajuru | MG |
| Mário Antônio Porto Fonseca | Sítio do Cedro | Carmo do Paranaíba | MG |
| Sirio José de Oliveira | Fazenda Campinhos | Carmo do Paranaíba | MG |
| Carlos Magno Varginha dos Reis | Fazenda Boa Vista | Carvalhos | MG |
| Fabio Campos | Faz Cantaduvas | Carvalhos | MG |
| Valter Moreira Campos | Fazenda Oliveira | Carvalhos | MG |
| Antônio Aparecido Arantes | Fazenda Guanabara | Cássia | MG |
| Jaime Rossato | Fazenda Bonfim | Cássia | MG |
| Manoel Teixeira Pires | Fazenda Santa Tereza | Cássia | MG |
| Ricardo Mendes Geraldo | Fazenda Santa Inês | Cássia | MG |
| Roberto Antônio Pinto de Melo Carvalho | Fazenda Retiro da Barra | Cássia | MG |
| Samira Pinto Fernandes | Fazenda Formiga | Cássia | MG |
| Gilberto Natal Delfino | Fazenda Retiro da Ponte | Cássia | MG |
| Robson Silveira Garcia Filho | Fazenda Araponga | Cássia | MG |
| Fabricio Eduardo Oliveira Silva | Fazenda São Mateus | Comendador Gomes | MG |
| Raphael Ferreira Barcelos | Fazenda São Mateus | Comendador Gomes | MG |

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| Owner | Farm | City | State |
|---|---|---|---|
| Luciano Sene Sousa | Fazenda Boa Vista | Conceição das Alagoas | MG |
| Márcio Rodrigues Rocha | Fazenda Boa Vista | Conceição das Alagoas | MG |
| Agropecuária Boa Fé Ltda | Fazenda Boa Fé | Conquista | MG |
| Luiz Carlos Rodrigues | Fazenda Nova Terra | Conquista | MG |
| Vilson Vieira Borges | Sócio Fazenda Buriti | Coromandel | MG |
| Carlos Eduardo Vieira de Carvalho | Fazenda Paraíso | Corrego Danta | MG |
| Daniel Elias de Matos | Fazenda Tetais | Corrego Danta | MG |
| Edgar de Souza Bento | Fazenda Agua Benta | Corrego Danta | MG |
| Elias Pereira Chaves | Fazenda Tetais | Corrego Danta | MG |
| Geraldo Anselmo Salgado Pereira | Sitio da Cotia | Corrego Danta | MG |
| Geraldo Elias de Matos | Fazenda Tetais II | Corrego Danta | MG |
| Gerson Antônio Pereira | Fazenda Vereda | Corrego Danta | MG |
| João Batista da Cruz | Fazenda Tetais | Corrego Danta | MG |
| João Silverio dos Santos | Fazenda Limoeiro | Corrego Danta | MG |
| José Maria de Oliveira | Fazenda Corrego Danta | Corrego Danta | MG |
| José Maria Marcilino | Fazenda Jatobá | Corrego Danta | MG |
| José Rosa Primo | Fazenda Vereda | Corrego Danta | MG |
| Vicente Vitorio de Fátima Mesquita | Fazenda Vereda | Corrego Danta | MG |
| Leonardo Alvarenga Diniz | Sítio São Camilo (Ipê) | Cruzília | MG |
| Luiz Gualberto Ribeiro Ferreira | Fazenda Nossa Sra de Fátima | Delta | MG |
| Newton Pereira Portes | Fazenda Boa Sorte | Divino | MG |
| Gersoney Ruela de Oliveira | Fazenda Recanto | Divino das Laranjeiras | MG |
| João Teodoro Sobrinho | Sítio das Flores | Divino das Laranjeiras | MG |
| André Costa Gaspar | Fazenda Boa Esperança | Doresópolis | MG |
| Antônio Luiz Landert | Sitio Sertãozinho | Estiva | MG |
| Donizete Felipe Justino | Sitio São José - Pântano das Rosas | Estiva | MG |
| Fernando Xavier Pereira | Fazenda São João/Ribeirão das Pedras | Estiva | MG |
| Jesus Santos Pereira | Sitio da Toca | Estiva | MG |
| José Ailton de Andrade | Fazenda Ribeirão de Estiva | Estiva | MG |
| Romildo Aparecido Alvarenga | Sitio São Jorge - Itaim | Estiva | MG |
| Dirceu Peres Cabral | Fazenda Iracema | Estrela D'alva | MG |
| José Gomes de Oliveira | Sitio São José | Extrema | MG |
| Luiz carlos Guarlideli | Sitio São Carlos | Extrema | MG |
| Mário Aparecido de Almeida | Sítio Minha Esperança | Extrema | MG |
| Central de Ensino e Desenvolvimento Agrário de Florestal | Escola Fazenda | Florestal | MG |
| Bráz Donizete Gonzaga | Fazenda Boa Esperança | Formiga | MG |
| Fábio Henrique da Silva | Fazenda Barreira | Formiga | MG |
| Geraldo Gonçalves Pinheiro | Fazenda Garcias - Gonçalves | Formiga | MG |
| Gercina Lima Borges | Fazenda Limeira | Formiga | MG |
| Gilson Modesto de Souza | Fazenda Mamona | Formiga | MG |
| José Geraldo da Silva | Fazenda Albertos | Formiga | MG |
| Lailton Antônio de Castro | Sítio Beira Córrego | Formiga | MG |
| Liege de Sá Ribeiro | Fazenda Morro Cavado | Formiga | MG |
| Luis Augusto Goncalves do Couto | Faz Garcias | Formiga | MG |
| Marcelo da Cunha Ferreira | Fazenda Baiões de Baixo | Formiga | MG |
| Osmar Gonçalves do Couto | Fazenda Gonçalves | Formiga | MG |
| Pedro Fernandes Lima | Faz Facão | Formiga | MG |
| Waldemar José Borges | Fazenda Baiões | Formiga | MG |
| Waldemar José Borges | Fazenda do Alto | Formiga | MG |
| Wellington Antônio Pinheiro | Fazenda Pinheiros | Formiga | MG |
| Hermelano Antônio de Sousa | Fazenda Recanto das Palmeiras | Fronteira | MG |
| Daniel Catuta de Rezende Ferreira | Fazenda Buritizal | Frutal | MG |
| Fabiano Rodrigues Lopes | Fazenda Mato Preto | Frutal | MG |
| Auta Elisabeth Baesso Pereira | Sitio Grota da Nascente | Guarani | MG |
| Jose Marcio Casarin Henriques | Agrop. Novo Horizonte | Guarani | MG |
| Marcio Luiz Mendonça Alvim | Monte Alverne | Guarani | MG |
| Waldir Toledo Furtado | Fazenda Boa Vista da Estiva | Guarani | MG |
| Paulo Henrique Alves de Souza | Fazenda Sitio Velho | Ibia | MG |
| Alonso José de Resende Júnior | Fazenda Bananal | Ibiá | MG |
| Gustavo Frederico Burger Aguiar | Fazenda Congonhas | Ibiá | MG |
| Heli Alves Junior | Fazenda Retiro Velho | Ibiá | MG |
| João Miareli | Fazenda Bethania | Ibiraci | MG |
| José Carlos/Wellington Guerreiro | Fazenda Nova Era | Ibirací | MG |
| Marcileino Andrade Martins | Fazenda Patrimônio | Igaratinga | MG |
| Luciano Teixeira de Melo | Fazenda do Curtume | Inhaúma | MG |

