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EXTENSION DIVISION

C. W. HICKMAN  
*Acting Director*

# 4-H Club Dairy Bulletin

## Division II



COOPERATIVE EXTENSION SERVICE IN AGRICULTURE AND HOME  
ECONOMICS OF THE STATE OF IDAHO, UNIVERSITY OF IDAHO,  
COLLEGE OF AGRICULTURE, AND UNITED STATES  
DEPARTMENT OF AGRICULTURE COOPERATING

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BOYS' AND GIRLS' CLUBS

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## Purpose and Aims of 4-H Club Work

4-H Club members "learn to do by doing." Second-year club members progress by studying advanced problems and carrying advanced phases of their project work. They learn approved dairy practices and develop qualities of leadership. Continuing in this manner, dairy club members balance their training and experience and become better fitted to take advantage of educational and business opportunities in the future.

### General Requirements

1. Every dairy club member should belong to a standard 4-H Club of five or more members, and be enrolled with the Idaho Extension Service.

2. Second-year dairy club work is based on problems in raising yearling dairy heifers. Your project animal should be the calf you used in your first year's work. (It is permissible to substitute a superior animal of similar age if approved by your leader or County Extension Agent.)

3. Each second-year dairy club member should own and assume full responsibility for feeding, caring for, exhibiting and keeping project records on at least one yearling dairy heifer for at least six months and preferably for a whole year.

4. Every dairy club member should give at least one demonstration showing in detail how to do some timely lesson learned in club work. This demonstration can be given at the regular club meeting or any other community gathering. It may be either an individual demonstration or as a team of two members.

5. Achievement certificates are awarded to all members who complete the year's work and turn in a satisfactory project record at the end of the year.

G. C. ANDERSON\*

**Introduction**

**Y**OUR first job in your second year's work as a dairy club member is to plan your work so that you will get the most possible good out of it. Work with your leader and club officers and plan to have timely and interesting topics or demonstrations at each meeting during the year. There are many new things you will want to study this year, and several things from your first year's work you will want to review. Here are some suggested topics for meetings:

1. How to feed the yearling heifer.
  - a. spring
  - b. summer
  - c. fall
  - d. winter
  - e. before and after freshening
  - f. minerals for dairy cattle
2. Care of the heifer at freshening time.
3. Choosing the sire with which to mate your heifer.
4. Health of the dairy heifer.
5. Review of dairy cattle judging.
6. Review of showmanship.
7. Project tour, inspecting all members' projects and record books.
8. Achievement program or special program for parents.

You should plan your home work too, so you can meet all requirements and take part in the various club activities during the year. The more important things you will need in order to carry your club work are:

1. Yearling heifer for your project.
2. Feed for a year.
3. Record book.
4. Meeting dates and places.
5. Dates of fairs and shows.
6. Equipment and supplies for the jobs you plan to do. (Brushes, blankets, halters, etc.)

"Plan your work and work your plan" and you will have a successful club career.

\*Extension Dairyman.

Feeding the Yearling Dairy Heifer

Well-fed, well-grown dairy heifers always become better dairy cows than they would have been if they had been underfed or improperly cared for. Dairy club members can learn from bulletins, leading dairymen and from their club leaders the methods that have proven to be most successful in raising good dairy heifers. You can raise a good heifer too by using the successful methods learned in this way.

The feeding of dairy heifers varies with their age, their condition and the season of the year. There is no set rule for feeding them. The most important thing to learn about feeding is to make the best possible use of the feeds available and to keep your heifer thrifty and gaining well without getting too fat.

The simplest and probably the best ration for the growing heifer is good mixed grass and clover pasture. A good pasture of this



Dairy heifers need good shade in the summertime.

kind, where cattle can fill up in a comparatively short time, furnishes an abundance of proteins, vitamins, minerals and total nutrients for maximum growth and is the cheapest ration you can provide. Growing heifers, on abundant pasture, usually do not need grain except for a couple of months before freshening time or for a little extra conditioning for showing. If the pasture gets old and dry or short late in the summer then you should feed hay and grain along with the pasture.

