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The largest milk production plant in Spain and one of the largest in Europe

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TAUSTE GANADERA,
TAUSTE (ZARAGOZA), ESPAGNE

ABSTRACT - Tauste Ganadera is the largest milk production farm in Spain and one of the largest in Europe with 2,405 heads, of which 1,180 adult cows. Milk production is between 27,000 and 28,000 kg. per day. Cows give 8,026 kg. of milk in 305 days, being milked 3 times a day. Food is distributed as a complete ration composed of ensiled corn forage, alfalfa hay, wheat straw, pressed sugar beet pulp, brewer's draff, cotton seed, and soya and sunflower cake. The herd is Holstein breed imported from Canada. Reproduction is assured by semen imported from Canada and USA and by that of the bulls at the farm. Cows are divided into 3 groups of 360 animals, in turn divided into 6 lots of 60 cows, according to their physiological state and their milk production level. The milk is sold as high quality fresh milk in the city of Zaragoza.

Key words: *Intensive production system, complete ration, reproduction, Holstein, cattle.*

RESUME - Tauste Ganadera est la plus importante unité de production laitière en Espagne et une des plus grandes d'Europe avec 1180 vaches adultes et 2405 têtes de bétail. La production laitière est comprise entre 27000 et 28000 kg de lait par jour. Les vaches produisent 8026 kg. de lait en 305 jours avec 3 traites par jour. L'alimentation est distribuée sous forme de ration complète à base de maïs, fourrage ensilé, additionné de foin de luzerne, de pailles de blé, de pulpes de betterave surpressées, de drèches de brasserie, de graines de coton et de tourteau de soja et de tournesol. Le cheptel est de race holstein importé du Canada. La reproduction est assurée par de la semence importée du Canada et des Etats-Unis et par la semence des taureaux produits dans l'unité. Les vaches sont réparties en 3 groupes de 360 animaux, eux mêmes divisés en 6 lots de 40 vaches en fonction de leur stade physiologique et du niveau de leur production laitière. Le lait est écoulé sous forme de lait frais de qualité dans la ville de Saragosse.

Mots-clés: système intensif de production, ration complète, reproduction, Holstein, bovins.

Introduction

Tauste Ganadera, S. A., selects and produces milk cattle.

The company was founded in 1973 and first brought into operation on 9 April 1974, with the first group of 326 Holstein cows and heifers arriving from Canada. Subsequently, between 1976 and 1978, 400 heifers were imported from Canada and the United States and more recently, in 1984 and 1985, 150 heifers of the US Holstein breed were imported from Italy.

In 1987 a group of 50 heifers were imported from Canada, born from high genetic embryos in Canada and the United States, as we explain below.

The company currently has 1,180 adult cows, with a total of 2,045 heads of cattle, that is, cows, heifers and calves.

Tauste Ganadera, S. A., (hereinafter TG) is situated in the region of Aragón, 50 km. to the north of the city of Zaragoza, in the River Ebro valley in an irrigated area of 6,000 Ha. It is located in the village of Tauste, which has a population of 7,500.

Feeding system

Save for during the first six months, the heifers are fed by means of a mincing-mixing-distributing conveyor for each passage of two units, housing groups of 120 cows and 100 heifers, twice a day.

The same food is given to the cows throughout the year, with variation only in the quantity. The food consists of alfalfa hay, corn silage, brewer's draff, cotton seeds, pressed sugar beet pulp and a mixture of cereal grain, together with the mineral-vitamin corrector.

The heifers are also given oats-vetch hay, oats-vetch silage and barley straw.

All the fodder products consumed in Tauste Ganadera are produced by approximately 550 farmers who are shareholders of the company. These farmers have annual contracts and undertake to meet the current requirements of TG.

The principal product cultivated is CORN FOR SILAGE, 9,000 m. of which has been contracted for this

year. Contracts are made with the farmers for the amount of land to be cultivated and TG carries out the sowing on a staggered basis so that harvesting using TG's self-propelled harvesting machines, may also be staggered. Prices are agreed with the farmers' representatives of the Board of Directors before sowing and are paid for green products on TG's scales, with the cost of harvesting and transport being borne by TG.

Second harvest crops, such as oats-vetch, are also sown according to the year and requirements.

ALFALFA HAY is purchased from the farmers cut by cut, with the prices being set according to market levels and qualities 4,000 t. of this product are consumed.