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| Owner | Farm | City | State |
|---|---|---|---|
| Antônio Carlos Rodrigues de Paula | Fazenda Limoeiro | Ipanema | MG |
| Pedro Alves Rodrigues Neto | Fazenda Figueira | Ipanema | MG |
| Vanone Luiz Andrade | Fazenda São Mateus | Itapagipe | MG |
| Gleidison Antonio Lopes | Faz Barreiro | Itapecirica | MG |
| Pedro Henrique Correa Siqueira | Faz Três Lagoas | Itapecirica | MG |
| Ronaldo Silva | Faz Candonga | Itapecirica | MG |
| Valério Machado Guimarães | Fazenda Engenho | Itaúna | MG |
| Jair/José Alves Camargos | Fazenda Córrego do Açude | Ituiutaba | MG |
| José Jacinto Júnior | Fazenda Felicidade | Ituiutaba | MG |
| Marcus Novais Costa | Fazenda Olhos Dágua | Ituiutaba | MG |
| Sergio Divino Marques | Fazenda Maiara | Ituiutaba | MG |
| Alexandre Lopes Lacerda | Fazenda Miraí | Jaboticatubas | MG |
| Ademir Faustino | Sitio Piau | Jacuí | MG |
| Antônio Carlos de Souza | Fazenda Perobas | Jacuí | MG |
| Antônio Francisco Militão | Fazenda Sítio | Jacuí | MG |
| Danilo Silveira Prates | Sítio Santana | Jacuí | MG |
| Dener Santos Laversa | Sítio Córrego Rico | Jacuí | MG |
| Edson Arantes Prates | São José | Jacuí | MG |
| Edson Ribeiro | Fazenda São José | Jacuí | MG |
| Guaraci Barbosa da Silva | Sítio Piau de Baixo | Jacuí | MG |
| Joaquim Paulino Torres | Sítio Piau de Baixo | Jacuí | MG |
| José Ferreira | Fazenda Sete Córrego - Piau de Baixo | Jacuí | MG |
| José Teixeira Ribeiro | Sítio Boa Vista | Jacuí | MG |
| Roberto Carlos da Silva | Sítio Piau de Baixo | Jacuí | MG |
| Moacir Pereira Lima Júnior | Rancho Indaiá | Lajinha | MG |
| Júlio César Brescia Murta | Estância Leblou | Leandro Ferreira | MG |
| João Dário Ribeiro | Fazenda Estiva/Renascer | Luz | MG |
| Francisco Danilo Araújo Mendes | Sítio Pasto da Olaria do Açude | Madre de Deus | MG |
| José Antônio Pena | Fazenda Recanto do Coqueiro | Manhuaçu | MG |
| Marcio Jose Caldeira Rodes | Fazenda Nossa Senhora Das Graças | Manhuaçu | MG |
| Eberton de Souza Lima | Sítio Monte Alverne | Manhuaçú | MG |
| José Carlos da Costa | Fazenda Shalom | Manhuaçú | MG |
| Carlos Alberto da Silva Barros | Sítio Rochedo e Duas Pedras | Mariana | MG |
| Dallyson Leandro Prado | Sítio Gerônimo | Mariana | MG |
| Daniely Cristina Souza Alves | Fazenda Gualacho | Mariana | MG |
| Fernando Geraldo de Castro Machado | Sítio Moreira | Mariana | MG |
| Geraldo Pimenta Pedroza | Vale Verde | Mariana | MG |
| José Antunes da Vieira | Fazenda Braúnas | Mariana | MG |
| José Pereira de Melo | Fazenda Goiabeiras | Mariana | MG |
| Luiz Eduardo Vianna Ribeiro | Fazenda Água Limpa | Mariana | MG |
| Paulo Cesar Gonçalves de Carvalho | Sítio Miranda | Mariana | MG |
| Tofir José Espiridião Haim | Fazenda Goiabeiras | Mariana | MG |
| Cristiano Alexandre Machado | Sítio Serra do Coco | Mariana | MG |
| Múcio de Freitas Gonçalves | Fazenda Campo Alegre | Matinho Campos | MG |
| Ari Ferreira | Fazenda Bebedouro | Matutina | MG |
| Espólio Fernando Barros de Carvalho | Fazenda Alegria | Miradouro | MG |
| José Eustáquio Mendonça de Castro | Fazenda São Judas Tadeu | Moeda | MG |
| Jorge Diniz Neto | Fazenda Brachiaria | Monjolos | MG |
| Daniel da Silva | Fazenda Valinhos | Monte Alegre de Minas | MG |
| Claiton Luiz de Lima | Estância ML | Monte Carmelo | MG |
| Kasib Alves | Fazenda Penedo | Monte Carmelo | MG |
| Márcio Antônio de Moraes | Fazenda Lambari | Monte Carmelo | MG |
| Pedro Paulo Marques | Fazenda Pirapetinga | Monte Carmelo | MG |
| Rodrigo Naves Mundim | Fazenda Máximos | Monte Carmelo | MG |
| Silvestre Rodrigues do Amaral | Fazenda Paraíso | Monte Carmelo | MG |
| Ubirajara Alves de Brito | Fazenda Penedo | Monte Carmelo | MG |
| José Giolo Neto | Sitio Flamboyant | Monte Sto de Minas | MG |
| Diogo Souza dos Santos | Fazenda São Vicente | Morada Horta | MG |
| Evaristo Ernesto Pereira de Carvalho Neto | Fazenda Boa Sorte | Muriaé | MG |
| Júlio Maria Costa Francisco | Fazenda Campo Formoso | Muriaé | MG |
| Sônia Schueler de Aquino | Fazenda Gameleira | Muriaé | MG |
| Nacib Saib Abi Habib | Fazenda Monte Libano | Mutum | MG |
| Humberto Naves | Fazenda Varginha | Nova Ponte | MG |
| Afonso Inácio Dias | Fazenda Recreio | Novo Cruzeiro | MG |
| Antônio Marcos Soares Lima | Fazenda Aliança | Novo Cruzeiro | MG |

