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Purebred Dairy Sires: Their Value and Influence on Production

T.M. Olson

R.M. Gilcreast

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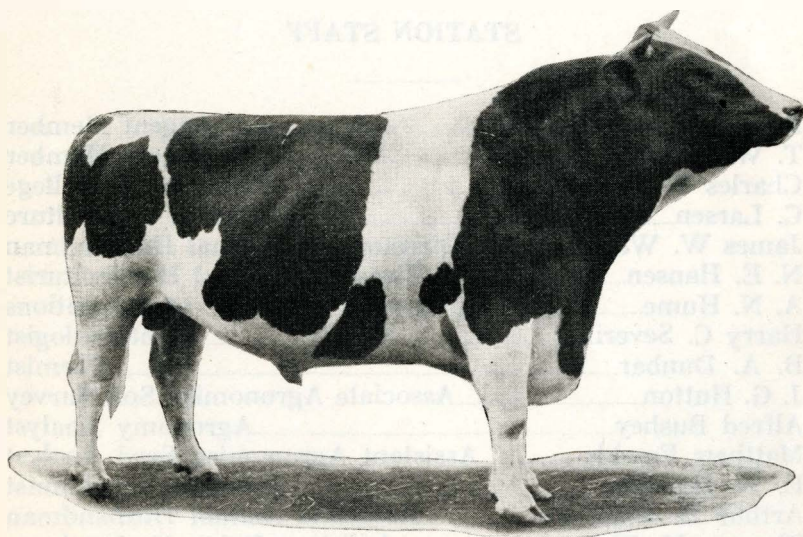
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PUREBRED DAIRY SIRES

**THEIR VALUE AND INFLUENCE
ON PRODUCTION**



Sir Aaggie Colantha Korndyke
College Holstein Sire

DEPARTMENT OF DAIRY HUSBANDRY

**AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE COLLEGE OF
AGRICULTURE AND MECHANIC ARTS**

BROOKINGS, SOUTH DAKOTA

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PUREBRED DAIRY SIRES

THEIR VALUE AND INFLUENCE ON PRODUCTION

Thomas M. Olson

Roy M. Gilcreast

Introduction

There are two fundamental factors which should be considered in starting a dairy herd. The first factor is the experience and training of the prospective dairyman. Success in the dairy business presupposes that the management shall have some knowledge of how to feed and care for dairy cows. Without this knowledge a low average production is likely to result, even with good producing cows. Dairy experience should not be gained with a high priced herd and at the expense of good producers.

The second factor which should be given consideration before deciding on the method of starting the herd is the buildings in which the herd will be housed. This does not mean that one must have an expensive barn with modern equipment. However, one must have a barn which can be kept comfortable during the cold weather and in which a clean, wholesome product can be produced. Profitable production can not be expected from dairy cows kept out of doors or in cold buildings during inclement weather.

If the prospective dairyman lacks the experience and training so necessary to success and does not have a barn which can be kept comfortable and clean, he would no doubt find it to his advantage to grow into the business gradually by using a purebred dairy sire of the breed in which he is interested. This would afford the opportunity of gaining experience and getting the necessary buildings in shape while the dairy herd is developed.

Many farmers in the northwest have scrub or grade cows and the data presented in this bulletin show that where a purebred dairy sire, having good producing ancestors, is mated to such animals it is only a comparatively short time before a high producing herd may be established. Observations bear out the statement that farmers who begin dairying by using good purebred sires and cull out the low producing cows rarely fail in the dairy business. To some the

purebred sire route may seem too long and slow but to those who do not have the finances necessary to furnish the care, feeding and housing so necessary to success, this method is to be recommended.

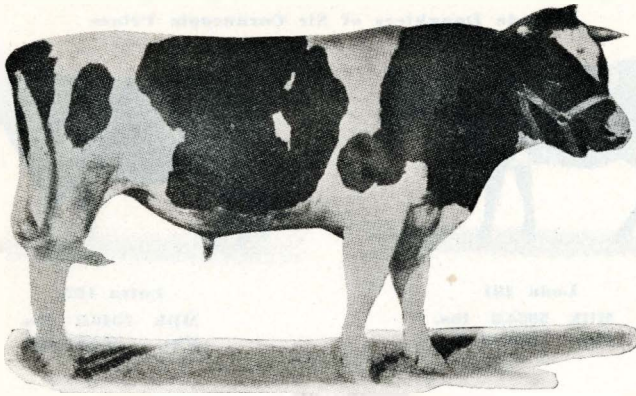
Buying high grade dairy cows appeals to many prospective dairymen as the most feasible method of starting a dairy herd. If the purchaser is an experienced dairyman and is equipped to care for the cows properly, this procedure has much in its favor. However, there are pitfalls which should be kept in mind in buying grades from dairy sections. Too often the grades are bought regardless of their production and as a result the purchaser finds he has a herd of culls, which in many instances are not as good milkers as some of the scrubs, or grade beef animals he already owns. It is also increasingly difficult to purchase cows in large numbers from dairy sections without introducing disease. Contagious diseases once introduced are very difficult to eradicate from the herd and buildings.

Too often those who purchase grade dairy cows have the feeling that high grade cows are all profitable producers, even when kept under adverse conditions. This type of dairyman is often disappointed. The reasons may not always be obvious but the beginner is likely to put the cause of the failure on the cows and not on the management.

