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Dairy guidelines

EXTENSION DIVISION VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY BLACKSBURG, VIRGINIA

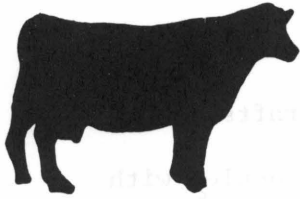
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THE COUNTER SLOPE HEIFER REARING SYSTEM

BLACKSBURG, VIRGINIA
by



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The critical time for a baby calf is from birth to weaning. Many heifers are neglected after this time which results in slow growth, late breedings, and a high cost when placed in the milking herd.

According to a study at Cornell University, it costs \$850 to rear a replacement heifer to the average freshening age of 28 months. This is approximately \$30 per month. By doing a good job, you can freshen them out at 24 months of age and save \$120 (4 mo. x \$30). The sooner she has calved and is in production, the sooner you can collect on your investment and clip a coupon if she has a heifer calf.

A system of housing for heifer replacements has been thoroughly tested by Virginia dairymen. It incorporates 1) self-cleaning, sloped, concrete floors, 2) high density animal confinement, 3) group pens, 4) 70% roofed area with the open side facing the southeast to utilize winter sun to provide warmth of animals and drying of the floor, 5) efficiency of feeding and cleaning, and 6) an environment conducive to animal growth and health.

The design concept is shown in the various figures. Heifers should be grouped by size. Pens are normally 12-feet in width. A 24-foot pen can be developed for older heifers by taking out a partition. A 4-foot high solid partition between pens reduces drafts. Some dairymen rear their pre-weaned

calves at one end. When this is done, the partition should go to the roof to separate them from the older heifers and further control drafts.

Concrete floors slope 1 inch in 12 inches. This slope, coupled with high animal density, causes the manure to work down the sloped concrete floor by hoof action to the litter alley, which can be scraped with a tractor and blade to one end of the building. Gates confine the animals in the pens during the alley cleaning. Twice weekly cleaning is sufficient. The manure may be pushed and loaded with a tractor and bucket loader into a spreader for hauling.

Bedding is not necessary for the growth and health of older animals. They will become manure covered on their sides if bedding is not used but growth will not be affected. The heifers clean-up in dry weather and when turned to pasture. The use of bedding is therefore optional, depending upon personal preference. The use of bedding does increase the labor requirement of putting it in, as well as removing it with the manure. However, bedding must be used if pre-weaned calves are reared in this facility.

Animals should be pen-grouped by size. Up to 16 heifers under 6 months of age may be grouped in a 12-foot pen.

Labor requirements are minimal. A 72-foot structure with 6 pens requires about 20 minutes per day for feeding a complete ration by mixer wagon and 2 hours per week for alley scraping (twice weekly).

Complete Feeds

This facility offers great flexibility in feeding. Any combination of hay, silage, and concentrates may be fed. The use of a complete ration and mixer wagon is most saving of labor; however, one ration is not suggested for

animals of all ages. Heifers from weaning at 6 weeks to 6 months of age require complete rations containing 14 to 16% protein and 16 to 20% crude fiber (on a dry matter basis). This may be the same ration fed the lactating cows.

From 6 to 12 months of age, the protein may be reduced to 12 to 14% and the fiber increased to 24 to 28%. Older heifers will get too fat on the first ration.

Minerals and Water

A livestock mineral supplement and a trace mineral salt should be force fed in the complete ration or the concentrate when the animals are confined in the counter-slope facility.

Water is an essential nutrient for all mammals and should be available at all times. A watering cup should be placed in each pen as indicated; this location allows the gate to close the pen without interference when cleaning. Effect of spilled water is minimal with this arrangement.