CEREAL STRAW is obtained from the farmers at harvest time (from June 20th to August 15th). For each kg. of straw they deliver to us we return to them 10 kg. of manure, matured and loaded on their vehicles. This exchange is highly beneficial to the farmers and means that with the 25,000 t. of manure that we produce every year, the structure and production rate of the farmers, lands have increased, especially in respect of corn production. Straw consumption, including both beds and meals, amounts to 3,300 t.

These contractual relations with the farmer/shareholders are playing an important economic role in the Aragonese community and in the village of Tauste in particular, since they imply turnover in purchases, in fodder products and cereals alone, of more than 250 million pesetas, to which must be added the 60 jobs that they provide, with a great number of advantages in respect of work hours, holidays, specialization courses, etc., plus the amount corresponding to services, shops, workshops, restaurants, etc. which a company of this nature automatically produces.

In addition, there are the semi-industrial products which we consume in considerable quantities, that is, BREWER'S DRAFF (6,200 m.), PRESSED SUGAR BEET PULP in pellets (870 m.), COTTON SEED (632 m.), and also the CONCENTRATES, by which we mean cereal mixtures and protein products (soya, sunflower) and correctors (1,800 m.).

The consumption of concentrates in our plant does not correspond exactly to that included in the TG Report, to the intensive bovine systems group, on the basis of concentrated foods, as mean consumption per cow per annum amounts to 1,273 kg., and per litre produced to 196 gr. These figures are much lower than the norm in other systems applied in areas which are much greener.

Feeding by the «UNIFEED» system is carried out, as we pointed out earlier, by means of a special trailer and calculation of the rations is performed according to the American system, in E.N.L., PB and F.A.D. (Fibre acid detergent).

I will now give you a few examples for cows in-milk, of 15 and 36 litres, for dry cows about to give birth and for rearing of heifers of 12 to 18 months. This is the document we use for calculation in PCs, by means of our own

computer program, and which serves as a basis for the practical distribution of rations to each group of 60 to 120 cows, with mean production. Every 15 days, following an individual milk check, any changes that may be necessary are made in order to ensure that each group of 60 cows has mean production with a difference of + 3 litres.

Thanks to the handling of the feed, with the greatest possible care, we are able to obtain excellent reproduction results, as we will now see.

Reproduction

Since the establishment of the company all reproduction has been performed by A.I., using both Canadian and American semen. We have two inseminator specialists who devote their work to reproduction process and to the entire gynaecological field, and further five inseminators for night surveillance, were substitutions, vacations, etc. In all cases insemination is performed 14 hours after the rutting period.

The technical results obtained in this field during 1987 are as follows:

- Births: 1,248
- Live calves per 100 births: 95.51 %
- Twin births: 6.08 %
- Interval between births: 387.24 days.
- Interval between birth and 1st A.I.: 74.21 days.
- Interval between birth and fertilized I.: 106.23 days.
- Mean number of inseminations per birth: 1.68
- Fertility between 1st and 2nd A.I.: 83.02 %
- Annual replacement: 18.80 %

The following bulls are those most used at present: Bis-May Tradition Cleitus; Cal Clark Board Chairman; Exranco Triad Fisher Place Mandingo-Twin; Glenafton Enhancer; Hanover Dagger; Hanover Hill Designer; Hanover Hill Inspiration; Hanover Hill Sabastian; A. Hurtgen Vue Marathon; Iona Farm Camaro; Stead Valiant Tab; Lekker Bell Jesse-ET; Lekker Valiant Royal Thonyma Secret; and the Italian bulls HTH Gamble «MAX»; Salone Valiant Prince; Vigo Centennial Chief «CIF» and Willshom Esquire «WES».

Tauste Ganadera also uses bull semen, which it imports from the United States and Canada, and which it distributes, in its capacity as a private centre, for tests in Spain. The bulls currently on trial are: Hilltop Hanover B DALTON-ET; Long-Haven Boya PROCTOR-ET; Mr. Berkshire Valley MAGNET-ET; Long Haven SCOTTY-ET; Calbrett Tony KYLE-ET and Pearmount INDICATION-ET, whose pedigrees we include.

The bulls repeated most often in the records of cows and heifers are currently the following: Quality Ultimate; Iona Highlite; Dab Monitor Frost; Hanover Hill Starbuck; Sweet Tradition; Haven A Hilltopper Warden; Ca-Lill Standout

Cavalier; Breezyview Job Royal Stewart; Roybrook Tempo; Arlinda Cinar Geran Elevation Enchanter; Cal-Clark Board Chairman, etc. All these bulls, as well as certain others which I have not named, have each sired more than 30 young cows.