How to Select the Sire

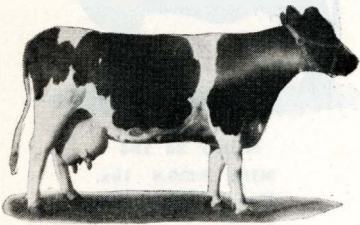
Before taking up in detail how to select the sire, it is well that those interested should know and bear in mind that there is a marked difference in purebred sires. Further, that as the production in the herd increases the sires used must be relatively better in order to continue to increase production in their progeny. In other words, each succeeding sire must be chosen with greater care if high production is to be maintained or increased.

Unfortunately we have not reached the stage in our breeding where we can select dairy sires and be absolutely certain that they will in all instances sire daughters of high production. When that stage is reached sires can be bought and sold on their merits much as we can buy proved sires at the present time.



Sir Cornucopia Prince

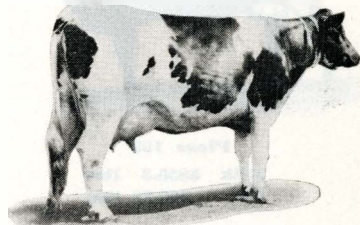
Purebred Daughters of Sir Cornucopia Prince



Leda Cornucopia 9

Milk 17178.0 lbs.

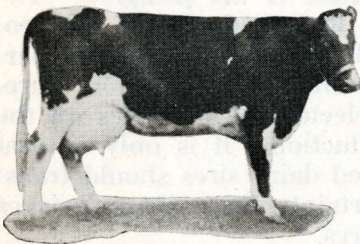
Fat 583.95 lbs.



College Cornucopia 10

Milk 16739.0 lbs.

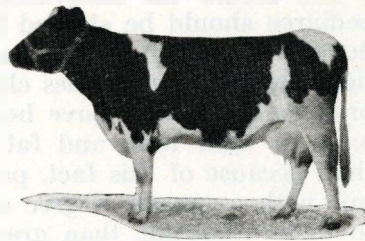
Fat 591.90 lbs.



College Belle Wayne 2d 13

Milk 18273.0 lbs.

Fat 593.73 lbs.



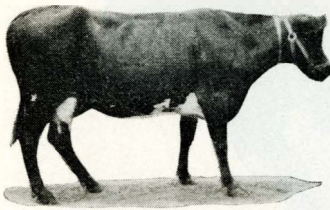
College Lady 2d 15

Milk 9490.8 lbs.

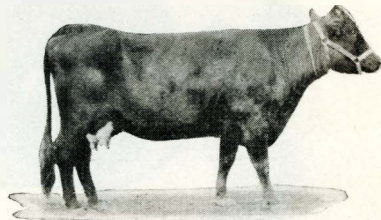
Fat 319.79 lbs.

Fig. 1

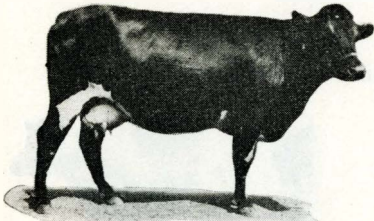
Grade Daughters of Sir Cornucopia Prince



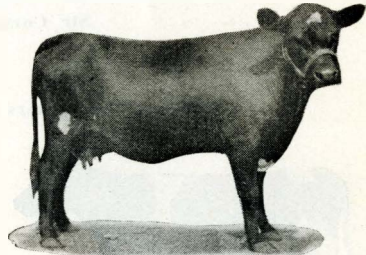
Loda 191
Milk 5954.3 lbs.
Fat 200.14 lbs.



Lotta 192
Milk 7340.2 lbs.
Fat 264.97 lbs.



Floss 193
Milk 5855.3 lbs.
Fat 226.68 lbs.



Muley 2d 194
Milk 8439.8 lbs.
Fat 320.86 lbs.

Fig. 2

The only means available for judging the prepotency of a sire before his daughters freshen is his pedigree. The pedigree should be studied from the standpoint of the production of the ancestors on both sides of the family, particularly in those females close to the sire in question. Purebred dairy animals have been selected for centuries on the basis of their milk and fat production. It is only natural that, because of this fact, purebred dairy sires should transmit with a greater degree of certainty these characteristics to their offspring, than grade sires.

Comparative milk yields of daughters of
Sir Cornucopia Prince and their dams

Pure bred dams

10705.9 lbs.

Pure bred daughters

16328.9 lbs.

Grade dams

4943.9

Grade daughters

7647.6

Ave. All dams

8145.0

Ave. All daughters

11593.6 lbs

Comparative fat yields of daughters
of Sir Cornucopia Prince and their

Pure bred dams

dams

366.1 lbs.

Pure bred daughters

541.6 lbs.

Grade dams.