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| Owner | Farm | City | State |
|---|---|---|---|
| Héber dos Santos Barcellos | Fazenda Saudade | Novo Cruzeiro | MG |
| João Luiz Mozzer | Fazenda Liberdade | Novo Cruzeiro | MG |
| José Oelson Alves Faria | Fazenda Triângulo | Novo Cruzeiro | MG |
| Laudiomar Pinheiro de Macedo | Fazenda Espírito Santo | Novo Cruzeiro | MG |
| Marino de Fátima Pereira | Fazenda Triângulo | Novo Cruzeiro | MG |
| Olegário Francisco de Assis | Fazenda Recreio | Novo Cruzeiro | MG |
| Weliton Antonio da Silva | Fazendinha Gravatá | Novo Cruzeiro | MG |
| Constantino Colhado Stacanelli | Sitio do tante | Oliveira | MG |
| Emater Oliveira- Evandro | Faz Diversas | Oliveira | MG |
| José Benedito da Silva | Sítio Santa Rita | Oliveira | MG |
| José Lázaro Pinheiro Silveira | Sítio Curral Velho | Oliveira | MG |
| Lamarque Luis de Lisboa | Sitio Rosa Vermelha | Oliveira | MG |
| Marcio Eugenio Leite de Castro | Fazenda Rancho da Paz | Oliveira | MG |
| Olavo de Resende Barros Júnior | Fazenda Morro da Mandioca | Oliveira | MG |
| Renato Ferreira de Resende | Fazenda Cachoeira | Oliveira | MG |
| Rodolfo Cézar de Paulo Barezani | Fazenda da Lagoa | Oliveira | MG |
| Siridião Sérgio Leão Silveira | Sítio Calderão | Oliveira | MG |
| Osvane Homem de Faria | Fazenda Taquara Preta | Paiva | MG |
| Antônio Carlos Mariano de Almeida | Fazenda Vereda do Galo | Paracatu | MG |
| Fabricio Siqueira | Fazenda Capão das Orfãs | Paracatu | MG |
| Luciano Oliveira Campos | Fazenda Monjolos | Paracatu | MG |
| Luis Antônio de Oliveira Campos | Fazenda Pereirinha | Paracatu | MG |
| Marcio Areda Vasconcelos | Fazenda Santa Lucia | Paracatu | MG |
| Marcos Pereira Camargos | Fazenda São José | Paracatu | MG |
| Osvaldo Luiz Xavier | Fazenda Manoel Joaquim | Paracatu | MG |
| José Ricardo Monteiro Rocha | Haras Ponta Negra | Paraopeba | MG |
| Orlando Vaz | Fazenda Santa Izabel | Paraopeba | MG |
| José Coelho Victor | Fazenda Santa Luzia | Passos | MG |
| José Roberto Bernardes | Fazenda Marinheiro | Passos | MG |
| Ricardo Rezende Barbosa | Fazenda Primavera | Pequi | MG |
| Amair Freire de Carvalho | Fazenda Cristal Branco | Perdões | MG |
| Juliano Naves Cardoso | Fazenda Engenho | Perdões | MG |
| Luiz Carlos Tostes Pinto | Fazenda do Serrote | Piau | MG |
| Adolfo José Leite Nunes | Fazenda Santa Rita da Boa Vista | Piranga | MG |
| Maria Abadia Ferreira da Silva | Fazenda Sto Inácio | Planura | MG |
| Eire Enio de Freitas | Fazenda Medalha Milagrosa | Prata | MG |
| Felipe Vilela Andrade | Fazenda Sobradinho Douradinho | Prata | MG |
| Fernando Luiz Brant de Carvalho | Fazenda Lagoa Dourada | Prata | MG |
| Paulo Luiz Brant de Carvalho | Fazenda Esperança | Prata | MG |
| Elias Emerick | Sítio Barra do Jequitibá | Reduto | MG |
| Vinicius Júnior Thasmo | Fazenda Poço Fundo | Reduto | MG |
| Evaldo Gonçalves da Silva | Fazenda Nossa Senhora Aparecida | Resende Costa | MG |
| Instituto Federal Sudeste MG - Campus Rio Pomba | Instituto Federal Sudeste MG - Campus Rio Pomba | Rio Pomba | MG |
| José da Silva Ferras Filho | Fazenda Bom Retiro | Rio Preto | MG |
| Afonso Celso de Resende | Fazenda Segredo | Ritápolis | MG |
| Luiz Fernando reis | Fazenda da Fulôre | Ritápolis | MG |
| Márcio Godinho de Souza | Sítio Recanto Feliz | Roseiral | MG |
| Jose Nazareno de Pinho | Sitio Voswaldo | Sabinopolis | MG |
| Tiago Soares Mortimer | Faz São Joao de Guanhaes | Sabinopolis | MG |
| Antônio Carlos Mourão | Fazenda Cantagalo | Sabinópolis | MG |
| Deobaldino Marques de Pinho | Fazenda São José | Sabinópolis | MG |
| José Maria Nogueira | Fazenda Almeidas | Sabinópolis | MG |
| Ronaldo Pereira Ferreira | Fazenda Lageado | Sabinópolis | MG |
| Cedro Agronegócios Ltda | Fazenda Varginha | Sacramento | MG |
| Francisco Henrique Duque Machado | Fazenda São Miguel | Santa Bárbara do Monte Verde | MG |
| Valmir Costa | Sítio Carolina | Santa Bárbara do Monte Verde | MG |
| Adolfo Espíndula Filho | Fazenda Veados | Santa Juliana | MG |
| Roberto Patrão Ribeiro | Fazenda Boiadeira | Santa Vitória | MG |
| Andreia de Freitas Brito | Fazenda Bela Fama | Santana do Manhuaçu | MG |
| Marcos Vargas Diniz | Fazenda 2 Irmãos | Santana do Manhuaçu | MG |
| Odilio de Souza Pereira | Fazenda OS | Santana do Manhuaçu | MG |
| Clovis de Andrade Junior | Santa Terezinha Agropecuaria Ltda | Santo Antonio do Monte | MG |
| Alex Lima Alves | Fazenda Santa Helena | Santo Antônio do Monte | MG |
| Alexandre Antônio Veloso | Fazenda Moranguinho | Santo Antônio do Monte | MG |
| Elton Júnior Lacerda | Fazenda Esperança | Santo Antônio do Monte | MG |