As we explained at the beginning, in November a group of heifers arrived, all of high genetic quality and E.T. sired. Among these heifers we should highlight a full sister of Mawacres Warden Patricia (EX), All-Canadian-87, 3 years old; a daughter of A M-Villards Elevation Marie-ET (EX), with Melvin; a daughter of a M-Willards Elevation Mary-ET (EX), with Sidney; various daughters of A Long-Haven Monitor Tara (VG), with Marathon; daughters of A Verdath Mars Fiesta (EX), with Starbuck, Chief Mark, Valiant and Mandingo, and six daughters of A Willowrag Kate Mar Kara (EX), two with Valiant, two with Starbuck and two with Chief Mark. Many others also have famous mothers, with the best bulls of the time, such as: Arlinda Rotate, Carlin-M Ivanhoe Bell, Marsfield Elevation Tony, Whittier-Farms Ned Boy and those already mentioned.

This is undoubtedly one of the most important groups ever imported into Spain in the history of cattle-farming, since the mothers of the 50 heifers represent an average of 11,432 kg. of milk and the grandmothers an average of 10,670 kg., with the majority of the three generations classified as EX and VG, and having excellent fat and protein indexes.

We should simply add that at the National Breeding Competition held in Barcelona in November 1987, Tauste Ganadera, S.A. was awarded the following prizes:

- Best national breeder
- Best national herd
- Young cows - National champion
- Cows - National champion runner-up
- Heifers - National champion runner-up
- Best udders
- Best descendancy of cows.

On the basis of this important genetical background we are developing the PROGET project (ET Genetic Project) in which TG is to produce and sell, from the best genetic lines in the world, high genetic level breeds, frozen semen, fresh and frozen embryos and breeding animals which are future semen donors.

Brief summary of the installations

All the installations are in open housing

MILKING COWS. Divided into three groups of 360 animals are into six units of 60 animals, each with a feeding passage, walking area and a rest area, with permanent bedding. Every 15 days the groups are reorganized according to production, following production checks; in order to facilitate feeding by UNIFEED, with a mixture for each two groups of 60 cows.

DRY COWS. Divided into six groups of 40 cows: two groups about to give birth, with special feeding; one group for dry cows and the remaining three groups for cows between drying and up to 20 days before birth.

MATERNITY. A special unit of 14 compartments, each with room for three cows waiting to give birth, and an area for 40 new-born animals in groups of ten, in permanent bedding, and automatic washing areas where the animals spend a few days in milking, in their own 5 x 5 compartments (Tecnozoo rooms), whilst they may suffer from mammary oedema or any other post-natal problems, before being transferred to the general milking area.

SPECIAL COWS. (High production and genetic levels). An area with four groups of 14 cows, with permanent bedding and automatic washing, completed with an area of seven compartments for individual cows and a special milking area for them with room for five animals (Tecnozoo).

MILKING ROOM. We have a milking room of 20 x 20, with rapid exit, run-off and automatic release (Tecnozoo) and showers for groups of 60 cows. Three milkings of the 1,000 cows are performed approximately, every day. For this reason we have three milking rooms, each with a specific task: the general milking room of 20 x 20, for all cows following 20 days after giving birth; a small 5 x 5 room for cows recently given birth, and the 5-in line room for the best producing cows. It is a great satisfaction for us to have three milking rooms of the top quality Italian trademark «Tecnozoo».

NURSERY. (Artificial milk-feeding). During the first month artificial feeding is performed in individual compartments of reinforced thermostable plastic. From the second month the young animals are fed in groups of 10/15, on the basis of artificial milk, fodder and straw. During the last month feeding is in groups of 10/15 animals, in feeding machines, in order to progressively accustom the animals to artificial feeding. the powder concentration of the milk is gradually reduced, so that the calves slowly eat more straw, in concentrated form, and hay alfalfa, up to three months. Only the females are kept; the males are sold within the first week for fattening in other establishments.

BREEDING. We have 16 units where the heifers are housed together with the dry cows, from 3 months old up to 2 months before giving birth. There are eight units each housing 60 animals, where the heifers remain until they reach 14 months. The remaining eight units each house 50 heifers, from 15 months (the first A.I. is made in these units at 17 months), up to 24/26 months.

MILK MARKETING. All the milk produced is cooled after milking and is passed in a closed circuit to the packing plant. TG sells registered milk, in Tetra-Rex containers, distributed to 660 sales points in the city of Zaragoza. The milk is sold under the trade name «ALBA Registered Milk».