Rations for fall and winter should be as much like pasture as you can make them. The most important feed for winter is hay. The best hay is good, green alfalfa hay which was grown on fertile soil, cut in early bloom and put up in such a way that the leaves and green color are saved. Alfalfa hay of this kind, like good

pasture, furnishes plenty of protein, total nutrients, vitamins and minerals for the normal growth and development of dairy heifers.

If good hay is scarce, other feeds like silage, cull potatoes, beet tops, beet pulp, grass hay or grain hay, or straw from threshing beans, peas or clover can be used in place of half to two-thirds of the normal amount of alfalfa. A good way to do is to feed the desired amount of hay each day in either one feed or two feeds, and then allow the heifers to eat the amount of the supplemental feed that they will clean up readily at each feeding. A roughage ration of this kind may require 2 or 3 pounds of grain per day in addition, in order to keep dairy heifers in satisfactory condition. A mixture of ground barley and oats is quite satisfactory. When grass first grows up in the spring it contains lots of water and is "washy." Care should be used not to shift too fast from winter feeding to spring grass. Feed some hay before turning cattle out to new grass or let them graze only for short periods during the first few days. These precautions are especially important if clover growth is heavy, because too much young clover at one time will cause cattle to bloat or scour. When there is a lot of clover or alfalfa in dairy pastures, the feeding of coarse bladed grass or dry hay helps prevent bloat.

#### **Minerals For Dairy Cattle**

Feeds grown on fertile, high-yielding soils nearly always have enough minerals in them for proper nutrition of dairy cattle. It is good practice in many areas of the state to feed steam-sterilized bonemeal to dairy cattle to insure an ample supply of phosphorus. This can be done by mixing 1 or 2 pounds of bonemeal to each 100 pounds of grain or by placing a box of bonemeal and salt mixed in equal amounts where the cattle can take what they want. This mineral box should be placed in a shed out of the wind and storms. Another box containing iodized salt should be placed in the shed too, so the cattle can balance their minerals to their needs. Most of Idaho is in an area known to be low in iodine and, therefore, cattle should always have free access to iodized salt. In buying salt be sure it is labeled "Stabilized Iodized Salt" or "Sodium Thio-sulphate added." Salt labeled in this way does not lose the iodine readily when exposed to the air as does salt that is not treated.

Commercially prepared mineral mixtures containing not less than 5 percent phosphorus and not more than 30 percent calcium are sometimes used successfully when good bonemeal is not available, but these mineral mixtures are more expensive than bonemeal and many times do not give as good results.

#### **Feeding Before Freshening Time**

About 2 or 3 months before your heifer is due to freshen she should be given a little extra feed and care to be sure she will be in proper condition to produce well during her first lactation. Good pasture or bright green hay are especially important at this time as she needs extra vitamins and minerals as well as feed nutrients to keep in condition and produce a strong, healthy calf.

During this time it is a good idea to feed several pounds of a mixture of ground oats and barley, equal parts by weight, with about 20 percent wheat bran added. If the heifer gets unusually fat or "makes up" too fast as shown by too much swelling of the udder, quit feeding grain about 2 weeks before she is due to freshen or give a light feeding of bran twice each day. Heifers that are fed too heavily the last 2 or 3 weeks before freshening have more trouble with swollen, caked udders than if they were fed good roughage and a light, laxative grain mixture.

After calving the heifer should be fed good hay or pasture as soon as she will eat, but the grain should be fed very sparingly, if at all, for the first day or two. A mixture of bran and oats, equal parts by weight, (or straight bran) is best at this time, especially if a succulent feed such as pasture, silage or beet pulp is not available. After her appetite comes back she can be started on the regular herd grain and increased slowly according to her milk production. A good rule used by many successful dairymen is to feed Jersey and Guernsey heifers 1 pound of grain each day for each 3 to 4 pounds of milk produced after they are on full feed. Holsteins can be fed 1 pound of grain for each 4 to 5 pounds of milk produced.

