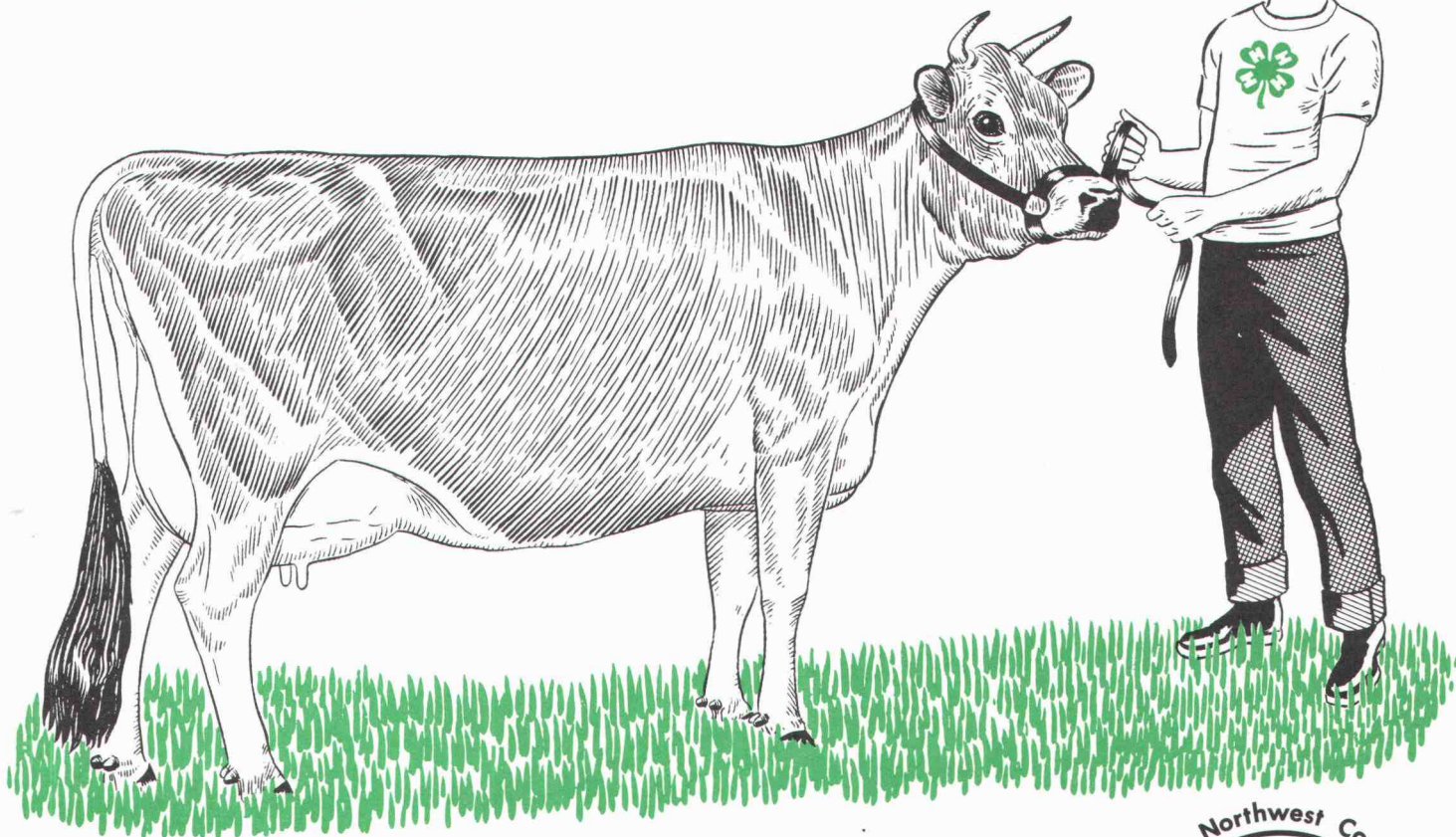


# THE COW

## in 4-H Dairying



PNW Bulletin No. 82

July, 1967



# The Cow In 4-H Dairying



**A**S you progress in this more advanced area of your dairy project, you should find many interesting and challenging experiences.