CONCLUSION. By reason of all the above, it may be said that at the present moment, by virtue of its size and its technical results and high production and selection technology. TG is within the world elite of companies dedicated to the selection of «Holstein» milk cattle.

NAME HILLTOP-HANDOVER-B DALTON-ET HES. NO. 1961105
SEX MALE BORN 8/23/84 OWNED BY TAUSTE GANADERA S/A GRANJA DIPLOMADA
CARRIERA GALLORA
SANGUESA. RP 10 TAUSTE 00000
PTPI +837 P9 1/87

PAWNEE FARM ARLINDA CHIEF 1/86
1427381 94-13Y TPI +575 GM 1/86
PD +13P +40F +40S +392M
PDS +92 +88 +93 +89
PDX +.01 +.15 +.02 59R 1/85
PCT +1.33 ±.07 7/87 2904 HRD
99R 7674 DAU
EFT DAU/HRD 6.9
ALL DAU AVE ACT SC 80.4
EFT DAU AVE AASC 82.6
EFT STD DEV AASC 3.5

2ND GET/SIRE EASTERN ST 1982
1ST GET/SIRE MINN B 2 1975
1ST GET/SIRE MINN B 2 W 1975
LIFETIME 1817 165435 3.8 4051

IRVINGTON BRIDE ADMIRAL 5/68
1237057 92-11Y TPI +190 GM 5/68
PD -551M -28F 99X REP 5/85
7639 DAUS AVG 15128M 3.54X 536F
PDT +1.84 ±.07 7/85 1931 HRD
99R 4555 DAU
5TH GET/SIRE C NAT SHOW 1967
5TH AGED BULL WATERLOO 1958

ALLIED PIONEER JOHANNA ROSE
6062344 82-3Y CTP1 +150
COW INDEX -968M -9F 51X REC
MC DEV -682 +131 5 REC
DHI 3-01 2X 305D 15590M 4.6X 724F
DHI 4-01 2X 284 17700 4.5 796
DHI 5-00 2X 305 18250 4.3 788
DHR 6-02 2X 298 15860 4.4 698

PAWNEE FARM REFLECTION ADMIRAL 1/69
1383926 93-15Y TPI +217 GM 1/69
PD -358M +3F 99X REP 5/85
11973 DAUS AVG 15915M 3.77X 600F
PDT +.40 ±.07 7/85 1198 HRD
99R 2795 DAU

PAWNEE FARM GLENVUE BEAUTY
4546976 90-7Y CTP1 +132
COW INDEX -889M +13F 30X REC
MC DEV 527 1911M 2 REC
HIR 3-08 2X 325 2112M 4.1X 81F
HIR 4-09 2X 325 2629M 3.8 946
HIR 5-01 2X 313 2109M 4.0 857
LIFETIME 1817 165435 3.8 4051

IRVINGTON BRIDE ADMIRAL 5/68
1237057 92-11Y TPI +190 GM 5/68
PD -551M -28F 99X REP 5/85
7639 DAUS AVG 15128M 3.54X 536F
PDT +1.84 ±.07 7/85 1931 HRD
99R 4555 DAU
5TH GET/SIRE C NAT SHOW 1967
5TH AGED BULL WATERLOO 1958

ALLIED PIONEER JOHANNA ROSE
6062344 82-3Y CTP1 +150
COW INDEX -968M -9F 51X REC
MC DEV -682 +131 5 REC
DHI 3-01 2X 305D 15590M 4.6X 724F
DHI 4-01 2X 284 17700 4.5 796
DHI 5-00 2X 305 18250 4.3 788
DHR 6-02 2X 298 15860 4.4 698

OCEAN-VIEW ELEVATION DEBBIE 2E
10388530 91-6Y CTP1 +820 L INEAR SYS
2E 6-02 91 EEEV
CI +43P +58F +1639M +1.43T
DEV +227 +340 +8325 +00.6
CIS +177 +193 SIXREP 7/86

DHR 2-05 2X 305D 16310M 4.0X 646F
DHR 3-07 2X 305 19700 4.1 1866
DHR 3RD NAT L LEADER 2201LX 5 FAT
DHR 2ND NAT L LEADER 2201LX 5 FAT
DHR 4-10 2X 305 31260 3.9 1228
DHR 305 35660 3.9 1376
LIFETIME 1183 101060 4.1 4168