208.7

Grade daughters

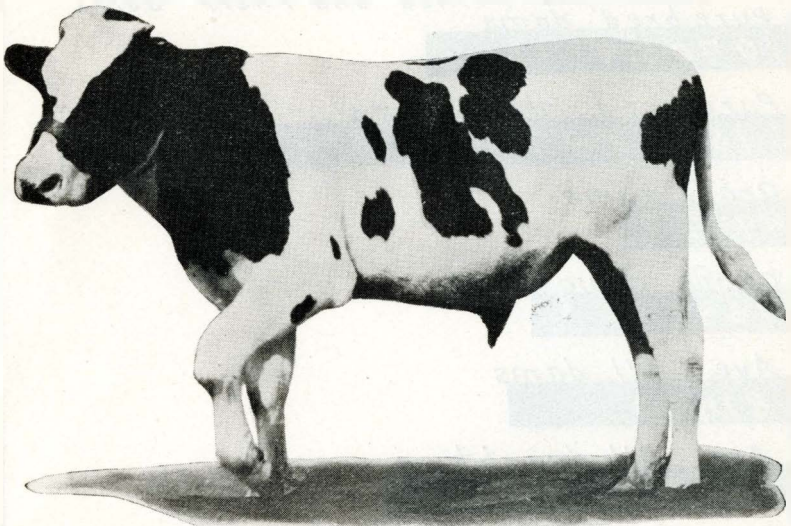
278.9

Ave. All dams

296.1

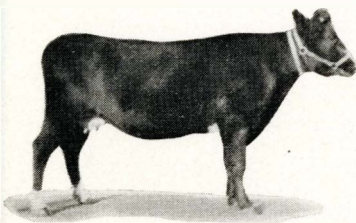
Ave. All daughters

398.3 lbs.

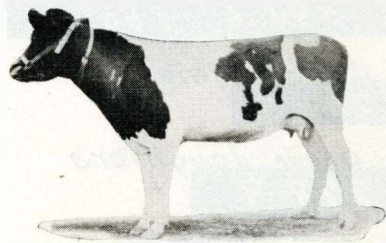


King Colantha Clothilde 2d

Grade Daughters of King Colantha Clothilde 2d



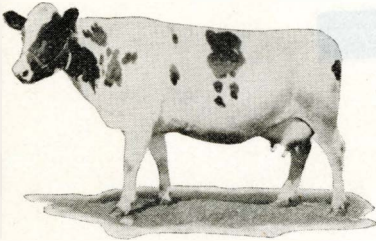
Lotta 2d 184
Milk 9598.5 lbs.
Fat 348.03 lbs.



Linnie 183
Milk 10997.5 lbs.
Fat 369.75 lbs.

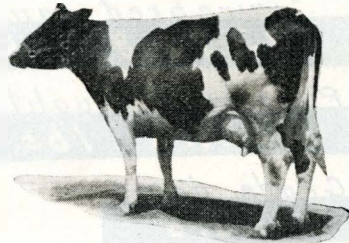
Fig. 3

Purebred Daughters of King Colantha Clothilde 2d



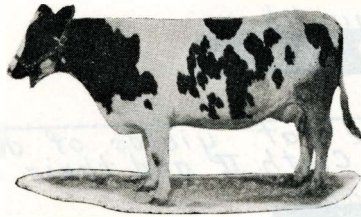
College Cornucopia 2d 20

Milk 15109.4 lbs.
Fat 459.66 lbs.



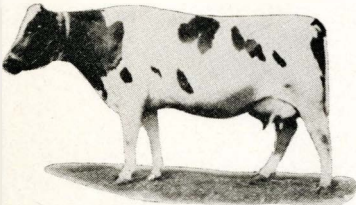
College Lady Cornucopia 2d 21

Milk 8838.8 lbs.
Fat 291.64 lbs.



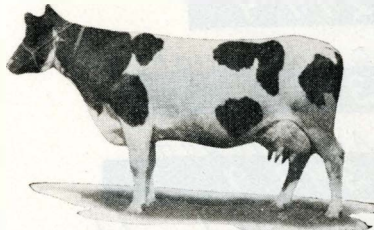
College Colantha 22

Milk 8579.3 lbs.
Fat 279.46 lbs.



College Lady 4th 23

Milk 12436.6 lbs.
Fat 402.50 lbs.



Leda Cornucopia 2d 24

Milk 13554.4 lbs.
Fat 446.95 lbs.

Comparative milk yields of daughters of
King Cot. Cloth. II. and their dams

Purebred dams

13378.8 lbs.

Purebred daughters

11521.6 lbs.

Grade dams

7263.6

Grade daughters

10124. lbs.

Ave. all dams

11340.4 lbs.

Ave. all daughters

11055.8 lbs.

Comparative fat yields of daughters
of King Cot. Cloth. II. and their dams

Purebred dams

452.2 lbs.

Purebred daughters

375.6 lbs.

Grade dams

277.4

Grade daughters

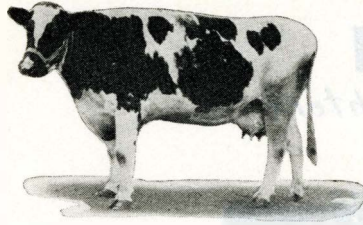
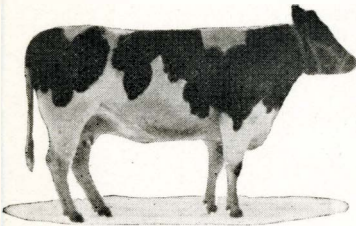
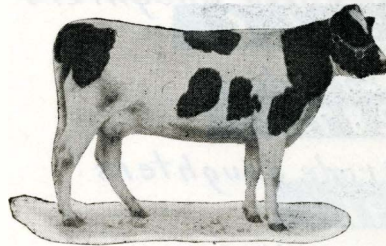
358.9

Ave. all dams

393.9

Ave. all daughters

370.

