

Calf and Heifer Management #2

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From Weaning to Breeding



- Heifers should be moved to a group pen
- Start feeding calf grower diet
 - ✓ Calf grower can be fed, *ad libitum*,
.....
 - ✓ Feeding silages is not advisable
 - ✓ Provide good quality hay
 - ✓ Do not forget clean and adequate water
 - ✓

From Weaning to Breeding

- Maintain adequate growth to ensure breeding at desired age
- Ability to control gain during this time is the key to success
- Poor feeding programs will result in:
 - ✓ Low daily gain
.....
 - ✓ Delay in breeding
 - ✓ Delay in first calving
- Over feeding will result in:
 - ✓ Excessive daily gain
.....

Managing Heifer Development

Goals:

- Provide replacements for cows leaving the herd
- Improve genetics and production
- Raise heifers efficiently and economically

- I. -----
- II. Body size at calving
- III. Controlling Expense – feed and labor
- IV. Ease of care
- V. Optimizing Health

Age at calving Body size at calving



- The recommended goal for dairy replacement Holstein heifers:
 - Calving at ----- months of age
 - Post-calving BW of -----

Why 1250 lb After Calving?

- Data collected from 1980-1984:
 - Heifers calving between 1195-1250 lb had the highest milk yield in the first lactation
 - Milk yield drastically declined for heifers below 1100 lb.
 - 1st lactating cows that weighed 1250 lb produced 1775 lb more milk than those weighed 900 lb
 - had a greater impact on milk yield than did -----

Keown & Everett, 1986

Breed Based on Age or Weight?



50,000 DHIA records:

Question: relationship between age at 1st calving, post-calving BW and first lactation milk yield

Findings:

1. Optimum milk yield → post-calving wt. = 1200-1300 lb
2. Weak correlation between milk yield and calving age
3. Reduced milk yield → post-calving wt > 1300

1200-1250 post-calving weight supports optimum 1st lactation milk yield



Over-conditioned heifers do not perform well and have reduced milk yield

Remember:

1200-1250 lb. Post-calving weight translates to a 1300-1350 lb pre-calving weight

Should We Forget about Age?

Calving age, at when heifers reaches to 1250, is important

Late calving translates to less productive life

Late calving translates to larger expenses

\$\$ → rearing heifers (birth to calving)= \$1800 - \$2000

\$\$ → The earlier the lactation occurs, the sooner the initial investment will be returned

Check These Numbers ☹

Delayed calving beyond 24 months



↑ rearing costs = -----/mo/heifer

Effect of age at first calving on number of required replacements for a 100-cow herd

Cull Rate (%)	-----Age at first calving-----			
	22	24	26	28
20	40	44	48	51
30	61	66	72	77

Looper & Bethard, 2000; Smith, 1999)

What about earlier calving age?

Calving before and at 21 months is risky due to problems with rapid growth



• Since BW has a major affect on 1st lactation milk yield, calving @ 21 months may translates to:

- ✓ ~ 3.0 lb/day gain from birth to calving
- ✓ Age at breeding must be reduced to 11-12 months
- ✓ Excessive pre-pubertal weight gain



What about earlier calving age?

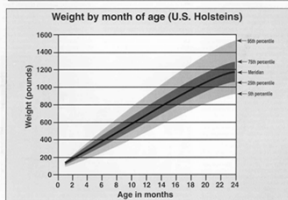
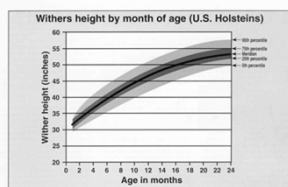
BW gain of > ----- lb/day may be detrimental to mammary growth and development and affects the subsequent lactation performance. Sejrnsen et al., 1982

Attaining 1250 lb in 24 Months

- ADG of ----- from birth to pre-calving (~1350 lb.)
- Sexual maturity of Holstein heifers begins at ----- (around 9-10 months of age)

Attaining 1250 lb in 24 Months

- Maximum lb gain/day = ----- lb
- Achieve ----- lb & 48" height at 14 months of age
- ADG < 1.5 lb is unacceptable and not economical
- ADG > 2.0 lb is unacceptable and detrimental to milk yield



Recommended ranges of BW and wither height for Holstein heifers

Age (mo.)	Body weight (lbs.)	Wither height (inches)
1	130-135	31.7-33.2
3	226-244	35.2-37.1
5	323-354	38.4-40.4
7	420-463	41.1-43.3
8	469-518	42.3-44.5
9	518-572	43.4-44.5
11	615-682	45.4-47.6
13	712-791	47.1-49.3
14	761-864	47.8-50.0
16	858-956	49.0-51.2
18	956-1065	50.2-52.1
20	1053-1174	51.0-53.0
22	1150-1284	51.7-55.0
24	1247-1393	52.2-56.5

Adapted from Looer and Bethard
The progressive Dairyman

Accelerated Heifer growth

- Feeding Higher amounts of properly formulated (30% CP) milk replacers
- Time: during the first four to six weeks of life; 2 lb of dry milk replacer
- ADG 2.0-2.2 lbs/Day



Fig 46-1. Heifer weight can be accurately estimated by measuring heart girth using a weight tape (Courtesy of Iowa State University)

Breeding Age Heifers

- **Breeding age (13-14 months)**
 - **Body condition score**
 - **Wither height measurement**
 - **Balanced ration: ~----- lb DM**

CP: ----- %DM	TDN: ----- DM
ADF: 32% DM	RUP: 20% of CP

- **Make sure that heifers do not loose BW and body condition at this stage.**

Parasite Control

- Heifers with heavy parasite loads decreases feed efficiency and may develop diarrhea and anemia
- Bedded manure packs should be cleaned often and thoroughly
- Coccidiosis is common internal parasite
 - Oocytes are ingested and penetrate gut of heifer
 - Results in impaired feed efficiency and diarrhea
 - Ionophores prevent and control coccidiosis

Tyler and Ensminger

Breeding and estrous Synchronization

- **Start breeding at 13 months of age**
 - This provides 3 insemination opportunities by 15 months of age
- **Implement a strong visual observation schedule for detecting heat**
- **Implement a systematic breeding program (DO NOT USE OvSynch !!)**
- **Keep a good record of pregnancy and conception rates**
 - Acceptable CR = 65% CR goal = >80%