ROUND OAK RAG APPLE ELEVATION
1491007 96-10Y TPI +517 GM 7/85
ALL-AMERICAN GET/SIRE 1983
ALL-AMERICAN GET/SIRE 1977
ALL-AMERICAN GET/SIRE 1981
H.A.-ALL-AMER GET/SIRE 1981
H.A.-ALL-AMER GET/SIRE 1981
PD +6P +20F +41S 1349M
CIS +43 +02 +01 99R +7.285
PDT +2.27 ±.07 7/87 6878 HRD
99R 36291 DAU
EFT DAU/HRD 17.7
ALL DAU AVE ACT SC 81.2
EFT DAU AVE AASC 83.6
EFT STD DEV AASC 3.4

FLEETRIAGE BOOTMAKER DIXIE 2E
9494686 90-6Y CTP1 +723 GM 2E
CI +43P +40F +1707M +1.19T
DEV +334 +273 +12487 +03.8
CIS +137 +158 52XREP 7/87
DHR 2-08 2X 305D 22230M 3.6X 799F
DHR 305 26550 3.6 943
DHR 4-00 2X 305 29330 3.2 934
DHR 5-04 2X 305 36751 2.8 1024
DHR 6-07 2X 305 37360 3.1 1149
DHR 305 43430 3.1 1314
DHR 9-08 2X 305 39240 3.3 1204
LIFETIME 2822 233313 3.3 7677

TIDY BURKE ELEVATION .PI +242 GM 1.773
1271810
PD -320M -20F 99X REP 5/85
2314 DAUS AVG 14995M 3.50X 525F
PDT +1.70 ±.10 7/85 1129 HRD
98R 1129 DAU
2ND GET/SIRE S W REGNL 1959

ROUND OAK IVANHOE EVE +450 4E
5749758 94-12Y CTP1 +450 4E
COW INDEX -61M +217 9 REC
DHR 4-03 2X 345D 24440M 4.2X 1024F
DHR 5-03 2X 351 20810 4.0 838
DHR 7-08 2X 351 25870 3.9 1013
DHR 8-11 2X 305 23640 4.1 1960
LIFETIME 3317 196030 4.1 8070

PACLAMAR BOOTMAKER TPI +369 GM 7/84
1450228 94-11Y +6F 99X REP 5/85
PD +212M +6F 99X REP 5/85
30842 DAUS AVG 1772M 3.59X 638F
PDT +1.17 ±.07 7/85 6010 HRD
99R 18228 DAU
1ST GET/SIRE E NAT SHOW 1975
5TH GET/SIRE C NAT SHOW 1975

FLEETRIAGE MONA DIXIE +559 48X REC 2E
7686855 90-9Y CTP1 +559 48X REC 2E
COW INDEX -1308M +437 2 REC
MC DEV +1308M +437 2 REC
DHR 5-10 2X 365D 32910M 3.3X 1076F
DHR 7-02 2X 364 34670 3.7 1279
DHR 8-04 2X 365 36010 3.6 1279
DHR 10-01 2X 365 40010 3.5 1413
LIFETIME 3024 238510 3.6 8631

60 02566.0 08/14/87 8D7225019
Holstein Association

NAME LONG-HAVEN BOVA PHUCCIOR-ET REG. NO. 1967045
 SEX MALE BORN 9/02/84 OWNED BY TAUSTE GRANJA S/A GRANJA DIPLOMADA
 SANGUESA, KM 10 TAUSTE 00000
 TPI +54* P8 1/87

ROUND OAK RAG APPLE ELEVATION
 1491007 06-10Y IPI 102 7/85
 ALL-AMERICAN GET/SIRE 193
 ALL-AMERICAN GET/SIRE 1978
 ALL-AMERICAN GET/SIRE 1977
 H.M.-AMER GET/SIRE 1981
 H.M.-AMER GET/SIRE 1980
 P.M.-ALL-AMER GET/SIRE 1980
 PD +45 +52 +61 +46
 PDX -02 +04 7/87 7/85
 PQT +2.27 ±.07 7/87 6878 HRD
 99R 36291 DAU
 EFT DAU/HRD 17.7
 ALL DAU AVE ACT SC 81.6
 EFT DAU AVE AASC 83.6
 EFT STD DEV AASC 3.4

ROCKALLI SON OF BOVA
 1655634 88-6Y TPI +690 GM 1/87
 6-01 88 V+E 2431231 00000 0
 PD +29P +34F +124S +2063M
 PDS +103 +167 +127 +126
 PDX -18 -.21 -.25 99R 7/87
 PQT +2.13 ±.07 7/87 538 HRD
 99R 1824 DAU
 EFT DAU/HRD 14.5
 ALL DAU AVE ACT SC 72.2
 EFT DAU AVE AASC 81.2
 EFT STD DEV AASC 3.5