Purebred Daughter of Sir Dakota Colantha Rue Brookings**College Rue Belle 37****Milk 9487.5 lbs.****Fat 388.01 lbs.****Grade Daughters of Sir Dakota Colantha Rue Brookings****Flora 161****Milk 5908.8 lbs.****Fat 210.21 lbs.****Lead 163****Milk 4850.1 lbs.****Fat 173.05 lbs.****Fig. 5**

*Comparative milk yields of daughters of
Sir Dak. Col. Rue Brookings and their dams*

Purebred dams

12200.8 lbs.

Purebred daughters

9150.9 lbs.

Grade dams

7726.9

Grade daughters

5379.5

Ave. all dams

10411.2 lbs.

Ave all daughters

7642.3

*Comparative fat yields of daughters
of Sir Dak. Col. Rue Brookings and their
Purebred dams dams*

401.7 lbs.

Purebred daughters

326.6

Grade dams

287.3

Grade daughters

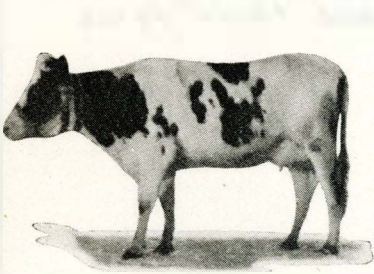
191.6

Ave. all dams

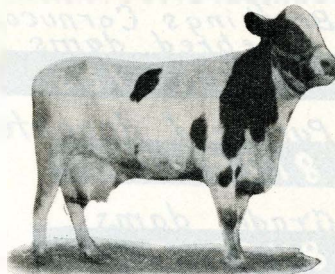
355.9 lbs.

Ave all daughters

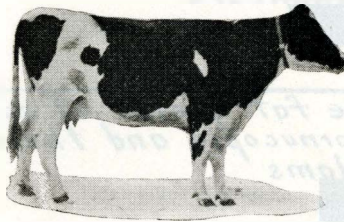
272.6

Purebred Daughters of Brookings Cornucopia**College Pride Lady 32**

Milk 7344.5 lbs.
Fat 231.96 lbs.

**College Lady 5th 29**

Milk 8895.9 lbs.
Fat 292.52 lbs.

Grade Daughter of Brookings Cornucopia**Mossy 166**

Milk 7879.5 lbs.
Fat 335.26 lbs.

Fig. 6

The first consideration in the selection of purebred dairy sires is that they come from animals with high production records to their credit. Preferably these records should be for a year rather than shorter periods. Seven and thirty day records are good, to be sure, but it is the production for a year that spells profit or loss for the dairyman. The production records of the dam and sire's dam should be given more emphasis than records of females farther removed from the sire in question. Production records of sisters, half sisters and daughters of other bulls from the same sire as the bull under consideration is also an indication of the potential prepotency of the bull.

*Comparative milk yields of daughters of
Brookings Cornucopia and their dams*

Purebred dams

9531.1bs.

Purebred daughters

8120.1bs.

Grade dams

8439.8

Grade daughters

7879.5

Ave. all dams

9167.3

Ave. all daughters

8039.9

*Comparative fat yields of daughters of
Brookings Cornucopia and their dams*

Purebred dams

336.7

Purebred daughters

262.2

Grade dams

320.8

Grade daughters

335.2

Ave. all dams

331.2

Ave. all daughters

286.5



Sir Korndyke Bess Piebe

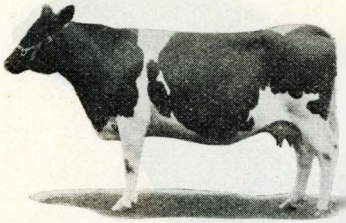
Fig. 7

Although production is all important in dairy stock, type should not be overlooked. This is particularly true in purebred stock which is sold for breeding purposes. The animal of good type is more eagerly sought than the poor type animal, even though the latter may be very good in production. However, for beginners or those raising grades, the performance at the milk pail should be given more weight in the selection of a sire than show ring records.

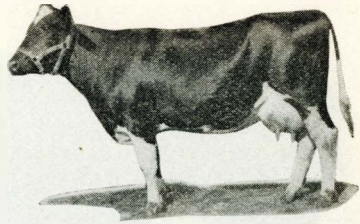
The True Test of Sires

The production and type of the daughters is the real test of the prepotency of sires. Sires of high producing daughters are not numerous, therefore when a sire has proved his merits he should be spared for the good of the industry, and kept in service to the limit of his usefulness. If dairymen would fully appreciate the value of proved sires they would no doubt put up with a few inconveniences of using them. Most farmers are crowded for barn room, and cannot keep more than one dairy sire, and as is done in nearly all cases the sire is sold at the end of two to three years of service or as soon as his daughters are old enough

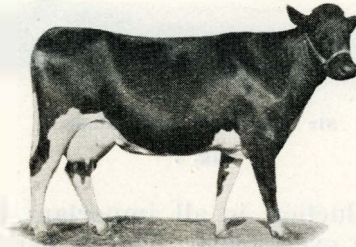
Purebred Daughters of Sir Korndyke Bess Piebe

**College Bess Colantha 40**

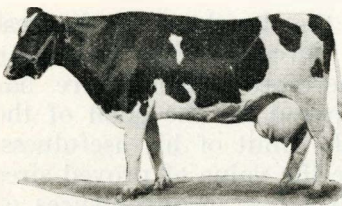
Milk 13414.0 lbs.
Fat 459.34 lbs.