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| Owner | Farm | City | State |
|---|---|---|---|
| Jesus da Silva Limirio | Fazenda Cachoeira Bonita | Santo Antônio do Monte | MG |
| José Júnior Santos | Fazenda Cachoeira do Diamante | Santo Antônio do Monte | MG |
| Neiro Antonio Veloso | Fazenda Corrego Alheio | Santo Antônio do Monte | MG |
| Luiz Eugênio Resende | Fazenda Prudenciana | São Gotardo | MG |
| Osanan Pereira Caixeta | Fazenda Pedacinho do Céu | São Gotardo | MG |
| Antero Araújo Ferreira Vasconcelos | Fazenda Araras | São Pedro do Suaçuí | MG |
| Antônio Adilson Vilarino Leal | Fazenda Capão | São Pedro do Suaçuí | MG |
| Gilberto Alves | Fazenda Dallas | São Pedro do Suaçuí | MG |
| Gilberto Alves | Fazenda Dallas | São Pedro do Suaçuí | MG |
| Rui Coelho Vieira | Fazenda Ponches | São Pedro do Suaçuí | MG |
| Adalton Luis Ferreira | Fazenda Nossa Senhora Aparecida | São Roque de Minas | MG |
| Silas Messias de Melo | Fazenda Paiol Queimado | São Roque de Minas | MG |
| Marystela Martins Resende | Fazenda São Sebastião | São Tiago | MG |
| Everton Nascimento São Julião | Fazenda Coqueiros | São Tomas de Aquino | MG |
| Roberto Campos Meirelles | Fazenda Engenho de Serra | São Vicente de Minas | MG |
| João Batista Araujo de Sousa | Fazenda Barreiro Alto | Sete Lagoas | MG |
| Luis Filipe Bastos Oliveira | Fazenda Boa Vista | Simonésia | MG |
| Anezio Luiz Assunção e Souza | Fazenda Capão Escuro | Tapira | MG |
| Elio Renê Borges | Fazenda Forquilha | Tapira | MG |
| José Vicente Nunes | Fazenda Furquilha | Tapira | MG |
| Otávio Luiz de Carvalho Souza | Fazenda Campo Alegre | Tapira | MG |
| Paulo Cesar Guimaraes | Fazenda Campo Alegre | Tapira | MG |
| Selmo Antônio das Neves | Fazenda Forquilha | Tapira | MG |
| DF Agrop. Faria Lemos-Tombos Ltda | Fazenda Cascata | Tombos | MG |
| José Luiz Teixeira | Fazenda 4 de Novembro | Tumiritinga | MG |
| Ana Lucia Nogueira Borges | Fazenda Matinha | Uberaba | MG |
| Ana Lúcia Nogueira Borges | Fazenda Matinha | Uberaba | MG |
| Centro Fed. de Educ. Tec. de Uberaba (IFTM Campus Uberaba) | Fazenda Santa Rosa | Uberaba | MG |
| Dalton da Paixão Sousa | Sítio Sapecado | Uberaba | MG |
| Fundagri-Fund. Des. C. Agrárias | Fazenda Escola | Uberaba | MG |
| Guilherme Marquez de Rezende | Fazenda Palo Alto da Sta Gertrudis | Uberaba | MG |
| João Jesus da Cunha | Fazenda Serra Morena | Uberaba | MG |
| Júlio A Moura Neto | Território Rural | Uberaba | MG |
| Maria Inez Cruvinel Rezende | Fazenda Cedro do Campo | Uberaba | MG |
| Marilda Oliveira Lopes | Fazenda Paraiso | Uberaba | MG |
| Nilton Cezar Barcelos | Fazenda Velha de Baixo | Uberaba | MG |
| Rogério Carneiro da Silva | Fazenda Cruzeiro do Sul | Uberaba | MG |
| Rogério José Cerqueira | Fazenda Carrossel | Uberaba | MG |
| Adão Francisco dos Santos | Sitio Nova Aurora | Uberlandia | MG |
| Délcio Vieira Tannus | Fazenda dos Machados | Uberlandia | MG |
| Jerônimo Gomes Ferreira | Fazenda Morada Corinthiana | Uberlândia | MG |
| José Antônio da Silveira | Xapetuba Agropecuária | Uberlândia | MG |
| Tales Humberto Alves Macedo | Fazenda Santa Terezinha | Uberlândia | MG |
| José Roberto de Lacerda | Fazenda Estância JR | Veríssimo | MG |
| Clayvert S. Abreu | Fazenda Nova Esperança | Volta Grande | MG |
| José Rogério Reis Junqueira | Fazenda Pedra Branca | Volta Grande | MG |
| Márcio Moraes | Fazenda Santa Rita | Volta Grande | MG |
| Rodrigo Reis Ferraz | Fazenda São Francisco | Volta Grande | MG |
| Vinícius Furtado Coutinho | Sítio VG | Volta Grande | MG |
| Deair Maria Rezende Marques de Souza | Fazenda São José - Parte A | Aquidauana | MS |
| Fundação Universidade Estadual de Mato Grosso do Sul (UEMS) | Fazenda Cera | Aquidauana | MS |
| Antônio de Souza Salgueiro | Fazenda Fazendão | Campo Grande | MS |
| Flávio Eduardo Buainain | Fazenda Vista Alegre | Campo Grande | MS |
| GPL - Grupo Produtores de Leite | Taila Guzela da Cunha | Campo Grande | MS |
| Rodipa Agropecuária Ltda | Reinaldo Vilela de Moura Leite | Campo Grande | MS |
| Ronan Rinaldi de Souza Salgueiro | Fazenda Fazendão | Campo Grande | MS |
| Rubens Belchior da Cunha | Fazenda São Marcos | Campo Grande | MS |
| Clovis Henrique Feltran | Fazenda Boa Esperança | Corguinho | MS |
| Queijaria São Marcos Ltda | Fazenda São Marcos | Costa Rica | MS |
| Marcelo Batista Angelino | Fazenda do Marcelo | Coxim | MS |
| Marjorie Gonçalves de Souza Comparim | Fazenda São João Batista | Dois Irmãos do Buriti | MS |
| Aurora Trefzger Cinato Real | Vale da Rondinela | Jaraguari | MS |
| Renato Prado Medrado | Estancia Paraíso | Jaraguari | MS |
| Luiz Roberto Rodrigues | Fazenda Kikinando | Nova Andradina | MS |
| Geraldo de Carvalho Borges | Fazenda Paraíso | Paracatu | MS |