ROCKALLI MAGNET DARC
 7945156 85-3Y CTPI +248
 CI -7F +120M +711T
 DEV +20 +1660 +02.0
 CIS -5 461REP 1/87
 DHR 3-02 2X 3050 19860M 3.5X 699F
 DHR 4-10 2X 305 22520 3.8 807
 DHR 4-10 2X 305 23760 3.9 965

LONG-HAVEN JEWEL POLLY
 9128466 90-6Y CTPI +473
 6-00 90 EEEV 1111222 22104 0
 CI +19F +424M +1.35T
 DEV +209 +7177 +02.2
 CIS +54 514REP 7/87
 DHI 2-00 2X 3050 25820M 3.4X 867F
 DHI 3-02 2X 305 29522 3.4 1005
 DHI 4-02 2X 305 27780 3.4 958
 DHI 5-05 2X 305 30040 3.6 1095
 DHI 6-05 2X 305 35350 4.0 1415
 DHI 7-05 2X 305 39274 4.0 1572
 DHI 8-05 2X 305 44152 4.1 1593
 DHI 9-05 2X 305 47320 4.1 1623
 LIFETIME 1087 100564 2.3 0423

PROVIN MTN IVANHOE JEWEL
 1393997 92-9Y IPI +325 GM 1/80
 PD -7P +5F -17S -263M
 PDS -1 -6 -1 -4
 PDX +0.3 +0.8 +0.4 99R 1/83
 PCT +1.48 ±.07 7/87 934 HRD
 99R 2292 DAU
 ALL DAU AVE ACT SC 81.2
 EFT DAU/HRD 7.7
 EFT STD DEV AASC 3.5

LONG-HAVEN PIXIE-TWIN
 8193699 91-12Y CTPI +212
 CI -14P 10F -49M +1.34T
 DEV -225 +6 -582 +01.0
 CIS -39 -41 50XREP 7/87
 DHI 3-03 2X 3050 17320M 3.2X 562F
 DHI 3-06 2X 365 24626 4.1 1008
 DHI 4-07 2X 305 30910 3.7 1138
 DHI 5-07 2X 305 32447 3.7 1212
 DHI 6-09 2X 305 26090 4.2 1098
 DHI 7-09 2X 305 28023 4.2 1164
 DHI 8-01 2X 305 22820 4.3 980
 DHI 9-01 2X 305 25408 4.2 1075
 DHI 10-02 2X 305 27610 3.8 1052
 DHI 11-02 2X 305 34558 3.8 1190
 DHI 12-02 2X 305 20521 3.8 1170
 LIFETIME 1087 100564 2.3 0423

TIDY BURKE ELEVATION
 1271810 TPI +239 GM 1/73
 PD -32M -20F 99X REP 10/74
 23.4 DAUS AVG 14995M 3.50X 525F
 PQT +1.06 ±.10 1/85 331 HRD
 99R 1129 DAU
 2ND GET/SIRE S W REGNL 1959
 ROUND OAK IVANHOE EVE
 5749759 94-12Y94-10Y93-9Y AE
 COW INDEX -61M +15F 47X REC
 MC DEV +4378 +217 9 REC
 DHR 4-03 2X 345D 24440M 4.2X 1025F
 DHR 5-03 2X 351 20810 4.0 838
 DHR 7-08 2X 351 25870 3.9 1013
 DHR 8-11 2X 305 23640 4.1 960
 LIFETIME 3317 196030 4.1 8070
 C ROMANDALE SHALIMAR MAGNET*RC
 1560362 90-3Y TPI +328 GM 5/74

ROCKALLI HE-MAN DENISE
 7772145 90-7Y 30-SY 88-4Y GMD 2E
 COW INDEX +290M +135F 52X REC
 MC DEV +4526 2690M 3.6X 800F
 DHR 5-08 2X 351 30970M 3.7 1190
 DHR 6-09 2X 331 28450 3.6 1010
 DHR 7-09 2X 365 30650 3.6 1103
 LIFETIME 3112 210500 3.7 7758

OSBORNDALE IVANHOE
 1189870 90-10Y TPI +299 GM 9/73
 ALL-AMERICAN GET/SIRE 1969
 RES.-ALL-AMER GET/SIRE 1970
 PD -586M -7F 99X REP 10/74
 12868 DAUS AVG 14755M 3.79X 559F
 PQT +2.49 ±.07 1/85 1371 HRD
 99R 5693 DAU