### **Quarters**

Dairy heifers that become accustomed to eating in the barn with the other cows at milking time and are handled quietly and kindly are more gentle and easier to break to milk. Just before freshening date the heifer should be placed in a clean box stall that has plenty of fresh bedding or be turned out in a clean, fresh pasture where she will not be disturbed by other stock. There is less danger of infection to both the cow and her new-born calf when rigid sanitation is practiced.

### **Dairy Cattle Breeding**

It is well known among dairymen that cattle of good breeding or superior ancestry produce better, show better, raise better calves and bring higher prices when sold, than cattle of ordinary breeding or cattle with mixed or poor ancestry. Since your heifer should be a producing cow next year and you hope to add a heifer calf to your project, you will want to mate her to the best sire that you can find. This lesson is to help you choose the sire that will give the best chance to raise a calf that is as good or better than its mother.

### **Breed**

Good dairymen always use registered sires of the same breed as their cows because they can depend on getting more uniform calves of higher quality. All modern breeds of dairy cattle have been bred for certain characteristics for centuries and these characteristics pass on to their calves. When one breed is crossed with another this chain of inheritance is broken and lost to the breed.

## Production Records

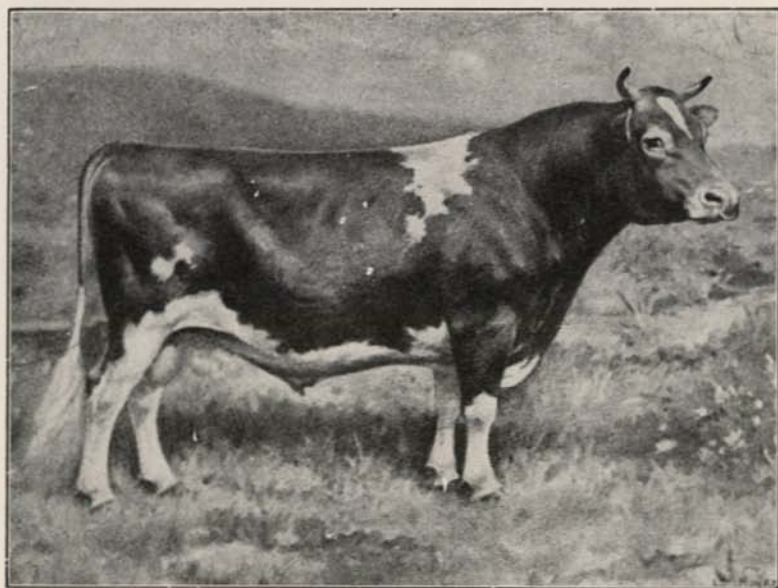
Since high-producing dairy cattle are more profitable than average or low-producing dairy cattle, one of the first things to do in choosing a dairy sire is to check up to see that all of his near relatives are high producers, particularly his mother and all of his sisters. The more sisters he has, both on his sire's side and on his dam's side, that are high producers, the more likely it is that his daughters will be good producers. It is really more important that he have a large number of good producing sisters than it is for his dam to have a high record. It quite frequently happens that a high-producing cow does not raise good calves while on the other hand many cows raise calves that are better than their production records might indicate when compared with the records of other cows. When a sire's daughters average higher than their dams it is more likely that his sons will sire high-producing cows. A sire that has five or more tested daughters out of tested dams in Dairy Herd Improvement Associations is known as a "Proved Sire." The more "Proved Sires" there are in a young bull's pedigree, the more assurance there is that he will prove good. This is particularly true if his dam and granddams are good producing cows that have raised high-producing daughters. All "Proved Sire" records are figured on the basis of 305 days or 10-month lactation records made on two milkings each day, just as practical dairymen milk their cows on the farm. Cows milked and fed three or four times per day usually make larger production records than cows milked twice a day. Many times cows are milked 365 days and make yearly records which also are usually about 15 percent larger than 10-month records. All of the purebred dairy cattle organizations sponsor "official testing" programs. Write to your breed association and get the latest rules so you can become familiar with the way "official" records are made.