How you develop this phase of your project depends somewhat on your home situation. If you live on a dairy farm and have a commercial market for milk, you will probably feed and manage your cow with the family herd. You may wish to develop your own dairy herd from your foundation animal. However, if your family has only enough land to raise a few dairy animals, you may use your dairy cow to produce milk for your family. The care and management of a dairy cow may differ under these two situations.

You will be primarily concerned with the care and management of your dairy cow regardless of your home situation. If you started with a calf or heifer, you will find that work will continue to be an important part of your dairy program. Naturally, you may expect some bull calves, which will be of little value in increasing the size of a 4-H dairy herd. In some cases bull calves can

be raised for veal or beef. You may wish to sell the bulls as baby calves and purchase heifers to continue the growth of your dairy project.

You could also carry the 4-H Dairy Science project unit. You will find the science unit provides an insight into the mysteries of the dairy cow. This kind of information will help you do a better job of caring for your project.

## Records

Throughout this and future dairy projects, the records you keep will play a very important part in the success of your program. Remember, successful companies keep records the year around.

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This bulletin was prepared by George Cleveland, dairy specialist of the University of Idaho Agricultural Extension Service, in cooperation with dairy specialists of Oregon State University and Washington State University and state 4-H club leaders of the three extension services.



A six or ten-month record is of little value to them. The same is true of your 4-H records. All records should be for the full lactation period including the dry period. A 12-month continuous record will prove valuable and meaningful to you in selection and culling.

It is recommended that you take part in some kind of production testing program. This could be DHIA, Owner-Sampler, Weigh-a-Day-a-Month or any other testing program. See your county extension agent for complete information on these programs. If you do not use one of the above production testing programs, you should weigh the milk from each cow one day near the middle of each month (morning and night) and record it. You can estimate the butterfat produced by asking your dairy plant to test the milk from your cow at least twice during the lactation (3 and 6 months). Or, you can test the milk for fat percent at your school the same day weights are taken, if they have testing equipment. Of course, this test will not be official, but it can be used for your records.

Production records are very important to you for feeding, culling and selection of animals to keep in the herd.

Complete and accurate feed records should be kept for 12 months. You should know the cost of keeping each animal for a complete year. This will be valuable to you in determining income over feed cost or "how much is this cow making a year over feed cost."

A complete record should be kept on the pedigree and history of each animal. Be sure to keep all health records (vaccination and blood test, etc.) and a history of disease or sickness for each animal.

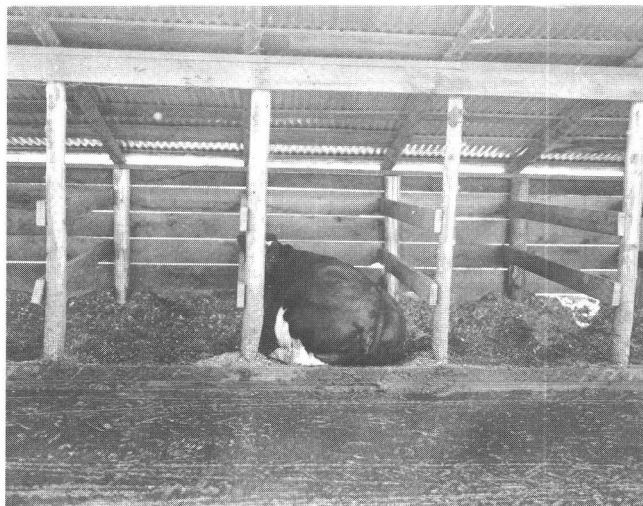
Records of breeding and calving dates, sex of calves born, bulls used, etc., will prove very valuable.

## Milk

You are now in a project that deals with a product for commercial or home market. You will therefore be expected to learn and use sanitary milking procedures. You should always plan to produce the highest quality milk possible and become familiar with the important factors involved in producing quality milk.

1. **Healthy Cows**—Quality milk can come only from healthy cows. Make sure your producing cows are free from all diseases such as Bang's disease, tuberculosis and mastitis.

2. **Clean Cows**—It is easier to produce clean milk if cows are kept clean winter and summer. Cleaning is made faster and easier if the cow's udder and flanks are clipped.



3. **Clean Milking Parlor and Barns**—Milk is a human food and should be produced in a clean, light and well ventilated parlor or barn.

4. **Satisfactory Barnyard**—If possible, yard should be hard surfaced. This makes cleaning much easier and cows are cleaner and healthier.