**College Bess Lady 41**

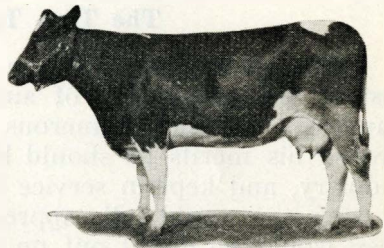
Milk 14432.0 lbs.
Fat 455.19 lbs.

**College Bess Lady Korndyke 42**

Milk 18447.1 lbs.
Fat 617.91 lbs.

**College Bess Pride 43**

Milk 17467.6 lbs.
Fat 540.55 lbs.

**College Lady Korndyke 45**

Milk 16809.0 lbs.
Fat 556.52 lbs.

*Comparative milk yields of
daughters of Sir Korndyke
Bess Piebe and their dams*

Purebred dams

9382.0 lbs.

Purebred daughters

16113.9 lbs.

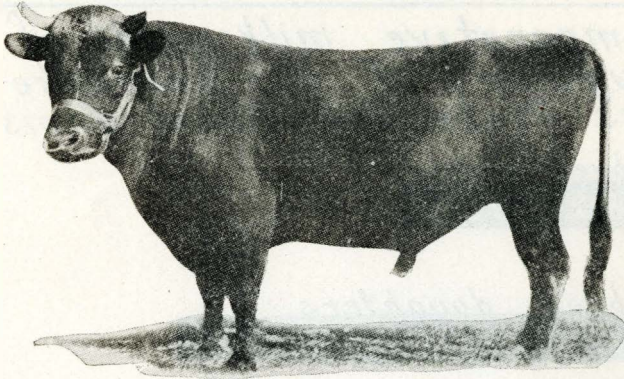
*Comparative fat yields of
daughters of Sir Korndyke Bess
Piebe and their dams*

Purebred dams

307.9 lbs

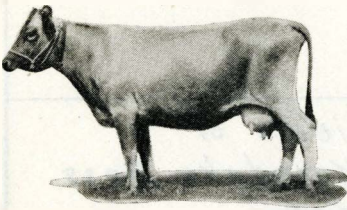
Purebred daughters

525.8 lbs.

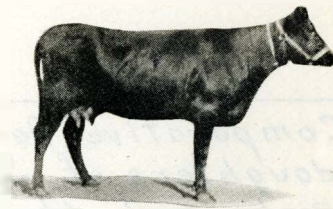


Loretta's Dakota King

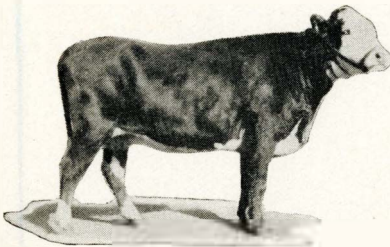
Daughters of Loretta's Dakota King



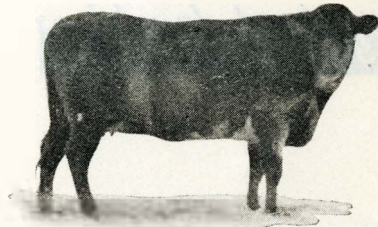
Loretta's Foliage 65
Purebred
Milk 5154.9 lbs.
Fat 255.72 lbs.



Lena 179
Grade
Milk 4388.9 lbs.
Fat 187.11 lbs.



Muley 3d 185
Grade
Milk 3716.3 lbs.
Fat 172.37 lbs.



Brindle 187
Grade
Milk 8742.5 lbs.
Fat 419.30 lbs.

Fig. 9

Comparative milk yields of daughters of
Loretta's Dakota King and their dams

Purebred dams
4917.

Purebred daughters

5154.

Grade dams

3759.

Grade daughters

5615.

Ave. all dams

4049.

Ave. all daughters

5500.