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| Owner | Farm | City | State |
|---|---|---|---|
| Semy Alves Ferraz | Estância Buriti | Paranaiba | MS |
| Milton Carlos Porto | Fazenda São Luiz | Paranaíba | MS |
| Carlos Jacob Wallauer | Fazenda Belas Artes | Rio Brilhante | MS |
| Adão Paes Sandin | Fazenda Agua Limpa | Terenos | MS |
| Denílson Lima de Souza | Fazenda Cachoeirinha | Terenos | MS |
| Jesulino dos Santos Cerqueira | Estância Marca Sol | Caceres | MT |
| Carlos Antônio Procópio | Sítio Pingo de Mel | Castanheira | MT |
| Cesar de Almeida Alves | Sítio Santa Lucia | Castanheira | MT |
| Jovenal Vieira da Silva | Fazenda Estância Grasiela | Castanheira | MT |
| Mario ramos | Sítio 3 Irmãos | Castanheira | MT |
| Nelson Wagner Vargens | Sitio Tigre | Castanheira | MT |
| Roberto Vargem Tigre | Sítio Três Corações | Castanheira | MT |
| Ronilton de O. Rios | Fazenda Piracicabana | Castanheira | MT |
| Alécio Gonçalves Rios | Fazenda Toca da Onça | Castanheira | MT |
| Amilton José de Santana | Sítio Baixão Verde | Castanheira | MT |
| Eustáquio Rangel Procópio | Chácara Santa Luzia | Castanheira | MT |
| Kleber Leitner Paz Tabata | Sítio Asa Branca | Castanheira | MT |
| Regio Brasileiro Rios Junior | Sítio Redal | Castanheira | MT |
| Ricardo Vargens Rios | Fazenda Mulungu | Castanheira | MT |
| Aguinaldo Manhezzo Junior | Fazenda Dona Zita | Cláudia | MT |
| José Caetano Amaral | Sítio Amaral | Cláudia | MT |
| Airton Pereira | Sitio Santa Inês | Guarantã do Norte | MT |
| Alisson Salathiel Kalinke | Sítio Ouro Branco | Guarantã do Norte | MT |
| Antonio Cesar Pelho Vale | Sitio Três Irmãos | Guarantã do Norte | MT |
| Cesar Augusto Junqueira Valle | Fazenda Recanto do Valle | Guarantã do Norte | MT |
| Edmar Sehn | Sitio Planalto | Guarantã do Norte | MT |
| Fabio Andre Fogaça dos Santos | Estancia Vale da Serra | Guarantã do Norte | MT |
| Geraldo Pereira de Souza | Sítio Água Boa | Guarantã do Norte | MT |
| João Arleni Shuatz | Sítio Alto da Serra | Guarantã do Norte | MT |
| João José Rodrigues | Sitio Sonho de Criança | Guarantã do Norte | MT |
| João Mendonça | Sitio Salem | Guarantã do Norte | MT |
| Lutero Siqueira da Silva | Sitio Por do Sol | Guarantã do Norte | MT |
| Maria de Fátima Lima Leite | Chácara A Glória do Campo | Guarantã do Norte | MT |
| Ricardo de Souza Lima Pereira | Sitio São João | Guarantã do Norte | MT |
| Ricardo Furlaneti Bachieri | Estancia Penápolis | Guarantã do Norte | MT |
| Antônio Carlos Chiquita | Sitio São José | Juína | MT |
| Antônio do Nascimento Souto | Fazenda Vista Alegre | Juína | MT |
| Fernando José Ferreira Nunes | Sitio Santa Rita | Juína | MT |
| Gaspar Joaquim Dornelli | Fazenda Patos de Minas | Juína | MT |
| Marcos André Freitas Souza | Fazenda Restia do Sol | Juína | MT |
| Alencar Junior da Rosa | Sítio Santa Rosa | Juina | MT |
| Almir Rogerio Bertusse | Sítio Diamante Azul | Juina | MT |
| Antônio Tarcísio Pillon | Chácara Nossa Senhora de Fátima | Juina | MT |
| Deraide de Oliveira | Sítio Três Irmãos | Juina | MT |
| Edis Bernardo Silva | Chácara Nossa Senhora Aparecida | Juina | MT |
| Elison Rodrigo Santana dos Santos | Sítio Santos | Juina | MT |
| Valdivino Lopes Coelho Junior | Sítio 3 irmãos | Matupa | MT |
| Adilson Dutra de Assis | Sítio Coração de Jesus | Mirassol D' Oeste | MT |
| Adilson Garcia da Silva | Sitio Flor do Campo | Mirassol D' Oeste | MT |
| Antônio Fernando Barbosa Gonsaga | Sítio Santo Antônio | Mirassol D' Oeste | MT |
| Antonio Ivo Leite | Sitio Nossa Senhora de Fátima | Mirassol D' Oeste | MT |
| Aparecido dos Santos | Estância Nossa Senhora Aparecida | Mirassol D' Oeste | MT |
| Cezário Lemos da Silva | Sítio Paraíso da Serra | Mirassol D' Oeste | MT |
| Claudinei Xavier Ribeiro | Sítio Nossa Senhora Aparecida | Mirassol D' Oeste | MT |
| Donizete da Costa Alves | Sitio Estrela Guia | Mirassol D' Oeste | MT |
| Francisco Alves Rodrigues | Sítio Morada da Serra | Mirassol D' Oeste | MT |
| José Adão Coutinho dos Santos | Sitio Santa Luzia | Mirassol D' Oeste | MT |
| José Euclides da Silva | Sitio Sol Nascente | Mirassol D' Oeste | MT |
| Luis Antonio de Carvalho | Sitio 3 Palmeiras | Mirassol D' Oeste | MT |
| Mauro Corte Marina | Sitio Agua Doce | Mirassol D' Oeste | MT |
| Oliveiros Candeias Maria | Sitio São Benedito | Mirassol D' Oeste | MT |
| Oziel de Moura Alves | Sitio Castelo Branco | Mirassol D' Oeste | MT |
| Pedro Odair Roncoleta | Estância Nossa Senhora Aparecida | Mirassol D' Oeste | MT |
| Antonio Carlos Martins Alves | Fazenda Nossa Senhora de Fátima | Nova Canaã do Norte | MT |
| Moacir Jakson Perin | Sitio Perin | Nova Guarita | MT |