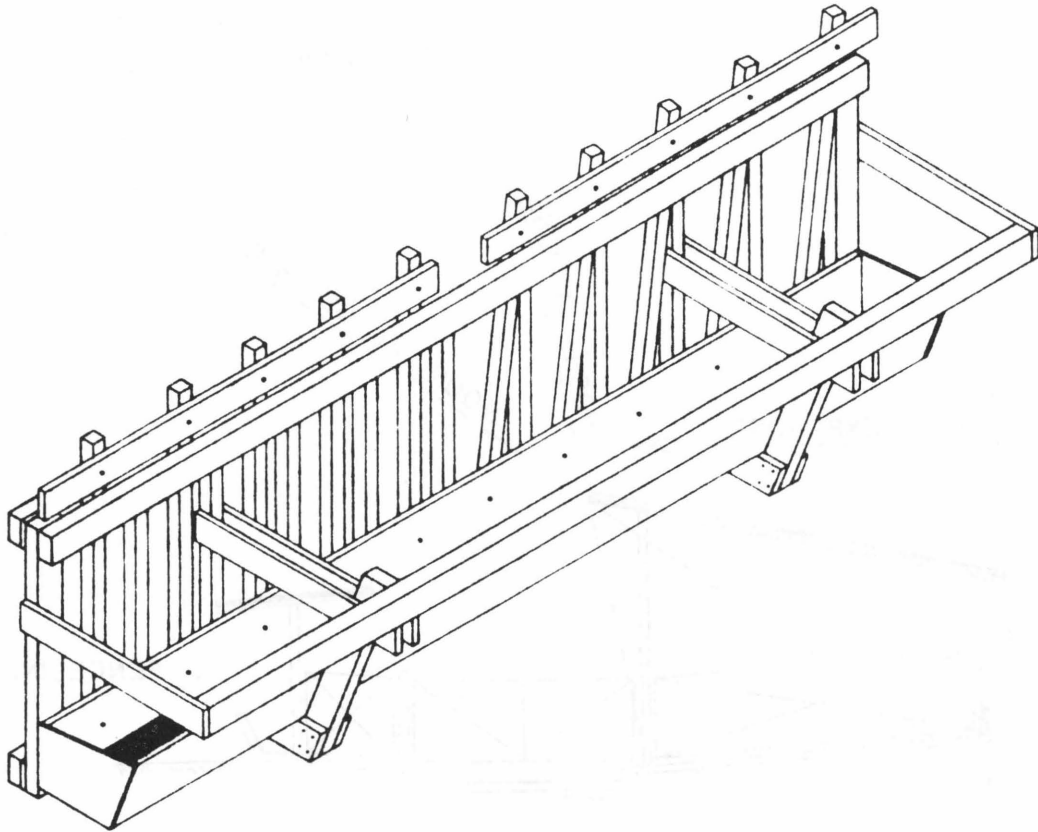


Figure 3. Lock-bar feeding fence for group management of bottle-fed dairy calves.