Comparative fat yields of daughters
of Loretta's Dak. King and their dams

Purebred dams

251.3

Purebred daughters

255.7

Grade dams

155.9

Grade daughters

259.5

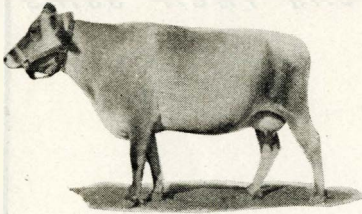
Ave. all dams

179.7

Ave all daughters

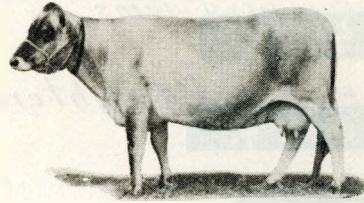
258.6

Purebred Daughters of Diploma's Foliage



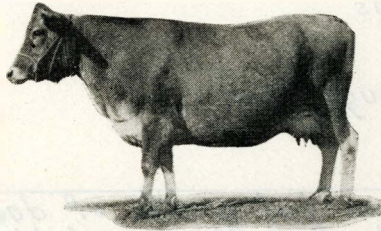
Recorder's Foliage 3d 74

**Milk 5255.2 lbs.
Fat 292.83 lbs.**



Diploma's Pioneer Belle 75

**Milk 5589. lbs.
Fat 292.08 lbs.**



Diploma's Pioneer Fern 80

**Milk 4853.6 lbs.
Fat 290.09 lbs.**

Fig. 10

to breed. A purebred sire with good production records in his pedigree should not be sold to the butcher but rather loaned or sold to another breeder until his daughters freshen and thus ascertain his merits before the bull is sacrificed. If he should prove a poor or mediocre sire no great loss has resulted, while on the other hand if he proves by the production of his daughters to be a prepotent sire his value can be capitalized. When breeders of dairy cattle have reached the point where they are using only proved sires, dairying will have made one of the greatest strides in its history. The tendency to high milk and fat production will then become fixed and dominant characters. These characters will be transmitted with such degrees of certainty that purebred will be synonymous with high production.

*Comparative milk yields of daughters
of Diplomas Foliage and their dams*

Purebred dams

5206.6

Purebred daughters

5232.7

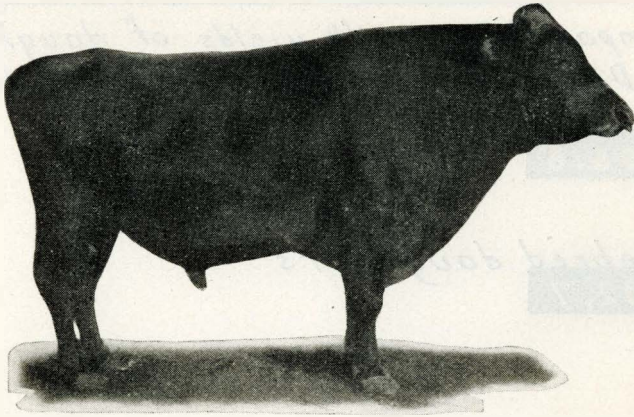
*Comparative fat yields of
daughters of Diplomas Foliage and
their dams*

Purebred dams

254.8

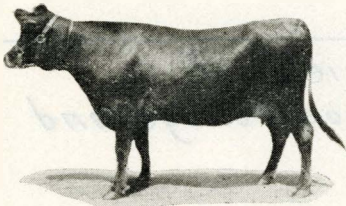
Purebred daughters

291.6



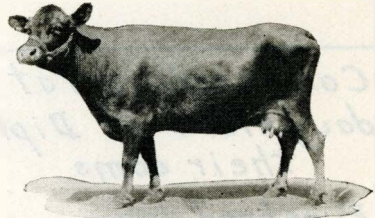
Diploma's Pioneer

Grade Daughters of Diploma's Pioneer



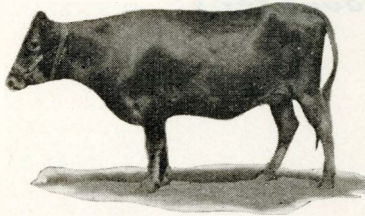
Linda 160

**Milk 4737.1 lbs.
Fat 235.28 lbs.**



Betsie 175

**Milk 4891.1 lbs.
Fat 257.59 lbs.**



Mott 168

**Milk 4569.2 lbs.
Fat 227.40 lbs.**

Fig. 11

*Comparative milk yields of daughters of
Diploma's Pioneer and their dams*

Pure bred dams

5351

Pure bred daughters

4668

Grade dams

5615

Grade daughters

4732

Ave. all dams

5510

Ave. all daughters

4706

*Comparative fat yields of daughters
of Diploma's Pioneer and their dams*

Pure bred dams

256.5

Pure bred daughters

144.4

Grade dams

259.5

Grade daughters

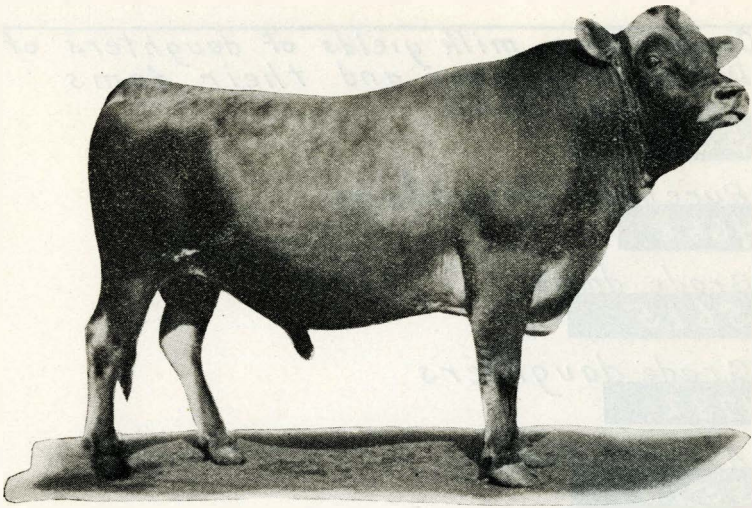
240.1

Ave. all dams

258.3

Ave. all daughters

201.8



Napoleon Fern Dale

Fig. 12

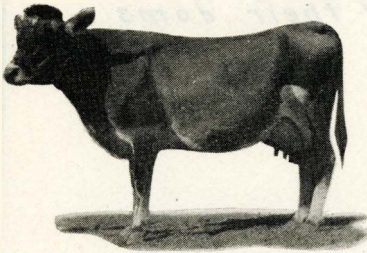
Purpose of the Bulletin

The chief purpose of this bulletin is to show in a graphical way the great difference in purebred dairy sires. The graphs, rather than tables of figures, are used in the hope that those who should be more vitally concerned about purebred sires will fully comprehend at a mere glance the difference in purebred dairy sires, and make every effort to use sires which will increase production in their herds. The graphs represent the average yearly production of all the grade and purebred daughters of each bull. The records made in immature form were converted to the mature basis, by using the following percentages.