5. **Clean Milking Equipment**—All milking equipment should be properly washed and rinsed immediately after each milking. Just prior to the next milking the equipment should be properly sanitized. Milking-equipment dealers have recommendations for properly cleaning all equipment. These instructions for cleaning and sanitizing should be followed.

6. **Adequate Milk House**—A room with adequate supply of hot and cold water where dairy equipment can be properly cared for is needed. Milk house should have some facilities for properly handling and cooling milk.

7. **Proper Cooling**—Milk should be cooled as rapidly as possible to 40°. It must also be protected from dust and heat until it is picked up by the hauler.

8. **Careful Feeding to Prevent Off-Flavors and Odors**—Feeds that may cause off-flavors and odors in milk should not be fed within three hours before milking.

Remember that the processing or bottling plant that receives your milk cannot improve the milk that comes from your farm, so be sure the quality is good when it leaves.

If you have questions regarding latest regulations on producing Grade A or quality manufacturing milk, contact your local leader, county extension agent or dairy fieldman.

## The Two-Year-Old Cow

A month before calving, your heifer should be brought into the barn and allowed to go through

the milking procedures with the other cows to become accustomed to the noise and routine. If she is handled in this manner, she will be less trouble after freshening when added to the regular milking herd.

Your bred heifer will need no special care until a short time before calving. If she stays in good condition, no extra grain will be needed until about 2 weeks before calving. Feed about one-half to one pound of grain for each 100 lbs. of her body weight and continue for four days after calving. A longer pre-feeding period may be necessary depending on the condition of the cow. Generally, it is a good idea to cut down on high-energy feeds such as corn and wheat, until the swelling has nearly left the udder after calving. Be sure your heifer is in good condition but not overly fat when calving.

## Calving Time

Place the heifer in a clean, well bedded box stall a few days before calving. If she is due during the summer, a clean, shady pasture lot is an excellent place to calve.

Pay close attention to your heifer so someone can plan to be on hand when she freshens. Generally everything will go all right and no help will be needed. However, occasionally a little help may be needed which may save the calf, the cow, or both. A calf is normally born with its front feet first and the head lying between the fore legs. Be sure Dad is present to give a hand if needed. If trouble or difficulties develop, call your veterinarian.

After the calf is born be sure the calf is breathing and remove any mucus that may be around the nostrils and mouth. If your cow doesn't dry the calf by licking it, dry the calf with a clean cloth or feed bag. Apply iodine to the navel to prevent infection.

Wash the udder carefully with clean, warm water before the calf is permitted to nurse. As soon as the calf is on its feet be sure it nurses or gets some colostrum.

The placenta or afterbirth (membrane which surrounds the calf before birth) will generally be passed an hour or so after calving. Remove it from the stall at once and bury. If the heifer does not "clean" properly, call your veterinarian.

Provide clean warm water for your heifer after she has calved. Continue to feed her the same grain forage ration she received before calving for the next four days.

## Milking Time

After your heifer freshens, she becomes a milking cow and should be handled as a part of

the herd. Many dairymen commonly speak of two and three-year-old cows as heifers. It should be kept in mind that as far as growth and size are concerned they are still heifers, and should be fed for growth as well as milk production.

Form good milking habits early. Train your heifer properly at the start of her first lactation. Some suggestions are given in the illustrations. Good milking habits will pay big dividends in more milk and healthier cows.

1. If possible, start using the milking machine. If you do not have a milking machine, milk her by hand. Be sure to milk her out dry at the first milking and each time thereafter. Heifers seldom have milk fever and milking them out will help soften the udder more quickly.

2. Wash udder carefully with warm water about one minute before attaching machine.

3. Use a strip cup. Milk a few streams by hand from each teat into strip cup. Check for abnormal milk.

4. Carefully attach teat cups, being sure she has let her milk down. Stay right with the heifer until she is milked. Some gentle massaging may help to get milk from the swollen udder. Be sure to remove the machine as soon as she is milked out—avoid hand stripping if at all possible.