## Type

Type in dairy cattle, as you have learned in your judging practice, has a definite value and has a very definite place in breeding up a good herd. For many years breeders have used show ring winnings as a basis for selecting dairy cattle for type, but more recently they have placed more emphasis on classification ratings made by official inspectors sent out by the breed association upon request by the breeder. The inspector compares each animal with the "true type" established by the breed association and gives a rating or grade according to how well it compares to the "true type." The different ratings vary a little with different breeds, but in general are quite similar to those in the following table:

Perfect or true type standards.....		100 points
Excellent (Top rating given)..... (E).....		90 points or more
Very good..... (VG) .....		85-90 points
Good plus..... (G+) .....		80-85 points
Good..... (G) .....		75-80 points
Fair..... (F) .....		70-75 points
Poor..... (P).....		Less than 70 points

The breed associations cancel the registration papers on all animals rated "poor" and do not register bull calves from cows rated "fair." Write to your breed association for books on their classification program. This plan of classifying cattle for type helps the breeder to select dairy cattle for type in much the same way as they do on production records. Young bulls from parents that rate



True-type Guernsey bull.

high in classification and whose offspring rate high have more chance to prove good for type than those whose parents rate low or have no rating.

### **Pedigrees**

Dairy cattle breeders furnish the above information on cattle they have for sale in the form of written or tabulated pedigrees which include the information on the parents and grandparents of such animals. The pedigree on page 9 is a good example and shows the form which is nearly always used.

### **Age to Breed**

Well-grown heifers should freshen the first time when they are from 24 to 30 months old. Jersey and Guernsey heifers mature faster than heifers of the larger breeds and should freshen at 24 to 27 months of age. Holstein heifers should freshen when 26 to 30 months old. The gestation period for dairy cattle is about 283 days. Therefore, heifers should be bred when 15 to 21 months of age depending on the age when they should freshen. The table on page 10 can be used as a guide in determining when dairy cattle will



**Classified Very Good**Name and No. Idaho Veeman Solomon 787755Born 9-13-39 Sex MaleBreeder University of IdahoAddress Moscow, IdahoOwner University of IdahoAddress Moscow, IdahoPrilly Adirondac Veeman 8th 662099

Classified Very Good

10 daughters av. M. 3x basis  
19350 lb. milk 3.3% 648 lb. fat  
Av. classification 11 dau. 78.9Prilly Adirondac Veeman 486265

Classified Good Plus

11 daughters DHIA av. 703 lb. fat  
14 daughters AR av. 633 lb. fatAzalia Pietje Wayne 796777

Classified Excellent

23782 lb. milk 817 lb. fat

Idaho Piebe Jessica 997662

Classified Excellent

28312.9 lb. milk 3.2% 912 lb. fat at  
4 y. 8 m.  
9 daughters av. 3x M. 675 lb. fatKing Piebe Pontiac Segis 174303

17 dau. av. 3X M.

19962 lb. milk 626 lb. fat

Idaho Matador Gem 841729

14087 lb. milk 444 lb. fat at 2 yr.

1. A well-balanced pedigree showing ancestry of high production and type.

freshen, when the breeding date is known and recorded as it should be, especially for purebred cattle.

**Common Ailments and Pests of Dairy Cattle**

Dairy cattle must be healthy and free from pests of various kinds to produce profitably. It is much easier and more economical to prevent most diseases and control infestations of pests than it is to cure or control bad conditions after they have developed. Prevention can be reasonably well accomplished by following good herd management practices. The most important of these are feeding, sanitation and elimination of diseased or unthrifty animals. This is done best through systematic tests and close observation by a competent veterinarian. Avoid bringing new animals into the herd without having health certificates. All ailments should be given proper treatment and care as soon as they are observed.

## GESTATION TABLE FOR COWS

Service on date given in first column should produce calf on date opposite in next column.