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| Owner | Farm | City | State |
|---|---|---|---|
| Adelino José Pope | Sítio São Tiago | Nova Santa Helena | MT |
| Marcelo Pimenta | Sitio Pimentel | Nova Santa Helena | MT |
| Gladistone Soares Lopes da Silva | Fazenda Santiago | Nova Xavantina | MT |
| Giovani Magnani | Sitio União | Novo Mundo | MT |
| Washington de Carvalho Costa | Sítio Carvalho | Novo Mundo | MT |
| Embrapa Agrossiilvipastoril | Fazenda Embrapa | Sinop | MT |
| Alex Henrique Rocha | Sítio Barra da Esperança | Terra Nova do Norte | MT |
| Allan Junior Patel | Sitio Paraiso | Terra Nova do Norte | MT |
| Antonio do Nascimento Miguel | Fazenda Kata | Terra Nova do Norte | MT |
| Carlos Zanovello | Sitio Zanovello | Terra Nova do Norte | MT |
| Claudinei Guizelini | Sitio Apucarana | Terra Nova do Norte | MT |
| Dener Lima Silva | Sitio Novo Mundo I | Terra Nova do Norte | MT |
| Denise Aparecida Lorenzini | Sítio Lorenzini | Terra Nova do Norte | MT |
| Ederson Pereira | Sitio Alvorada | Terra Nova do Norte | MT |
| Edson Silvino de Camargo | Sítio das Mangas | Terra Nova do Norte | MT |
| Elci Machado | Sítio Machado | Terra Nova do Norte | MT |
| Elizeu Pereira Machado | Sitio São Roque | Terra Nova do Norte | MT |
| Enor Miguel Mantovani | Sítio Pequizal | Terra Nova do Norte | MT |
| Gilberto Bartole | Sitio Nossaa Senhora Aparecida | Terra Nova do Norte | MT |
| Imerio Lorenzini | Sitio Lorenzini | Terra Nova do Norte | MT |
| Luiz Antônio Sevens | Sítio Sevens | Terra Nova do Norte | MT |
| Luiz Henrique Antunes | Fazenda Onça Parda | Terra Nova do Norte | MT |
| Moacir Jacó Talini | Sitio Cajueiro | Terra Nova do Norte | MT |
| Nilmar João Guarienti | Sítio Água Branca | Terra Nova do Norte | MT |
| Oli Omerio Zenni | Sítio Vale do Sol | Terra Nova do Norte | MT |
| Valdemir Moreira | Miraguai | Terra Nova do Norte | MT |
| Valmir Carlos Roveda | Sitio São Roque | Terra Nova do Norte | MT |
| Valmor Gebien | Sitio da Serra | Terra Nova do Norte | MT |
| Rômulo Duarte Cunha | Fazenda Botija | Guarabira | PB |
| Renivaldo Brandão Tenório | Fazenda Lagoa do Cassiano | Bom Conselho | PE |
| Alberto de Azevedo Porpino | Fazenda Apoá do Rio | Lagoa do Carro | PE |
| Nilson Francisco dos Santos | Fazenda São Sebastião | Pesqueira | PE |
| Waldemar de Brito Cavalcanti Filho | Fazenda Catolé | Pesqueira | PE |
| Cristiano Nobrega Malta | Fazenda Avimalta | Recife | PE |
| Eriberto de Queiroz Marques | Fazenda Zombaria | Recife | PE |
| Fabíola Rodrigues Lemos | Fazenda Mirin do Vale | Recife | PE |
| Fernando Antônio Brasileiro Miranda | Fazenda Uberaba | Recife | PE |
| IPA - Instituto Agronômico de Pernambuco | Estação Arco Verde | Recife | PE |
| Antônio Francisco Chaves Neto | Estância Três Irmãos | Arapongas | PR |
| Amarildo Antônio Balico | Sete Arroio | Chopinzinho | PR |
| Diones Rafael Boshi | Fazenda Boshi | Chopinzinho | PR |
| Euclides Forlin | Sitio 3 Pinheiros | Chopinzinho | PR |
| Jaidson Peretti | Estância dos Araças | Chopinzinho | PR |
| José Valdecir Basegio | Sítio São José | Chopinzinho | PR |
| Jucemar Luiz Maziero | Propriedade | Chopinzinho | PR |
| Rogério Bruno Ambrosio | Sítio Ambrósio | Chopinzinho | PR |
| Ronaldo Machado | Fazenda Três Saltos | Chopinzinho | PR |
| Aparecido João Florêncio Rodrigues | Sítio Santo Antônio | Colorado | PR |
| Edmarcio Doná | Sitio Santa Maria | Jaguapitã | PR |
| Nelson Jesus Sabóia Ribas | Rancho do Bom Jesus | Jaguapitã | PR |
| Clovis Marques Tozzi | Estancia Santa Maria | Maringá | PR |
| Agrop. Laffranchi Comércio e Ind. Ltda | Agropecuária Laffranchi | Tamarana | PR |
| Paulo Roberto de Souza | Fazenda Santa Maria | Cachoeiras de Macacú | RJ |
| Abelardo Martins de Mello | Fazenda Mello | Conceição de Macabu | RJ |
| Adelmo Pires de Castro | Sítio Jaboticaba | Itaperuna | RJ |
| Moacyr Azevedo de Oliveira | Sítio Palmital | Itaperuna | RJ |
| Paulo Roberto D'Anello | Sitio Jaboticaba | Itaperuna | RJ |
| Alberto Fernandes Gaspar da Silva | Faz Joana Darc | Miguel Pereira | RJ |
| José Donato Dias Filho | Fazenda São Roque | Miguel Pereira | RJ |
| Jorge Luis Pereira de Souza | Oásis da Divisa | Miracema | RJ |
| Luiz Carlos Bandoli Gomes | Fazenda Monte Alto | Natividade | RJ |
| Ernesto Fonseca da Cunha | Faz do Banco | Porciuncula | RJ |
| Mila de Carvalho Laurindo e Campos | Fazenda Recreio | São José de Ubá | RJ |
| Delmo Bastos Lopes | São José da Cachoeira | Valença | RJ |
| Giane Martins de Paula Lopes | Sítio Paraiso | Valença | RJ |