LISWELL HILL JEWEL
 3993901 90-9Y
 COW INDEX -444M +4F GMD
 MC DEV +1228 1851M 4.5X 833F
 HIR 2-07 2X 3650 19996 4.5 800
 HIR 4-10 2X 365 22458 4.7 1050
 HIR 6-04 2X 322 20854 4.3 987
 LIFETIME 2086 106900 4.4
 ROUND OAK RAG APPLE ELEVATION
 1491007 06-10Y IPI 102 7/85
 ALL-AMERICAN GET/SIRE 193
 ALL-AMERICAN GET/SIRE 1978
 ALL-AMERICAN GET/SIRE 1977
 H.M.-AMER GET/SIRE 1981
 H.M.-AMER GET/SIRE 1980
 P.M.-ALL-AMER GET/SIRE 1980
 PD +45 +52 +61 +46
 PDX -02 +04 7/87 7/85
 PQT +2.27 ±.07 7/87 6878 HRD
 99R 36291 DAU
 EFT DAU/HRD 17.7
 ALL DAU AVE ACT SC 81.6
 EFT DAU AVE AASC 83.6
 EFT STD DEV AASC 3.4

HIGH-LEVEL ADMIRAL LISA SPECKS
 6625589 93-9Y 93-6Y 91-5Y 3E
 COW INDEX -1103M -40F 53X REC
 MC DEV -2007 -59 9 REC
 DHI 3-10 2X 320D 21633M 3.8X 856F
 DHI 4-10 2X 311 23580 4.4 1031
 DHI 5-10 2X 305 27170 3.7 1014
 DHI 6-10 2X 305 27170 3.7 1014
 DHI 7-10 2X 305 27170 3.7 1014
 DHI 8-10 2X 305 27170 3.7 1014
 DHI 9-10 2X 305 27170 3.7 1014
 DHI 10-10 2X 305 27170 3.7 1014
 DHI 11-10 2X 305 27170 3.7 1014
 DHI 12-10 2X 305 27170 3.7 1014

60 0257-0: 08/14/87 807225019

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SEX MALE BORN 10/25/84 OWNED BY TAUSTE GANADERA S/A GRANJA DIPLOMADA
 CARRERA GALLUR
 SANGUESA. KM 10 TAUSTE 00000
 PTPI +652 P9 1/87

TIOY BURKE ELEVATION TPI +239 GM 1/73
 1271810
 PD -320M -20F 99X REP 10/74
 2314 DAUS AVG 14955M 3.50X 525F
 PDT +1.66 ±.10 1/85 331 HRD
 98R 1129 DAU
 2ND GET/SIRE S W REGNL 1959

ROUND OAK IVANHOE EVE
 5749756 04-12Y CTPI +147 47X REC
 1271810
 COW INDEX +4378 +217 0 REC
 MC DEV +3478 +217 0 REC
 DHR 4-03 2X 346M 24440M 4-21024F
 DHR 5-03 2X 351 20810 4-0 838
 DHR 7-08 2X 351 25870 3-9 1013
 DHR 8-11 2X 305 23640 4-1 960
 LIFETIME 3317 196030 4-1 8070
 C ROMANDALE SHALIMAR MAGNET*RC
 1560362 90-3Y TPI +328 GM 5/74

PD +467M -12F 99X REP 1/85
 2725 DAUS AVG 17856M 3.45X 616F
 PDT +.81 ±.07 1/85 945 HRD
 5TH AGED BULL E NAT SHOW 1968

ROCKALLI HE-MAN DENISE
 7772145 90-7Y CTPI +260 GMD 2E
 COW INDEX -300M -3F 52X REP
 MC DEV +4256 +135 7 REC
 DHR 3-05 2X 356D 26940M 3-6X 980F
 DHR 5-08 2X 351 30970 3-7 1159
 DHR 7-09 2X 351 28450 3-6 1010
 DHR 8-09 2X 365 30850 3-9 7758
 LIFETIME 3112 210500 3-9 7758

PAYNEE FARM ARLINDA CHIEF
 1427381 94-13Y TPI +529 GM 1/85
 PD +392M 40F 99X REP 1/85
 18189 DAUS AVG 17628M 3.76X 662F
 PDT +1.50 ±.07 1/85 4027 HRD
 99R 10834 DAU
 2ND GET/SIRE EASTERN ST 1982
 1ST GET/SIRE MINN B C W 1976

