2. The Dairy Farming Inprovemnet Manual

Notes about dairy farming technology

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Contents of this technical manual

- Concerning dairy management, there are several items to be understood such as feeding management, forage production, reproductive health and milk highline etc.
- In this technical manual, only most basic items are mentioned among the necessary technology.

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1.The feature of the body of a dairy cow

Cattle eat mainly grasses, and produce much milk especially dairy cattle. Therefore, dairy cattle develop digestive organ, udder, and back side compare to that of beef cattle.

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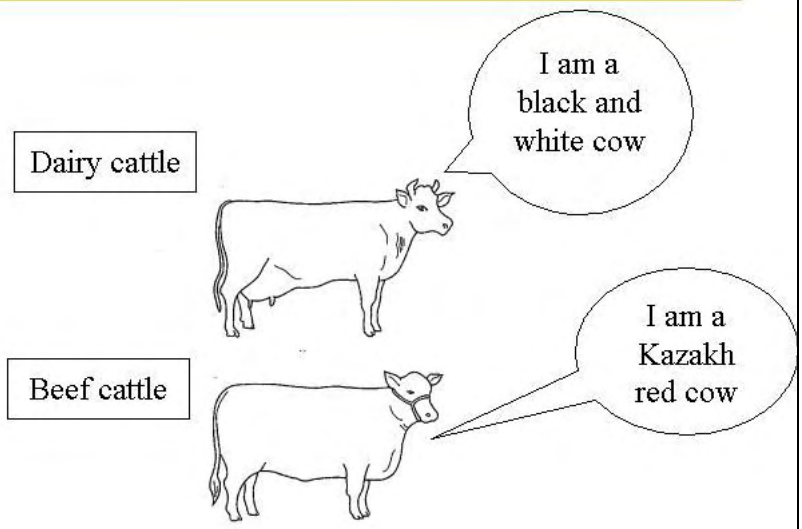

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- Milk vein is well developed on the udder
- (the picture is taken in Japan)

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2. The lifetime of a dairy cow.

Life stile of dairy cattle is divided into 3 steps such as calf, raising cattle and matured cattle. Moreover, matured cattle is divided into 2 steps such as first delivery cow and more than 2 times deliver.

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3. Feed production

Feed is divided into forage and formula feed. The important thing is providing good quality of forage (grasses) and formula feed with adequate balance. Although the pasturage system or the cut and carry grass system is carried out, the year round feeding of forage should be carried out.

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Forage feed

1. It is necessary to have adequate amount of forage according to the number of cattle.
2. The storage feed (silage, haylage, etc.) for winter season is secured.

2-1. How do you know the quality of silage?

3. Grasses species and legumes species should be grown and used.

3-1. Good example of legumes is alfalfa.

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- Excellent quality of hay
  - (the picture was taken in Japan)

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Good example of silage storage

- (the picture was taken in Japan)

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- Excellent quality of silage

- (the picture was taken in Japan)

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One of the good legumes "Alfalfa"

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Formula feed

The feeding of suitable amount formula feed is important.

1. Good quality materials.
2. Reasonable price
4. Feeding should be done according to cattle age

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4. The raising system

There are 2 types of raising system about dairy cattle such as stanchion method and free stall method. In any case it is important to provide the cow shed with adequate equipment for healthy and cheap cow management and producing high quality milk.

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1. Stanchion method is desirable about less than 40 heads.
2. Free stall method is desirable about more than 40 heads.

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5.Basic necessary conditions for cow shed:

1. It is sanitary and comfortable.
2. Care taking about cattle can be done efficiently.
3. It is economical from the point of economy.
4. Intense heat protection during summer.

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- The floor is always covered with wood saw to keep dry condition

- (the picture was taken in Japan)

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Making compost

- (the picture was taken in Japan)

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- Holstein is weak under the high temperature and high moisture condition. Under the intense heat, body temperature and breathing rate go as result the feed intake decrease.
- 1. The amount of milk falls.
- 2. The rate of milk fat falls.
- 3. The rate of non fat solid falls.
- 4. Ovary function is decline.

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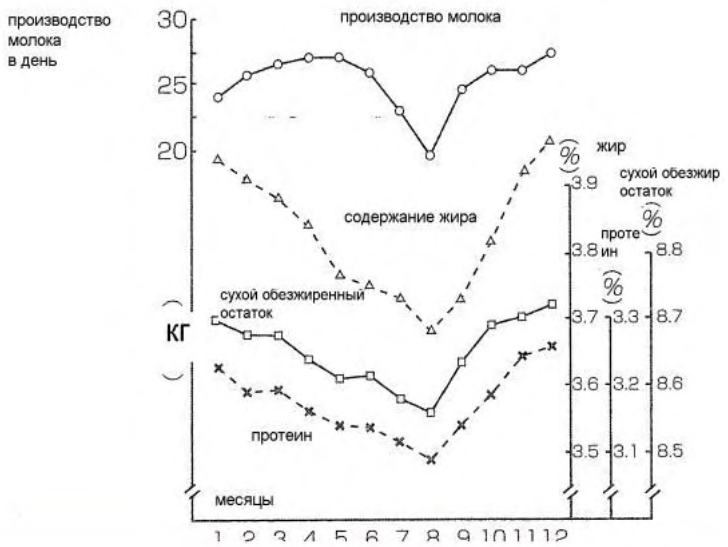