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| Owner | Farm | City | State |
|---|---|---|---|
| José Carlos Reis | Fazenda São Luiz Velho | Valença | RJ |
| José Valter Lima Monteiro | Sítio São José | Valença | RJ |
| Miguel Bruno Conceição | Sítio Guimarães | Valença | RJ |
| Eloi Chaves de Oliveira | Fazenda São Luis | Taipu | RN |
| Antônio Rodrigues Filho | Fazenda Primavera | Ariquemes | RO |
| Clorides Primo Carnevalli | Fazenda Ligiana | Ariquemes | RO |
| Valdir Rutsatz | Sítio Capixaba | Cacoal | RO |
| Fernando Rogério de Souza Magalhães | Sítio Primavera | Candeias do Jamari | RO |
| Osmano José Ramos | Sítio Piquiá | Candeias do Jamari | RO |
| Lourival Caetano Rodrigues | Sítio Buraco Fundo | Costa Marques | RO |
| Celso Pires Maciel | Rancho Paraiso | Vale do Paraiso | RO |
| Antônio Sancho de Souza Neto | Fazenda Retiro da Esperança | Altair | SP |
| Higo Carlos de Freitas | Sítio Carvalho | Altair | SP |
| João Monteiro da Gama | Fazenda São Pedro São Paulo | Arandú | SP |
| Paulo Gabriel Reis Nader | Fazenda Santo Antonio Bela Vista | Caconde | SP |
| Luciano de Carvalho Pontes | Estância Mana | Guaiçara | SP |
| Roberto Almeida Oliveira e outros | Estância Sto Antônio | Guapiaçú | SP |
| Antônio de Oliveira | Fazenda Oliveira | Icem | SP |
| José Miranda Alves de Paiva | Estancia Paraíso | Itapetininga | SP |
| Kenyti Okano | Fazenda Santo Antônio | Ituverava | SP |
| ETEC Cônego José Bento | Escola Agrícola | Jacareí | SP |
| Alexandre Augusto Corteze | Fazenda Santo Antônio | José Bonifácio | SP |
| Anderson Santos Senna | Chácara Senna | Junqueirópolis | SP |
| Homero N. De Paiva | Sitio Santo Antonio | Lavrinhas | SP |
| Joaquim Eurovaldo Junqueira | Sítio São Sebastião | Lavrinhas | SP |
| Célio Alves da Luz | Fazenda Diamante | Lins | SP |
| Waldir Junqueira de Andrade | Fazenda Santana | Lins | SP |
| Márcio Barretto Ribeiro | Fazenda Boiada | Mococa | SP |
| Eugênio Deliberato Filho | Sítio Beira Rio | Mogi das Cruzes | SP |
| Fructuoso Roberto Lima Filho | Estância Paineiras | Nova Granada | SP |
| Carlos Alberto Luiz de Almeida | Fazenda Bacuri | Orindiuva | SP |
| Lourenço Olívio Barbosa Munhoz | Estância Bela Vista | Orindiuva | SP |
| Luiz Antonio de Almeida | Fazenda Barreirão | Orindiuva | SP |
| Marly Terezinha Leme as Silva | Estância Sete Estrela | Orindiuva | SP |
| Eneas Rodrigues Brum | Fazenda Monastério | Paraibuna | SP |
| Joao Geraldo Ribeiro Lobato | Sitio JM | Paraibuna | SP |
| Marcelo Rodolfo de Oliveira | Fazenda Espirito Santo | Paraibuna | SP |
| Rafael Santos Faria | Faz Maria Andrade | Paraibuna | SP |
| Renato Pazzini | Fazenda Do Espirito Santo | Paraibuna | SP |
| Sergio Luis Neves de Oliveira Andrade | Fazenda São Francisco | Paraibuna | SP |
| Antônio Carlos de Meireles | Fazenda Água Quente | Paulo de Faria | SP |
| Darlei Queiroz de Oliveira | Sitio Santos Reis | Paulo de Faria | SP |
| José Carlos de Oliveira | Sítio Camadam | Paulo de Faria | SP |
| Depto de Descent. do Desenv. - APTA | Polo Reg. Do Vale do Paraiba | Pindamonhangaba | SP |
| Reginaldo Cafalloni da Rosa | Rancho Cafalloni | Pindamonhangaba | SP |
| José Alberto Paiffer Menk | Fazenda Santo Antônio | Porto Feliz | SP |
| Alexandre Pereira da Costa | Fazenda Santa Isabel | Potirendaba | SP |
| Adelcio José de Souza | Sítio Família Feliz | Presidente Epitácio | SP |
| Agnaldo Alves Lírio | Sítio Duas Estrelas - Lote 62 | Presidente Epitácio | SP |
| Aisson Neri Barboza | Estância Espelho D'Agua | Presidente Epitácio | SP |
| Antônio Alixandre dos Santos | Sítio Dias | Presidente Epitácio | SP |
| Celso Souza de Oliveira | Sítio Porto Esperança | Presidente Epitácio | SP |
| Erick Luciano dos Santos | Sítio Boa Fé | Presidente Epitácio | SP |
| Gilberto Ricardo Gomes | Estância Gegi - Lote 81 | Presidente Epitácio | SP |
| Gilson Antônio da Silva | Sítio Andorinha Lote 53 | Presidente Epitácio | SP |
| Heitor Hirai | Sítio São Judas Tadeu | Presidente Epitácio | SP |
| João de Andrade | Sítio São João | Presidente Epitácio | SP |
| José Carlos Lima | Sítio Esperança | Presidente Epitácio | SP |
| José Eduardo Soares da Silva | Sítio Santo Antônio | Presidente Epitácio | SP |
| Miguel Batista dos Santos | Sítio 3 Pinheiros | Presidente Epitácio | SP |
| Nelson Antônio Neto | Sítio Paraíso Vale da Benção | Presidente Epitácio | SP |
| Nilza Duarte Fernandes | Sitio São Gabriel Lote 12 | Presidente Epitácio | SP |
| Paulo Lima de Santana | Sítio Três Irmãos | Presidente Epitácio | SP |
| Rogério Miguel | Sitio São José | Santa Branca | SP |
| Heitor de Mello Dias Gonzaga | Fazenda Boa Esperança | Santa Maria da Serra | SP |

(to be continued...)