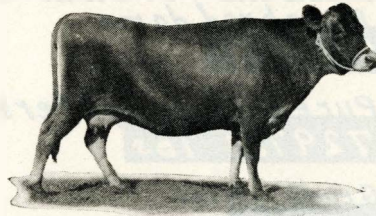
Yearlings	70	percent	of	mature	production
2-year-olds	80	"	"	"	"
3-year-olds	85	"	"	"	"
4-year-olds	95	"	"	"	"

Where one record only occurs this was computed to the mature basis and taken as the average yearly record for that animal. When the cow had a number of lactations those made in immature form were computed to the mature basis, and the average of the total yearly records taken as the average production record of the cow in question.

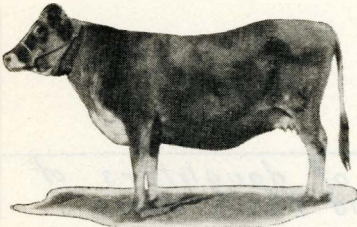
Purebred Daughters of Napoleon Fern Dale



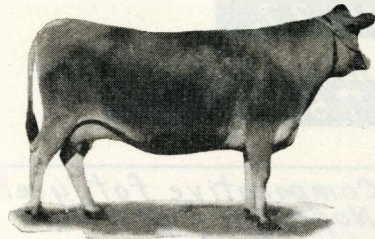
College Fern Belle 82
Milk 9097.4 lbs.
Fat 511.75 lbs.



College Fern Recorder 83
Milk 7480.8 lbs.
Fat 465.36 lbs.

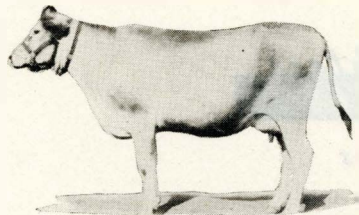


College Fern Foliage 84
Milk 5828.9 lbs.
Fat 316.61 lbs.



College Fern Queen 86
Milk 6784.5 lbs.
Fat 387.42 lbs.

Grade Daughter



Mona 158
Milk 9082.3 lbs.
Fat 500.83 lbs.

Fig. 13

*Comparative milk yields of daughters of
Napoleon Fern Dale and their dams*

Purebred dams

5059.9

Purebred daughters

7297.9 lbs.

Grade dams

4569.2

Grade daughters

9082.3

Ave. all dams

4937.

Ave. all daughters

7654.8

*Comparative fat yields of daughters of
Napoleon Fern Dale and their dams*

Purebred dams

271.0

Purebred daughters

431.2 lbs.

Grade dams

227.4

Grade daughters

500.8 lbs.

Ave. all dams

260.1

Ave. all daughters

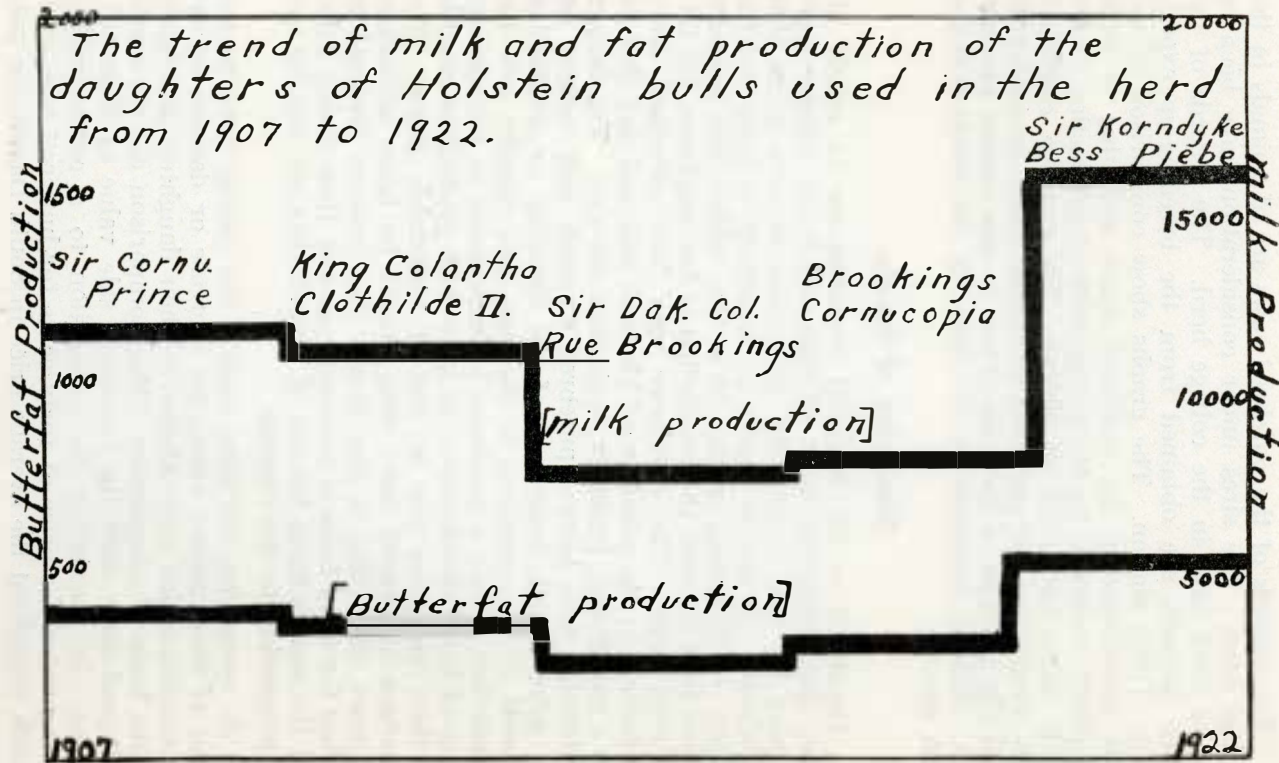
436.3 lbs.