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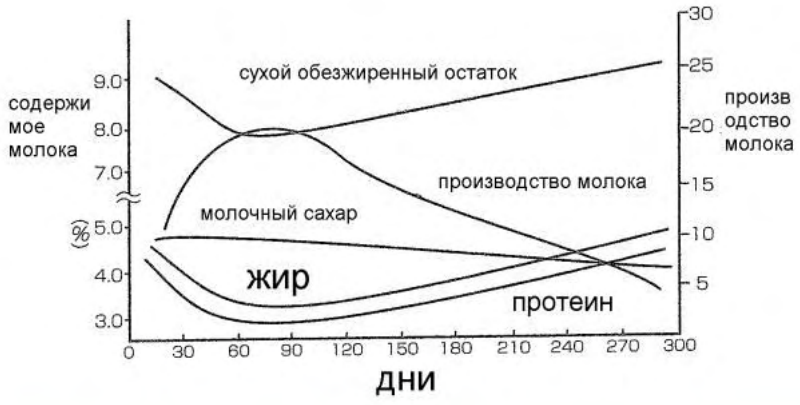

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- (1) Natural ventilation from roof and windows are installed.
- (2) Heat insulation of the ceiling and the side.
- (3) To make the eaves longer to protect against direct sun.
- (4) To plant many trees to protect from direct sun.

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- Ventilation construction of the roof

- (the picture was taken in Japan)

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7. Breeding and mating

To make stable milk production, it is necessary to pregnant cow every year and delivery is desirable. The optimum time of insemination is 9 hours before closing cow's heat, or 6 hours after closing heat. It is only 15 hours. Therefore heat discovery activity is very important work for dairy farmers.

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Moreover, it becomes very important which does not miss optimum time of insemination to the sexual excitement discovery information from the dairy farm.

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1. There are enough dozes of frozen semen.
2. There is enough amount of liquid nitrogen.
3. There are appropriate of access road to the farm.
4. There are reasonable price for insemination services.
5. The insemination techniques are sufficient.

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8. The management about calves care and nursing.

The calves care and nursing are very important techniques. Because the influence will be so much concerning to milk production, if the calves care and nursing are not sufficiently carried out.

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1. Cow with durability with a strong body
2. The good cow which is excellent in appetite and digestive capability.
3. The cow which has good breeding results, and produce much milk.

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9. Calves care method.

(1)Used be, the time of weaning is carried out about 3 to 6 month old, however it became more popular of only 6 weeks weaning in order to promote development of first stomach.

(2) The important thing is to feed colostrums for one week after birth. To feed one little within 4hours, then feed another 2 little after 5 hours. It is necessary to carry for 3 days at least.

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(3) After that, give mother's milk or the starter milk. Also give good grass little by little. The mother milk feeding is 4~5kg in fundamental. Also water should be given.

(4) The calf hatch can isolate a calf from the disease germ in the cattle barn, and since it is well ventilated, it is effective. 2 month age is good. The calf hatch after use is washed and disinfected, and carry out solar drying.

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- Good example of calf hatch
- (the picture was taken in Japan)

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- Very good example of calves shed in this area. It is sanitary, warm and bright.

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- The good ventilation is more important than the warm environment.
- Good structure of breathability and ventilation nature.
- Prevention from contact between calves.
- A place with sufficient drainage and sun light.
- Cheap construction costs.

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10. Raising cattle management.

The raising term is important for body making. The basic feed is forage and should be avoided too much nutrient feed. It is appropriated if daily gain is 0.6 to 0.9 kg. Sufficient amount of water should be given and dehorning also desirable in adequate time.

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Milk production

The importance of milk hygiene control

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The importance of working environment.

- It is said that milking is important about good collaboration between cow and machineries and people. However, main causes of mastitis come from cow (5%), machineries (25%), and people (70%). Therefore, the most important thing is the role and attitude of people.

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The important things are:

- The cows should be maintained always in healthy and clean condition.
- The cow shed should be in clean condition.
- It is necessary to keep good management without stresses to cows (ventilation, feed change)

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Which is better condition?

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The cow shed should be maintained clean.

- Although it is very hard to maintain clean condition in cow shed during winter, the clean condition is most important goal.
- If you are lazy to clean up one day, then it will take three days to make it clean.
- Keep in mind that “Milk is food”

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