(continuation...)

| Owner | Farm | City | State |
|---|---|---|---|
| João José Roberto | Sítio Cascata | Santa Rita do Passa Quatro | SP |
| Nelson Vizioli | Sítio São João da Barra | Santa Rita do Passa Quatro | SP |
| Schumann Joubert Camargo e outros | Sitio Estância Colina | Santa Rita do Passa Quatro | SP |
| João Eduardo Benine Reis | Sitio São Paulo | São Joaquim da Barra | SP |
| João Eduardo Benini Reis | Sítio São Paulo | São Joaquim da Barra | SP |
| Bráulio Conti Júnior | Fazenda Sobrama | Socorro | SP |
| Pedro Paulo Silveira Motta e Outra | Fazenda Bom Jesus | Sta Rita do Passa Quatro | SP |
| Haendel Brasilio Camargo | Estancia Zilah | Tambaú | SP |
| Joaquim Carlos Carneiro Siqueira | Faz Açude | Tambaú | SP |
| Mario César Bertoli | Sitio São João | Taubate | SP |
| Humberto Cavalheiro Andrade | Fazenda Boa Esperança | Vargem Grande do Sul | SP |
| Maquis Ranzani Júnior | Fazenda Cláudia | Vargem Grande do Sul | SP |

# Brazilian Association of Girolando Breeders

## *EXECUTIVE BOARD AND COMMITTEES– 2014/2016 TRIENNIUM*

**President:** Jônadan Hsuan Min Ma
**1st Vice-President:** Magnólia Martins da Silva
**2nd Vice-President:** Nelson Ariza
**3rd Vice-President:** João Domingos Gomes dos Santos
**4th Vice-President:** Olavo de Resende Barros Júnior
**1st Administrative Director:** José Antônio da Silva Clemente
**2nd Administrative Director:** Jorge Luiz Mendonça Sampaio
**1st Financial Director:** Luiz Carlos Rodrigues
**2nd Financial Director:** Odilon de Rezende Barbosa Filho
**Institutional and Commercial Relations:** Ronan Rinaldi de Souza Salgueiro

### Audit Committee

| Holders | Substitutes |
|---|---|
| Thiago Bianchi Silveira | Afonso Celso de Resende |
| Alexandre Honorato | Eire Ênio de Freitas |
| Ricardo Miziara Jreige | Roberto Almeida Oliveira |

### Advisory Board

| Holders | Substitutes |
|---|---|
| Everardo Leonel Hostalácio | Aurora Trefzger Cinato Real |
| Renato Cunha Oliveira | Silvío de Castro Cunha Júnior |
| José Geraldo Vaz Almeida | Leonardo Xavier Gonçalves |
| Roberto Antônio Pinto de Melo Carvalho | José Ricardo Fuiza Horta |
| Marcelo Machado Borges | Guilherme Marques de Resende |

## Board of State Representatives

AL – Domicio José Gregorio A. Silva
AL – Marcos Ramos Costa
BA – Ângelo Lucciola Neto
BA – Luiz Hage Rebouças (REP)
BA –Valdemir Acácio Osório (REP)
CE – Francisco Teógenes Sabino
DF – Cézar Mendes
DF – Geraldo de Carvalho Borges
DF – Rúbio Fernal Ferreira e Souza
DF – Walter Alves de Queiroz
ES – Elimário Perterle Fiório
GO – Itamir Antônio Fernandes Vale
GO – Luiz Fernando Della Corte
GO – Thiago Araujo Dias da Costa
MG – Ângelo André Fernandes Júnior
MG – Breno Barbosa Costa
MG – Emílio Afonso França Fontoura
MG – Fabiano Rodrigues Lopes
MG – Fabrício Siqueira
MG – Fernando Peres Nunes
MG – Gustavo Frederico Burger Aguiar
MG – Horácio Moreira Dias
MG – João Machado Prata Júnior
MG – Jorge Papazoglu
MG – José Afonso Mota Ronzani
MG – Luciano Gouveia Fulgueiras
MG – Luiz Fernando Reis
MG – Luiz Paulo Levate
MG – Márcio Luiz Mendonça Alvim
MG – Maria Cristina Alves Garcia
MG – Minoro Hélio Maurício Yamamoto Júnior
MG – Paulo Henrique Machado Porto
MG – Paulo Melo Salomão Gonçalves
MG – Paulo Roberto Andrade Cunha
MG – Plácido Borges Campos
MG – Rodrigo Ribeiro Inácio
MS – Adão Paes Sandim
MS – Anísio Manoel da Silva
MS – Nilo Alves Ferras
MT – Aylon Neves (REP)
MT – João Nilson Pinto de Barros
MT – Luciano Lacerda Nunes
PA – José Luiz Dantas
PE – Alexandre Saraiva de Moraes
PE – Gustavo Alberto Concentino de Miranda
PE – José Adilson da Silva
PE – Waldemar de Brito Cavalcanti Filho
PR – Ronald Rabbers
RJ – Jean Vic Mesabarba
RJ – José Gabriel Souza Machado
RJ – Roberto Pimentel de Mesquita
RO – Darcy Afonso da Silva Neto
RO – Walter Waltenberg Silva Júnior
RS – Carlos Jacob Wallauer
SP – Danilo Carvalho Michelin
SP – Eduardo Lopes de Freitas (REP)
SP – Fructuoso Roberto de Lima Filho
SP – Guilherme Ribeiro Meirelles
SP – João Carlos de Andrade Barreto
SP – João Eduardo Reis Benini
SP – Lauro Texeira Pena
SP – Mateus Ribeiro Abdal
SP – Miltom Okano
SP – Paulo Yamamoto
SP – Virgílio Pittom
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