

### Grading of Janubi Cattle of South Iraq with Friesian Bulls

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RECORDS of crossbred cows containing  $\frac{1}{8}, \frac{1}{4}, \frac{3}{8}$  and  $\frac{15}{16}$  degree of Friesian blood with Janubi cattle were explored for a possible deterioration of cattle for dairy characters in South Iraq. The findings revealed that there was a marked improvement in milk yield, lactation period and dry period up to  $\frac{3}{8}$  contribution of blood by Friesian. There was tendency of deterioration in these characters beyond this limit of blood contributions. As regards the calving intervals, it was increased at  $\frac{3}{8}$  level perhaps due to small number of records available of this grade of crossbred cows, but consistently decreased beyond that level. When the total crossbred animals were grouped irrespective of blood levels from Friesian, a great deal of improvement in all characters is observed. The South Iraqi Agricultural Stations seem to be more suitable for adequate management of such animals. The values of all these characters seem to be superior to many figures reported from other countries and other stations *e.g.* Baghdad on such crosses of Friesians with local cattle. Hence it can safely be recommended that large scale crossbreeding operations will be advantageous to this area of Iraq.

Friesian cattle are well known for transmitting the dairy merit to their crosses with native cattle in the tropics and subtropics. This ability of Friesian has aroused interest for exploitation of her economic characters on a large scale in these regions of the world. As a result many countries have developed sound dairy industry with substantial improvement in the local poor yielding cattle. However, there are yet many conflicting reports on the performance of the crosses when the Friesian blood exceeds 50 percent. Maule (1953) in Phillipines observed decrease in milk yields by such crosses when Friesian blood was increased beyond 50 percent in cross with Nilor cattle. EL-Itriby and Asker (1958) on the other hand, did not find any adverse effect with Egyptian crosses. They further reported that crosses of Friesian with Egyptian cattle were superior to those with Iraqi local cattle. Mahadevan (1956) reported lower yields of milk in such crosses of Friesians with Sinhala cows of Ceylon. Asker *et al.* (1965 a and b) examined the records of such crosses with native Iraqi cows of Baghdad, Agricultural Research Station, Abu Graib. They reported a definite deterioration in performance of crosses having  $\frac{3}{8}$  blood of Friesian. They observed this effect in milk yield, lactation period, dry

period and calving interval of crossbred cows. Thus, with such contradictory reports it was considered feasible to explore the records of Agricultural Stations in Southern parts of Iraq and to confirm such effect to check its continuity in graded cattle.

#### Material and Methods

Records of crossbred cows of Friesian and Janubi were received from Agricultural Stations of Basrah, Emara and Baghdad. In all crossing operations pure Friesian bulls were used. The crossbred cows were differentiated and grouped according to the intensity of Friesian blood in them.

- i) 10 crossbred cows (50 : 50 or  $\frac{1}{2}$ ) giving 50, 50, 46 and 44 milk records, lactation periods, dry periods and calving intervals respectively.
- ii) 10 crossbred cows (75 : 25 or  $\frac{3}{4}$ ) with a total number of 45, 45, 35, and 28 milk records, lactation periods, dry periods and calving intervals respectively.
- iii) 13 crossbred cows of (87.5 : 12.5 or  $\frac{7}{8}$ ) 50, 50, 45 and 44 milk records, lactation periods, dry periods and calving intervals respectively.
- iv) 13 crossbred cows (97.5 : 2.5 or 15/16) with 38, 38, 37 and 37 milk records, lactation periods, dry periods and calving intervals respectively.
- v) 74 non-identified grades of crossbred cows (inclusive of all grades) giving a total of 277 lactations. These records were statistically analysed for mean and standard deviation by the methods given by Snedecor (1956).