5. Be regular and follow the same routine each time.

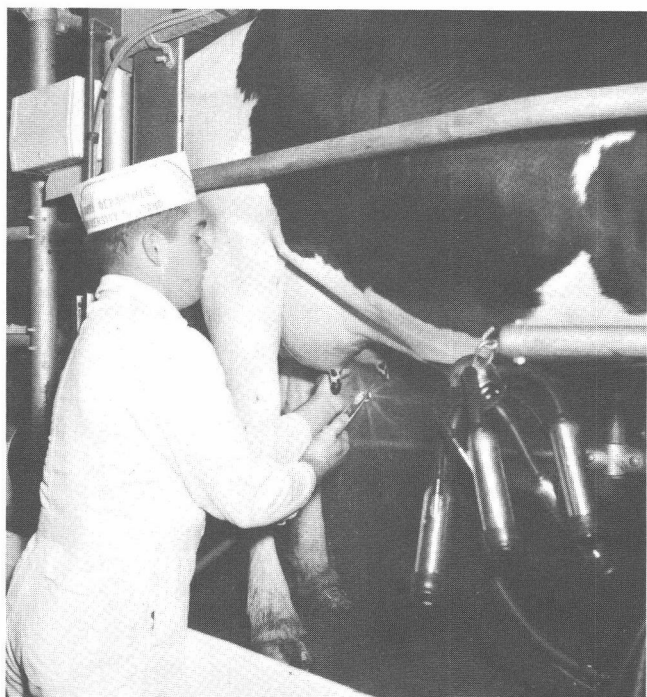
6. Patience and gentleness are musts if you are to teach cows not to be afraid. Cows will kick only if in pain or frightened.

Remember that cows learn habits quickly. They become used to regular feed and care. Any sudden change from a regular schedule or routine that disturbs cows can cause a decline in milk flow. It pays to be kind and calm with dairy cows. Excitement affects their production. When chased by dogs or roughly treated, the result will be noted by less milk.

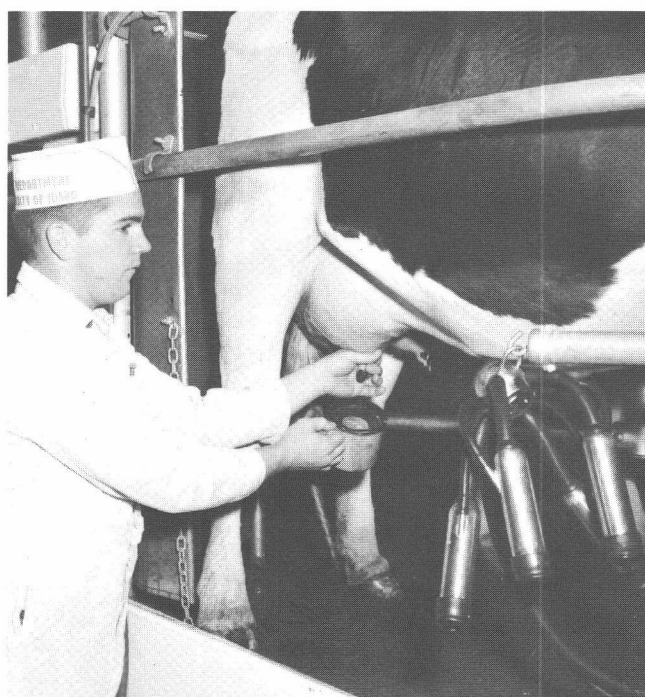
## Your Milking Machine

Learn to use the milking machine properly. This will mean less udder trouble, cleaner milk, and less time spent milking your cows. Keep your machine clean and in good working order. Be sure to check for worn parts, leaky hoses, dirty vacuum lines, faulty operation of pulsators or pumps. When trouble develops, check with your machine dealer immediately. A faulty operating machine can cause serious udder problems and reduce milk production. Be sure to follow the manufacturer's recommendations in operation of the machine. Always use proper milking procedure and techniques.