GLENDELL NEB BOY ADORN
 6665096
 COW INDEX -213M -18F 45X REP
 MC DEV +4698 +75 1 REC
 DHI 2-04 2X 1950 11370M 3-2X 359F

ROUND OAK RAG APPLE ELEVATION
 1491007 96-10Y TPI +512 GM 1/85
 ALL-AMERICAN GET/SIRE 1983
 ALL-AMERICAN GET/SIRE 1978
 ALL-AMERICAN GET/SIRE 1978
 5891 DAUS AVG 18411M 3.65X 674F
 PDT +2.17 ±.07 1/85 5051 HRD
 99R 42174 DAU

DAKVIEW PRONIS ANNETTE
 7823883 87-8Y CTPI +120
 COW INDEX -828M -18F 36X REC
 MC DEV +379 +53 6 REC
 DHI 4-04 2X 305D 19990M 3-8X 752F
 DHI 5-05 2X 305 21000 3-7 787
 DHI 6-04 2X 305 22350 3-8 860
 DHI 7-06 2X 305 21210 4-0 857
 LIFETIME 1830 115920 3-8 4450

ROUND OAK RAG APPLE ELEVATION
 1491007 96-10Y TPI +517 GM 7/85
 ALL-AMERICAN GET/SIRE 1983
 ALL-AMERICAN GET/SIRE 1978
 ALL-AMERICAN GET/SIRE 1977
 H-M-ALL-AMER GET/SIRE 1981
 H-M-ALL-AMER GET/SIRE 1980
 PD +6P +20F +41S +343M
 PDS +45 +32 +61 99R +75 85
 PDT +2.02 ±.04 7/85 6278 HRD
 99R 36291 DAU
 EFT DAU/HRD 81-2
 ALL DAU AVE ACT SC 83-6
 EFT DAU AVE AASC 3-4
 STD DEV AASC 3-4

ROCKALLI MAGNET DARCY
 7945156 85-3Y CTPI +248
 CI -7F +120M +771T
 DEV +20 +1660 +02-0
 C15 -5 46XREP 1/87

DHR 3-02 2X 305D 19860M 3-5X 699F
 DHR 4-10 2X 305 22520 3-6 807
 DHR 5-02 2X 365 23760 3-6 865
 DHR 6-02 2X 365 27000 3-7 998

GLENDELL ARLINDA CHIEF
 1556373 93-7Y TPI +557 GM 7/87
 H-M-ALL-AMER GET/SIRE 1981
 PD +13P +31F +593M
 PDS +75 +104 +85 +84
 PDX -.09 -.02 -.14 99R 7/85
 PDT +1.63 ±.07 7/87 4062 HRD
 99R 12437 DAU
 EFT DAU/HRD 80-2
 ALL DAU AVE ACT SC 82-6
 EFT DAU AVE AASC 3-6
 STD DEV AASC 3-6

1ST GET/SIRE W NAT SHOW 1981
 2ND GET/SIRE VA B C W 1983
 1ST GET/SIRE TENN B C W 1982

DAKVIEW ELEVATION PAM
 8774525 87-5Y CTPI +236
 CI -3F -547M +1,17T
 DEV -10 -2020P +07,0
 C15 -39 50XREP +785

DHI 2-08 2X 305D 14050M 3-9X 551F
 DHI 3-08 2X 305 20150 4-0 802
 DHI 4-08 2X 305 19030 4-0 770
 DHI 5-09 2X 297 16040 4-0 642

ROCKALLI SON OF BOVA
 1665634 88-6Y TPI +690 GM 1/87
 6-01 88 V+E 2431231 00000 0
 PD +29P +34F +124S +2063M
 PDS +103 +167 +127 +126
 PDX -.18 -.21 -.25 99R 7/87
 PDT +2.13 ±.07 7/87 538 HRD
 99R 1824 DAU
 EFT DAU/HRD 79-6
 ALL DAU AVE ACT SC 82-2
 EFT DAU AVE AASE 82-2
 STD DEV AASC 3-5

DAKVIEW GLENDELL SYBIL
 9283404 92-9Y CTPI +609 L INEAR SYS
 3E 9-05 92 EEEV
 CI +10P +40F +563M +2-03T
 DEV +107 +263 +4054 +08-6
 C15 +87 +97 53XREP 7/87

DHI 2-01 2X 305D 16480M 4-3X 711F
 DHI 3-00 2X 305 18710 4-2 785
 DHI 4-00 2X 305 27990 4-4 1235
 DHI 5-04 2X 305 21410 4-2 895
 DHI 6-09 2X 305 21840 4-0 882
 DHI 8-08 3X 305 30850 4-0 1244
 LIFETIME 1830 137280 4-2 5752

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