#### Results and Discussion

##### Milk yields

As evident from Table 1, the milk yield rose from  $2651 \pm 850$  to  $2821 \pm 952$  kg/lactation when the Friesian blood increased from  $\frac{1}{2}$  to  $\frac{3}{4}$ . Further increase in Friesian caused deterioration in milk production which

TABLE 1. Mean and standard deviation for milk production (kg) of different groups of crossbred (F  $\times$  J).

Groups	Number of lactations	Mean	S.D.
1/2	50	2651	850
3/4	45	2821	952
7/8	50	2546	743
15/16	38	2380	510

went down to  $2546 \pm 743$  in  $\frac{7}{8}$  and  $2380 \pm 510$  kg in 15/16 grades of crossbred cows. These results are not in line with those of Maule (1953) and Asker *et al.* (1965 a and b) who reported decreased milk yields in crosses having more than  $\frac{1}{2}$  Friesian blood. However, the yield of crossbred cows of more than  $75 (\frac{3}{4})$  of blood from Friesian went down. It is clear that the milk yields are better up to  $\frac{3}{4}$  crossing intensity with Friesian and may become economical to go up to this extent. Findings of El-Itriby and Asker (1958) seem to be limited to  $\frac{3}{4}$  intensity of Friesian blood admixture because they did not, like in the present studies, find any reduction in milk yield in Egyptian cattle when crossed with Friesian up to this level. This might also be due to superior germplasm of Egyptian native cattle to these in Iraq.

#### Lactation period

The values are presented in Table 2. The lactation period increases from  $277 \pm 59$  to  $295 \pm 33$  days. When Friesian blood increases in the crosses from  $\frac{1}{2}$  to  $\frac{3}{4}$ . There is a small decrease ( $286 \pm 28$ ) at  $\frac{7}{8}$  level and it increases to  $289 \pm 26$  again in 15/16 grade crossbred cows. If this tendency is assumed then, the lactation period may remain below that of  $\frac{3}{4}$  blood containing groups. As the lactation period is positively correlated with milk yield so it becomes an important economic factor in the grading of native cattle. These results hence do not agree with those of Asker *et al.* (1965 a and b) who reported a rapid fall in lactation period of cattle when Friesian blood contribution was raised from  $\frac{1}{2}$  to  $\frac{3}{4}$ . It is thus confirmed that increasing imported blood beyond  $\frac{3}{4}$  may reduce the lactation period of crossbred cows.

TABLE 2. Mean and standard deviation for lactation period (days) of different groups of crossbred (F  $\times$  J)

Groups	Number of lactation periods	Mean	S.D.
$\frac{1}{2}$	50	277	59
$\frac{3}{4}$	45	295	33
$\frac{7}{8}$	50	286	28
15/16	38	289	26

#### Dry period

Mean and standard deviation of dry periods observed, show (Table 3) a reduction from  $129 \pm 81$  to  $122 \pm 64$  days in  $\frac{1}{2}$  to  $\frac{3}{4}$  blood transmitted groups. It took a rise to  $130 \pm 89$  in  $\frac{7}{8}$  crossbred cows and then went low to

108  $\pm$  76 in 15/16 grade. The figures reported by Asker *et al.* (1965 a and b) were higher for  $\frac{1}{2}$  and  $\frac{3}{4}$  as compared to those found in the present study. However, the figures quoted by El-Itriby and Asker (1958) on crosses of Friesian with Egyptian cattle are well in line with the present results. It therefore, appears that crosses in South Iraq are equally good in combining with Friesian as Egyptian native cattle.

TABLE 3. Mean and standard deviation for dry period (days) on different groups of crossbred (F  $\times$  J).