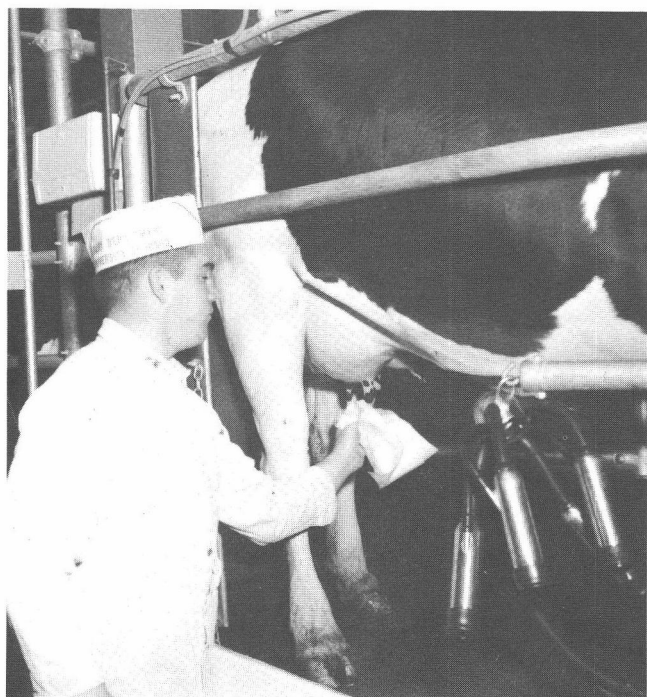
# Proper Steps in Managed Milking



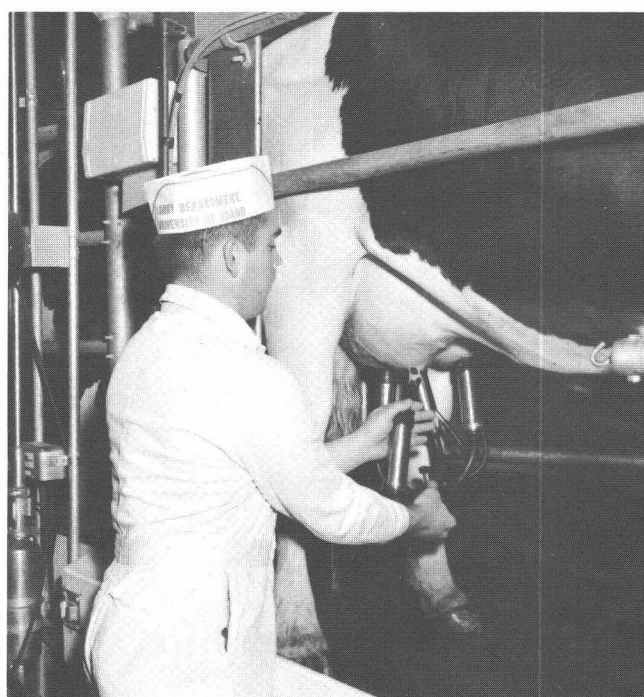
**Washing.**



**Use the strip cup.**



**Drying. A clean towel for each cow.**



**Applying the milker after milk letdown.**

## Breeding

Heat periods will usually start 3-6 weeks after calving. Watch for them and keep a record. They should occur thereafter every 19-23 days. Breed the heifer or cow about 70-90 days after calving. Breeding earlier will reduce the amount of milk she will give in the current lactation.

"Repeat breeders," those cows that are bred at each heat period but do not settle, should be examined by your veterinarian.

## Dry Period

Your cow should have a dry period of 6 to 8 weeks before calving. The dry period gives her udder a rest, which is important in keeping it healthy and productive. The dry period will also help the cow to build up her body reserves, necessary to produce milk. Feed the dry cow well so she will be in good condition at calving time. A cow in good condition when dried off will not require as heavy feeding during the dry period. Good pasture or roughage with light grain feeding should be all she will need during the dry period.

## Feeding

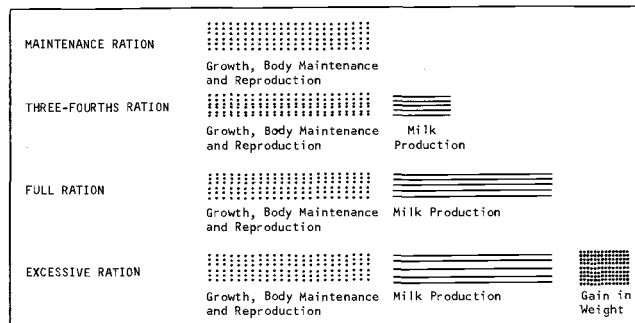
The kind of feeding program you develop will depend on several factors. If you live on a dairy farm no doubt your cow will be fed for high production with the rest of the herd. If your 4-H cow is producing milk only for your family, you may not want to feed for maximum production for economic reasons. In the latter situation the cow is likely to receive more individual attention than a 4-H cow in a dairy herd. However, the principles of good feeding apply in each case.