Jan. 1	Oct. 10	15	22	27	5	8	17	20	29
2	11	16	23	28	6	9	18	21	30
3	12	17	24	29	7	10	19	22	31
4	13	18	25	30	8	11	20	23	Aug. 1
5	14	19	26	31	9	12	21	24	2
6	15	20	27	June 1	10	13	22	25	3
7	16	21	28	2	11	14	23	26	4
8	17	22	29	3	12	15	24	27	5
9	18	23	30	4	13	16	25	28	6
10	19	24	31	5	14	17	26	29	7
11	20	25	Jan. 1	6	15	18	27	30	8
12	21	26	2	7	16	19	28	31	9
13	22	27	3	8	17	20	29		
14	23	28	4	9	18	21	30	Nov. 1	10
15	24	29	5	10	19	22	31	2	11
16	25	30	6	11	20	23	June 1	3	12
17	26	31	7	12	21	24	2	4	13
18	27			13	22	25	3	5	14
19	28	Apr. 1	8	14	23	26	4	6	15
20	19	2	9	15	24	27	5	7	16
21	30	3	10	16	25	28	6	8	17
22	31	4	11	17	26	29	7	9	18
23	Nov. 1	5	12	18	27	30	8	10	19
24	2	6	13	19	28	31	9	11	20
25	3	7	14	20	29			12	21
26	4	8	15	21	30	Sept. 1	10	13	22
27	5	9	16	22	31	2	11	14	23
28	6	10	17	23	Apr. 1	3	12	15	24
29	7	11	18	24	2	4	13	16	25
30	8	12	19	25	3	5	14	17	26
31	9	13	20	26	4	6	15	18	27
		14	21	27	5	7	16	19	28
Feb. 1	10	15	22	28	6	8	17	20	29
2	11	16	23	29	7	9	18	21	30
3	12	17	24	30	8	10	19	22	31
4	13	18	25	July 1	9	11	20	23	Sept. 1
5	14	19	26	2	10	12	21	24	2
6	15	20	27	3	11	13	22	25	3
7	16	21	28	4	12	14	23	26	4
8	17	22	29	5	13	15	24	27	5
9	18	23	30	6	14	16	25	28	6
10	19	24	31	7	15	17	26	29	7
11	20	25	Feb. 1	8	16	18	27	30	8
12	21	27	3	9	17	19	28		
13	22	26	2	10	18	20	29	Dec. 1	9
14	23	28	4	11	19	21	30	2	10
15	24	29	5	12	20	22	July 1	3	11
16	25	30	6	13	21	23	2	4	12
17	26			14	22	24	3	5	13
18	27	May 1	7	15	23	25	4	6	14
19	28	2	8	16	24	26	5	7	15
20	29	3	9	17	25	27	6	8	16
21	30	4	10	18	26	28	7	9	17
22	Dec. 1	5	11	19	27	29	8	10	18
23	2	6	12	20	28	30	9	11	19
24	3	7	13	21	29			12	20
25	4	8	14	22	30	Oct. 1	10	13	21
26	5	9	15	23	May 1	2	11	14	22
27	6	10	16	24	2	3	12	15	23
28	7	11	17	25	3	4	13	16	24
		12	18	26	4	5	14	17	25
Mar. 1	8	13	19	27	5	6	15	18	26
2	9	14	20	28	6	7	16	19	27
3	10	15	21	29	7	8	17	20	28
4	11	16	22	30	8	9	18	21	29
5	12	17	23	31	9	10	19	22	30
6	13	18	24	Aug. 1	10	11	20	23	Oct. 1
7	14	19	25	2	11	12	21	24	2
8	15	20	26	3	12	13	22	25	3
9	16	21	27	4	13	14	23	26	4
10	17	22	28	5	14	15	24	27	5
11	18	23	Mar. 1	6	15	16	25	28	6
12	19	24	2	7	16	17	26	29	7
13	20	25	3	8	17	18	27	30	8
14	21	26	4	9	18	19	28	31	9

Cattle that are fed liberally on good quality feeds and are well cared for have much more resistance to nearly all diseases than cattle that are underfed and have to "rough it" for existence. Rations that are made up of good pasture grasses, bright green hay and home-grown grains furnish plenty of vitamins, minerals, and feed nutrients to build up disease resistance in most normal cattle if they have clean, dry quarters to sleep in and to protect them against bad weather. Furthermore, disease germs and insect pests do not thrive in clean, sanitary barns and sheds that are kept well bedded with fresh, clean straw. Barns and sheds should be cleaned and aired out every day to protect the health of dairy cattle.