Groups	Number of dry periods	Mean (Day)	S.D.
1/2	46	129	81
3/4	35	122	64
7/8	45	130	89
15/16	37	108	76

#### Calving intervals

As apparent from Table 4, the intervals were 441  $\pm$  73, 467  $\pm$  66, 426  $\pm$  122 and 423  $\pm$  77 for  $\frac{1}{2}$ ,  $\frac{3}{4}$ ,  $\frac{7}{8}$  and 15/16 grades of crossbred cows respectively. The figures show a sudden jump in  $\frac{3}{4}$  which is not explainable. Beyond  $\frac{3}{4}$  ratio of contribution of blood the calving intervals decrease consistently. The sudden rise at  $\frac{3}{4}$  levels, however, can be due to less number of animals or calving intervals examined in the present study. The large number of records if examined may modify these figures and could lie in the decreasing order for a general statement that calving intervals are not affected by increasing blood of Friesian beyond  $\frac{1}{2}$ .

TABLE 4. Mean and standard deviation for calving intervals (days) on different groups of crossbred (F  $\times$  J)

Group	Number of calving intervals	Mean days	$\pm$ S.D.
1/2	44	441	73
3/4	28	467	66
7/8	44	426	122
15/16	37	423	77

Gestation period, dry period, calving intervals milk yield and lactation period in indiscriminate groups of all grades put together show (Table 5) that all the economic characters of dairy merit are improved by cross breeding Friesian with Janubi cattle in South Iraq irrespective of degree of blood concentration of Friesian. The over all picture appears to be in favour of crossbreeding program of local cattle with Friesian in this part of Iraq with advantage. There is no fear of deterioration of crosses with increasing Friesian blood up to  $\frac{3}{4}$  and beyond this, results have to be watched.

TABLE 5. Mean and standard deviation for gestation period, dry period, calving intervals, milk production and lactation period of crossbred (F × J).

Item	Number of observation	Mean	S.D.
Gestation period	169	274	6
Dry period. . .	278	121	66
Calving intervals .	276	413	78
Milk production .	277	2639	634
Lactation period	277	285	41

The non-identified grades of crosses between Friesian with Janubi cattle as shown in Table 5, almost similar results to those crosses of  $\frac{1}{2}$  blood in all the characters studied.

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## تدرج الأبقار الجنوبية في جنوب العراق باستعمال الذكور الفريزيان

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استعملت سجلات أبقار مدرجة من مزروع وزارة الزراعة قسم الانتاج الحيواني بأبو غريب والعمارة والبصرة بالعراق . حلت سجلات خاصة لأبقار مدرجة من الجنوبي باستعمال طلائق فريزيان وكانت درجة التدرج كالتالي  $\frac{10}{16}$  ،  $\frac{7}{8}$  ،  $\frac{5}{4}$  ،  $\frac{3}{2}$  ، أثبتت هذه الدراسة أن هناك تحسن ملحوظ في ناتج الحليب موسم الحليب وكذلك فترة الجفاف حتى تدرج  $\frac{3}{4}$  فريزيان . أما بالنسبة للفترة بين ولادتين فظهر أنها زادت عند مستوى  $\frac{3}{4}$  فريزيان .

ومنما حلت السجلات دون النظر الى درجة التدرج ظهر تحسن في جميع الصفات التي درست وهي ناتج الحليب طول موسم الحليب وفترة الجفاف وكذلك الفترة بين ولادتين .

من ذلك يمكن التوصية بضرورة تدرج الأبقار الجنوبي العراقية بواسطة طلائق مستوردة من الفريزيان النقى ، وذلك لتحسين الصفات حتى مستوى  $\frac{3}{4}$  من دم الفريزيان مما يتطلب استعمال طلائق فريزيان نقية باستمرار واستبدالها بالسائل المنوي المجمد بعد استيراده من المزارع ذات المستوى العالي من الانتاج من الخارج . ولضمان عدم حدوث تربية أقارب شديدة إذا استعملت نفس الطلائق في الأجيال المتتالية . واستعمال السائل المنوي المجمد يفتح المجال لإعادة المقارنة من جديد لمختلف التدرجات السابق أجزاؤها أو لأكثر من ذلك من دماء الفريزيان عن طريق السائل المنوي المجمد .