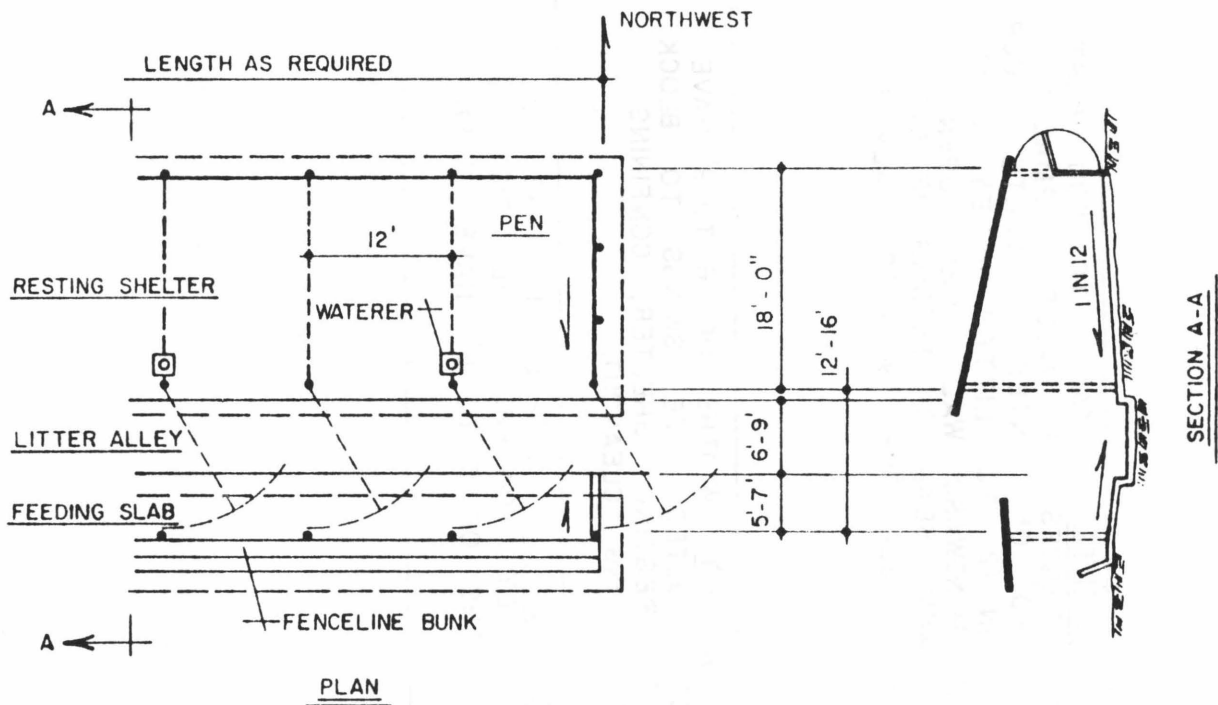
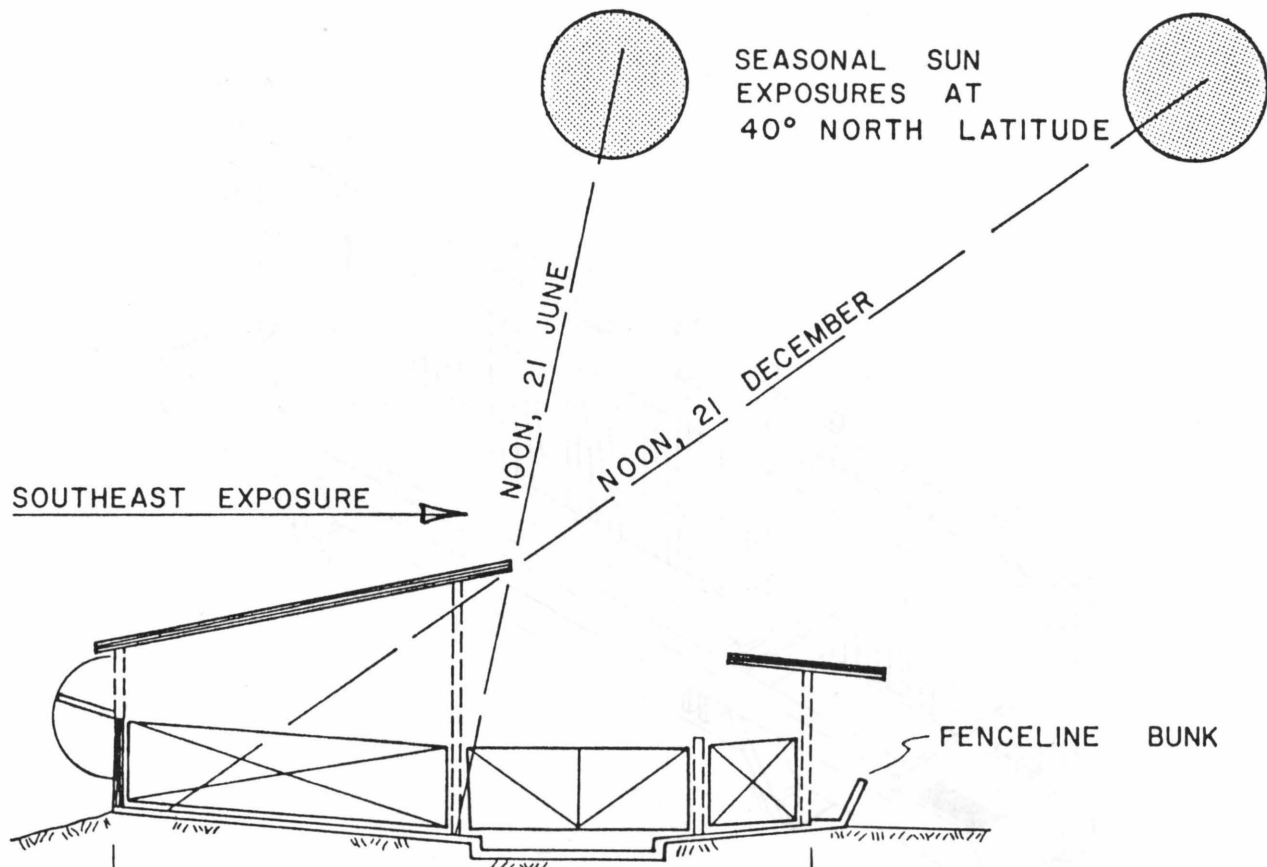


Figure 2. Youngstock housing facility in a gated-pen arrangement featuring counter-sloped, self-cleaning concrete floors. Rear half of resting shelter is bedded when used for baby calves; also, pen partitions are solid to roof.



RESTING SHELTER FACES TO SOUTHEAST. PARTITION FENCES OR WALLS NORMALLY SPACED 12'-0" ON CENTER. CONCRETE FLOOR SLOPED 1 IN 12 TO LITTER ALLEY. DROP FLAP IN WINDWARD WALL LEFT OPEN DURING WARM SEASONS. BEDDING IS NOT NORMALLY USED FOR WEANED CALVES.

19'

LITTER ALLEY WIDTHS OF 6' TO 9' HAVE BEEN CONSTRUCTED. GATE SWINGS TO BLOCK FRONT OF RESTING SHELTER, CONFINING ANIMALS DURING CLEANOUT.

9'

FEEDING SLAB SLOPES 1 IN 12 TO LITTER ALLEY. OWNER DESIRE DICTATES WIDTH; WIDTHS OF 5' TO 8' HAVE BEEN USED.

8'

FENCELINE BUNK

SEASONAL SUN EXPOSURES AT 40° NORTH LATITUDE

NOON, 21 JUNE

NOON, 21 DECEMBER

SOUTHEAST EXPOSURE



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