Unthrifty animals often spread disease to other animals in the herd and should be removed unless they are very valuable, and their condition can be corrected through proper treatment. Your veterinarian can tell best what to do in such cases.

The Idaho Bureau of Animal Industry, with headquarters in the State House at Boise, cooperates with the United States Department of Agriculture, Bureau of Animal Industry, in carrying on programs to control outbreaks or epidemics of infectious diseases such as Bangs disease, tuberculosis, mastitis and other diseases that take a heavy toll of Idaho's dairy cattle. Have your local veterinarian contact the State or Federal department at once, if you suspect an outbreak, in order to get action as quickly as possible.

Many times diseases are brought into healthy herds by purchasing infected or diseased animals which do not show any symptoms of disease. The best way to protect your herd against such diseases is to raise your own cattle for replacements as much as you can. When it is necessary to buy cattle be sure to have them inspected and tested by a competent veterinarian. Even then it is well to isolate them from the rest of the herd for at least 30 to 60 days and have them checked again to be sure they are free from communicable diseases before putting them into the herd.

### **Flies**

Flies have been one of the most annoying problems among dairymen for many years and many ways of controlling them have been tried with varying degrees of success. The most promising development in controlling flies is the use of the new chemical known commercially as DDT coupled with rigid sanitation around the barns to destroy breeding places for flies. If the barn and yards are cleaned daily and all farm buildings are sprayed with DDT according to directions, flies can be controlled. Write your County Extension Agent or the University of Idaho Extension Service for the latest circulars on fly control, and use this for a topic for discussion or demonstration at one of your meetings just before fly season.

### **Cattle Grubs**

Cattle grubs, sometimes called ox warbles, which are the larvae or young of the heel fly, cause material losses to the dairymen and beef cattlemen throughout Idaho. The female flies attempt to lay their eggs on the hair around the feet and legs of cattle during

the summer months. This annoys and frightens the cattle and causes them to run for shade or a water hole for protection. Where heel flies are numerous, cattle will not feed properly during the day, and, therefore, do not produce milk or meat as well as they should.

Heel fly eggs hatch in less than a week after they are laid on the hairs around the feet and legs and the young larvae burrow directly into the skin and upward through the body tissues. They appear as grubs or ox warbles along the back in the late winter or early spring, or in about 9 months after the eggs are laid. The larvae cut holes in the hide shortly after reaching the back and remain there for 25 to 35 days before reaching full growth. When they are fully grown they emerge through the hole in the hide and drop to the ground to pupate, or develop into heel flies.

Warbles can be controlled by treating the backs of cattle with rotenone spray or dust just before the warbles come out. Ask your County Extension Agent for Idaho Extension Bulletin Number 155, "Grubs and Lice on Cattle," or write to the Idaho Extension Service for it. Use it as a topic for discussion or demonstration at one of your winter meetings.

### **Lice**

Cattle lice are quite common on cattle in the fall and increase rapidly during the winter months. They can readily be found by examining the skin and hair along the animal's back. Lice can easily be controlled by dusting or spraying the animals thoroughly with either DDT or rotenone.

Cattle should be treated for lice in the fall to avoid extensive winter treatment, and if no new animals are added to the herd without first being treated, winter treatment will not be necessary. Ask your County Extension Agent for the latest Idaho Extension Bulletin on cattle lice control.

### **Ringworm**

Ringworm is quite common in Idaho, especially in the winter months. It is a fungus growth which works around the roots of the hair causing scabby, scaly, circular spots that itch and irritate the skin. These spots grow larger if they are not checked, and spread to other animals. The best treatment for ringworm is to paint the spot and the skin around the spot with Iodine and then treat each day by rubbing with Iodized ointment or some oil such as olive oil or mineral oil until the spot clears up. Stalls and pens should be kept clean and well bedded. If only one or two calves have ringworm, it is a good idea to separate them from the rest.

### **Warts**

Warts are unsightly growths which are commonly found around the head and neck or on the teats, where they may cause trouble in milking. They can usually be controlled by rubbing them every day with castor oil or by tying a thread tightly around the base. If neither of these methods work, consult your veterinarian and he may be able to help you.