

Assessing Herd Performance in Relation to Replacement Rearing

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Replacement rearing on many farms is often looked upon as “doing the chores” because at that given point in time, those animals are not making money for the dairy enterprise. In the milking herd, milk production, incidence of mastitis and conception rates are much more visible and readily monitored whereas growth rates, mortality, colostrum management, etc. in the replacement heifers require extra time and effort from which monetary reward is not seen for two years or more. The performance of the future genetic stock of the farm must be monitored and evaluated as is any other area of dairy management if their true potential for milk production and reproductive performance are to be realized.

Replacement rearing involves most of the general herd health and production control programs instituted for the milking herd, i.e., nutrition, reproduction, disease control (vaccinations), ventilation, calving management, parasite control and even mastitis prevention, as well as more specific management areas such as colostrum management, pinkeye prevention and treatment of calf related diseases.

Information that is analyzed and evaluated is usually generated from records such as the farm’s daily log, individual calf health records or DHIA.

The major objectives of a calf rearing program include:

- a) improving herd genetic level with yearly increases of >100 lbs. milk (projected ME 305 days) for first calf heifers over first lactation heifers of the previous year or within 400 lbs. milk (projected ME 305 days) of second and later lactations.
- b) rearing costs should be justified economically; otherwise commercial heifers should be purchased with emphasis on genetic expectancy, age at calving, body weight, conformation, acclimation, health status and costs.
- c) 80% of female calves born should survive and calve at 24 months-of-age with a pelvic height of 56” and a post-calving weight of 1150 lb.
- d) rearing replacement only if milk production of herd is above the state average. Dairy men with below average milk production should use their management effort to increase production rather than diluting it with a calf rearing program.

The following are some of the important heifer raising management areas that need to be monitored and evaluated periodically.

1. Calving area statistics

		Goals
a) Calf mortality <24 hours	Heifers	< 8%
	Cows	<6%
b) Incidence of dystocia	Heifers	<20%
	Cows	<10%
c) Incidence of abortions (>120d. gestation)		< 2%
d) Incidence of heifers with blind quarter(s)		<.5%
e) Incidence of heifers with mastitis		<5%
f) Incidence of colostrum deprived calves (Total protein <5.3g/dl)		< 5%

This information can be generated monthly or quarterly by reviewing the daily log or DHIA records (Tables 2, 3 and 4) and by monitoring the serum total protein values of calves between 24 hours and 2 weeks-of-age.

Management factors that are monitored by this information include nutrition of 1st calf heifers and dry cows, bull selection, vaccination program, environmental management of heifers, calving personnel and colostrum management.

2. Heifer Mortality, Morbidity and Culling

		Goals
a) Mortality	60 days	<6%
	2-6 months	<2%
	6-24 months	<2%
b) Morbidity		<20% treated for diarrhea <10% treated for pneumonia
c) Culling		<2% for reproduction <2% for disease.

Evaluation can be made from the daily log, individual calf health charts, DHIA, and/or veterinary herd health records.

3. Heifer Growth Rates (Table 1)

		Goal
Weaning	age	2 months
	weight	143 lbs.
	height	33”
5 months (Brucella vaccination)	weight	320 lbs.
	height	41”
10 months	weight	575 lbs.
	height	49”

Breeding	age	14 months
	weight	750 lbs.
	height	51"
Calving (post-partum)	age	24 months
	weight	1150 lbs.
	height	56"

Withers height can be taken at the time of weighing and charted on the growth curve (Table 1) or the heifers can be condition scored when weighed. A condition score of 2.5-3.0 is optimal throughout the growing period. Heifers that are fat prepuberal will not produce as many milk alveoli in the mammary gland and thus will not reach their genetic potential for milk production.

Because of a variable birth weight, a goal of < 30% of calves should be below the recommended weight at weaning and < 15% below standard weight at all other ages.

Management factors evaluated included nutrition, parasite control, feed bunk management, disease control and animal density.

Questions & Answers:

Question:

Answer: Good point. We have taken a lot of blood samples from these calves. And if they're over 8 there's a good chance that calf's going to die sometime down the road.

Question: Is it possible to have a low percentage of colostrum-deprived calves?

Answer: Most of our good farms are getting less than 2 percent calves colostrum-deprived. And if those calves haven't been observed to suckle and it won't suckle the bottle,

4. Genetic Improvement

There are two methods by which this can be measured.

- a) Projected ME 305 Day Milk (General Management Information) from the DHIA summary sheet. This has been previously described under Assessing Herd Performance in Relation to Nutrition, Genetics, Culling Dry Cows and Condition Scoring (#5).
- b) P.D. \$ Service Sires (General Management Information) from the DHIA summary sheet.
Goal > \$100

5. Reproduction

Percent of possible breedings that were serviced >80%
First service conception rate >65%

- 6. Percentage of milk check going for replacement rearing or replacement purchases.
<15%

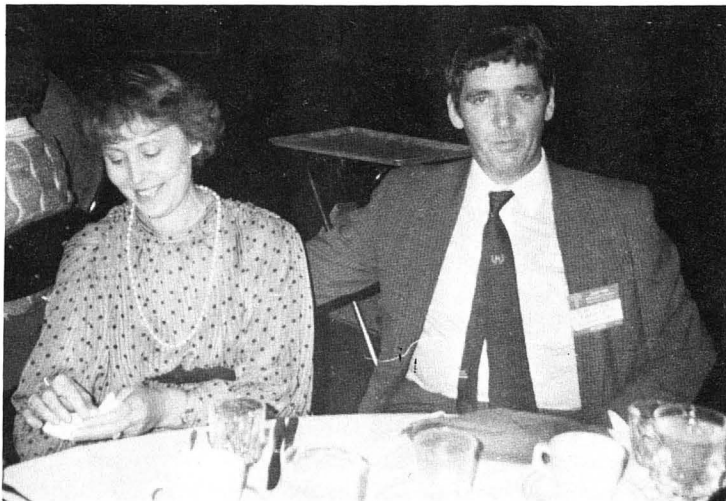
This figure must be generated from the farm balance sheet.

they will force feed it.

Question: What percentage of cows have good quality colostrum?

Answer: It's a seasonal thing. In the summer time over 80 percent of the cows have poor quality colostrum. In the winter time around 40 percent have good quality. So it is less than half. And older cows, of course have better quality colostrum than heifers.

Colleagues from England



Dr. and Mrs. Roger Eddy

Dr. Eddy is a member of the British Cattle Veterinary Association and a contact person for the World Association for Buiatrics.