There are about as many ways to feed dairy cows as there are dairymen. Obviously some methods are more successful than others. Feeding programs vary because of: (a) differences in management ability and personal preference, (b) breeds of dairy cattle, (c) available feeds, (d) feed quality, (e) differences in herd production levels, (f) feed prices, (g) milk prices, (h) land resources and (i) manner in which dairy herds are housed. Regardless of your particular situation, the important thing is to feed to meet the cow's requirements for each of the essential nutrients, which are grouped as—ENERGY, PROTEIN, MINERALS, VITAMINS and WATER. Your cow needs these nutrients for:

1. Growth
2. Body Maintenance
3. Reproduction

## 4. Milk Production.

Each of the body functions listed above needs proteins, energy, minerals, vitamins and water to meet daily requirements. The amounts of these nutrients needed daily by each dairy animal are determined by: 1. Age of the animal; 2. Size of animal; 3. Levels of production; 4. Stage of lactation; and 5. Stage of gestation.



## Feeds for Dairy Cows

**Roughages**—Good quality hay, silage and pasture are generally the cheapest sources of nutrients (energy) for the dairy cow. In Washington, Oregon and Idaho nutrients from grains are generally more expensive. Thus you should feed your cow all the good-quality roughage she wants to eat and then supply the additional nutrients she needs with grain. You can calculate the costs of feed nutrients with this formula: (a) 1 ton  $\times$  % TDN (total digestible nutrients) = pounds of TDN in 1 ton of feed. (b) Price per ton of feed  $\div$  pounds of TDN in 1 ton of feed = cost per pound of TDN. Examples:

Feed	% TDN (As Fed Basis)	Price Per Ton	Price Per Lb. TDN
Alfalfa Hay	55%	\$32	2.9c
Corn Silage	16%	\$ 8	2.5c
Grass Silage	16%	\$ 8	2.5c
Grass Hay	45%	\$20	2.2c
Grain	74%	\$64	4.3c
*Pasture	14%	\$ 6 (rent)	0.95c
Poor Grass Silage	11%	\$ .8	3.6c
Poor Alfalfa Hay	45%	\$32	3.6c

\*Assume cow eats 150 lbs. per day.  
Monthly rent \$6 per cow.

The quality of roughage makes a difference in cost per pound of TDN. In addition, the better the quality of roughage, the more the cow will eat and the less grain she requires for good milk production. Cows produce more milk from good roughage than poor roughage. You can have samples of your roughage tested to determine its quality. Ask your county agent about forage testing services available in your county.

**Grain**—Grain is used to provide extra energy and to balance the ration. A balanced ration means that you provide enough proteins, fats, carbohydrates (starch and sugar), minerals, vitamins, and water so the animal can produce milk, reproduce, grow and maintain her body all at the same time. Grain feeds are high in energy and low in fiber.

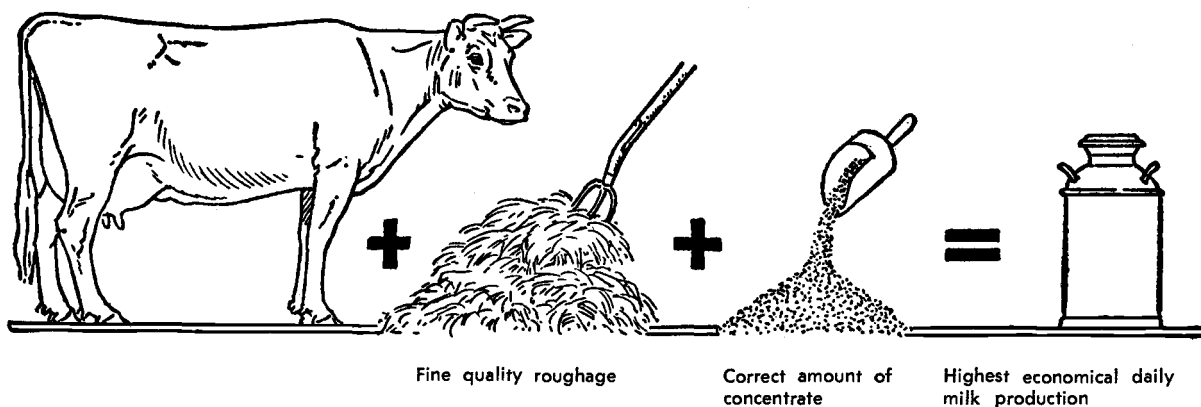
A grain ration will vary in its feeding value according to the types of ingredients in it. Feed tags on commercial feeds list the ingredients. Barley, oats, wheat, corn and molasses dried beet pulp are fairly low in protein content. Mill run and brewers' grain are higher in protein, but soybean and linseed oil meal are still higher. By varying the amount of the different feeds, you can prepare a grain ration that provides sufficient energy and protein to meet your cow's needs.