The records of the purebred cows are of animals in the college herd. The sires under consideration have been in use as herd sires in the college herd. The records of the grade animals are obtained from the breeding-up experiment of this station. The graphs show comparison of the milk production of the purebred dams with that of their daughters, followed by the comparison of production of the grade dams and their daughters. The average combined milk production for purebred and grade dams as compared with the average of their daughters is also shown graphically. Similar comparisons are made of fat production for each sire.

Discussion of Results

Inasmuch as the financial consideration in nearly all cases determines the kind of bull which the farmer buys it may be well to consider the value of sires from that standpoint. It should hardly be necessary to point out the fallacy of investing money in a sire which will decrease rather than increase the production in his daughters, yet this is often done. The purchaser may have exercised every precaution in the selection of his herd bull and find that he has a counterfeit. However, such cases are rare. The farmer or breeder who buys a purebred or grade bull entirely on the price asked, regardless of the breeding or production records of his ancestors is the one who usually gets the counterfeit. Such a purchase is inexcusable in our present stage of breed development, as bulls with production records in their pedigrees can be had at reasonable prices. The purchase of proved dairy sires should be taken advantage of more often than is now done. The expense involved in caring for aged bulls is somewhat greater than young bulls, but the results from the use of proved sires are usually out of proportion to the expense.

In comparing the sires used in the college herd on the basis of their money value, the increase or decrease in fat production which they effected in their daughters was taken as the basis of comparison. This comparison did not credit the good sires with the increased sale value of their offspring. In converting the production to a corresponding money value the price of forty cents for butterfat was used, which was about the average price in South Dakota the past year.



On this basis the purebred daughters of Sir Cornucopia Prince produced, on an average per year, 175.58 pounds of butterfat more than their dams, valued at \$70.23. In a herd of twenty cows, assuming that one-half of the calves were females, his money value would be \$702.30 each year. A sire which is properly fed and cared for should be fit for service for 10 to 12 years. What is a bull of this prepotency worth?

As the production of the daughters of the various bulls is compared with that of their dams it must be clear that the initial financial consideration in purchasing a sire should not be the deciding factor. Comparing the value of Sir Cornucopia Prince, which was probably the best bull ever owned at State College, with Sir Dakota Colantha Rue Brookings, the poorest bull, a dairyman could well afford to pay what might be considered an exorbitant price for the former while the latter would be expensive at any price.

Each purebred daughter of Sir Cornucopia Prince was worth, as a butterfat producer, \$70.23 more than her dam. The purebred daughters of Sir Dakota Colantha Rue Brookings produced, on an average per year, 75.04 pounds of butterfat less than their respective dams. The difference, therefore, in fat production between the daughters and dams of the two bulls was 250.62 pounds of fat per year. The money value from the standpoint of fat production only, between the two bulls, was \$100.25 for each purebred daughter sired. That is, each daughter sired by Sir Cornucopia Prince was worth \$100.25 more per year than each daughter of Sir Dakota Colantha Rue Brookings for fat production.

Only two typical cases have been considered. Similar comparisons can be made between the other sires of the same and other breeds with corresponding results. In this comparison no credit is given for increased sale value of offspring of the better sire which may duplicate or in many cases exceed the difference in butterfat value. These data should answer the question, "What can I afford to pay for my next sire?"

In the graph showing the trend of milk and fat production for a period of 15 years it should be borne in mind that the average production of the daughters of Sir Korn-dyke Bess Piebe is for purebred daughters only. When this

production is compared to that of the purebred daughters of Sir Cornucopia Prince the two sires are about equally prepotent in transmitting high milk and fat production.

Dairymen will do well to watch carefully the cost of producing milk. As the number and average production of dairy cows in the United States increase, economy of production will be a big factor in maintaining the profits of the dairy industry at its present high level. Increased production per cow means more economical production. No single factor will do more to increase economy of production than the **good purebred sire**.