When **good** quality roughage is used, generally no additional protein will be necessary. A grain mix using combinations of barley, wheat, oats, corn, bran or molasses dried beet pulp will generally provide a balanced diet for your cows. Remember—barley, oats, wheat or corn may be substituted in the dairy ration depending on their price. If your roughage is of **average** quality, a higher protein and energy ration will be needed. With a poor quality roughage (low in protein and energy) you will need a grain mix high in protein and high in energy. Try varying the amount and watch your cow for any change in production. Composition of grains and roughages and sug-

gested grain rations are listed in extension bulletins on feeding dairy cows.

#### AVERAGE COMPOSITION AND DIGESTIBLE NUTRIENTS OF SOME COMMON FEEDS

FEEDSTUFF	AS-FED BASIS		
	Total Dry Matter	Digestible Protein	Total Digestible Nutrients
<b>HAY</b>			
	Per cent	Per cent	Per cent
Alfalfa	90.5	10.9	50.7
Bromegrass	88.8	5.3	49.3
Red Clover	88.3	7.2	51.8
Ladino Clover	89.5	14.2	59.5
Oat Hay	88.1	4.9	47.3
<b>SILAGES</b>			
Alfalfa, not wilted	24.7	2.6	13.5
Alfalfa, wilted	36.2	4.3	21.4
Corn, cannery waste	22.4	1.1	16.1
Corn, dent, well matured	28.5	1.3	19.8
Corn, dent, immature	20.3	0.9	12.9
Oat silage	32.4	1.7	19.0
Orchardgrass	30.0	2.0	19.8
<b>CONCENTRATES</b>			
Barley	89.4	6.9	78.8
Molasses, dried pulp	92.2	5.9	72.4
Corn, Grade No. 2	85.0	6.7	80.1
Corn and cob meal	86.1	5.4	73.2
Cottonseed meal	92.8	35.9	72.6
Milo	89.0	8.5	79.4
Wheat	89.1	8.3	79.9
Oats	91.2	7.6	72.2
Wheat Bran	89.1	10.0	66.9



**Feed your cows top-quality forage and grains for highest economical milk production.**



# Grain Rations

## Ration No. 1

600 lb. barley  
530 lb. oats  
530 lb. wheat or corn  
300 lb. cottonseed or soybean meal  
20 lb. iodized salt  
20 lb. dicalcium phosphate

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2000 lb.

78% T. D. N.  
14% Crude Protein

## Ration No. 2

900 lb. barley  
380 lb. wheat or corn  
380 lb. beet pulp  
300 lb. cottonseed or soybean meal  
20 lb. iodized salt  
20 lb. dicalcium phosphate

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2000 lb.

78% T. D. N.  
14% Crude Protein

## Ration No. 3

700 lb. barley  
630 lb. oats  
630 lb. wheat or corn  
20 lb. iodized salt  
20 lb. monosodium phosphate  
or sodium tri poly phosphate

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2000 lb.

77% T. D. N.  
8.9% Crude Protein

## Ration No. 4

1000 lb. barley  
480 lb. wheat or corn  
480 lb. beet pulp  
20 lb. iodized salt  
20 lb. monosodium phosphate  
or sodium tri poly phosphate

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2000 lb.

77% T. D. N.  
8.8% Crude Protein

If a cow weighing 1300 to 1400 lbs. producing 3.5% milk is fed about 15 lbs. of alfalfa hay and 40 lbs. of corn or grass legume silage, either of rations No. 1 or 2 could be fed. If a cow is receiving 35 lbs. of good quality alfalfa as the only roughage, rations No. 3 or 4 could be used.

A 900-lb. cow producing 5.0% milk, if fed 10 lbs. of alfalfa hay and 30 lbs. corn or grass legume silage, could be fed grain rations No. 1 or No. 2. If cow is fed 25 lbs. of good quality alfalfa as only roughage, grain rations No. 3 or 4 could be fed.

Mill run or bran can be used in any of the above rations when they can be purchased at a cost comparable with other grains. They are a little higher in protein and lower in total digestible nutrients than barley, oats, wheat, corn or molasses dried beet pulp.

Some dairymen feed grain according to milk production and a milk-grain price ratio. A thumb rule is to feed 1 lb. of grain to every 3, 4 or 5 pounds of milk produced daily. This rule should be used **only** as a guide, as the amount of grain fed will vary with each cow according to her production, body size and condition, and stage of lactation.

The amount of grain you feed may also depend on the price you receive for your milk and the price you pay for the grain. Of course more grain can be fed when milk prices are high and grain costs are low, provided enough more milk is given to pay for the extra feed.

Another method of feeding grain is called lead feeding or challenge feeding. The basic objectives are: (a) To prepare the cow for high milk production by feeding grain before calving. (b) To challenge the cow early in lactation (when she has a great desire) to produce to her maximum production potential by high grain feeding (lead feeding). (c) To reduce grain feeding as production declines after peak production is attained.

This method differs from "feeding according to production" because you actually feed the cow more than she needs for the amount of milk she is producing in order to stimulate her to produce more milk. Frequently, when cows are "fed according to production" they are not stimulated to produce to their maximum profitable level of production.

Here is a suggested formula for developing a lead feeding program: (1) Feed springing heifers and dry cows  $\frac{1}{2}$  to 1.0 pound of grain per 100 pounds of body weight (vary according to body condition and appetite) 2 weeks before calving. (2) Continue this program for 4 days after calving. (3) After 4 days increase grain 1 pound for each 3 pounds of milk above 30 pounds per day. (4) Continue to increase grain as long as the cow continues to increase 1 pound of milk (when milk is 4¢ per pound and grain is 3¢ per pound) for each additional pound of grain. Continue feeding at this level as long as she maintains milk production. (5) For every 3-pound drop in daily milk production, decrease 1 pound



of grain daily. Any feed change should be made gradually. Do not attempt to get on full feed too quickly. It may take 2 weeks or longer. Whenever grain is left in the manger, reduce the amount fed considerably at the next feeding. If your cow goes off feed, cut way down on the amount for a feeding or two and gradually build back.

**Lead feeding** as described above is an individual cow proposition where each cow is fed grain as an individual. In many cases dairymen find it difficult to use this method under some conditions such as large herds and milking parlors. Some have adapted the principle of lead feeding to their conditions by grouping their cows according to production and feeding extra grain in the lot. Group feeding doesn't allow close control of each animal but is more profitable for some dairymen. Likewise, some dairymen have altered lead feeding to fit their particular economic conditions. For example, rather than feeding 1 pound of grain per 100 pounds of body weight before calving, they may feed  $\frac{1}{2}$  pound or cut back on the length of the pre-calving feeding period. In addition, they may change the grain-milk ratio from 1:3 to 1:4 or 1:5. The important point is to make the most profit possible from a cow or herd. High milk yield is very important but it does not always mean maximum profit.

**Minerals**—Minerals are just as important for cows as they are for calves and heifers. Salt is a must in every animal's diet. In most areas of Washington, Oregon and Idaho it is good insurance to provide iodized salt and trace mineralized salt to protect against an iodine mineral deficiency. Your cow will also need calcium and phosphorus. Good quality hay is high in calcium and will provide plenty of calcium. Steamed bone meal or dicalcium phosphate will provide protection against calcium or phosphorus deficiency.

It is recommended that iodized salt and steamed bone meal or dicalcium phosphate be added to the grain mix at the rate of 1 lb. each per 100 lbs. of grain. Many dairymen like to provide salt and minerals "free choice" (in separate boxes) for those cows that like more and for those that are getting little or no grain.

In rations No. 3 and 4 under "Grain Rations For Dairy Cows," monosodium or sodium tri-poly phosphate has been suggested as a source of phosphorus. These minerals have no calcium. Thus, when a high-calcium feed like alfalfa is fed in large amounts, by using minerals free of calcium the calcium-phosphorus ratio can be more nearly maintained at 2:1, 1:1 or 1:2 ratio.

**Vitamins**—A good ration will generally provide all the vitamins a cow needs. Seldom will it be necessary to add vitamins to your cow's diet. With poor roughage in winter, it may be necessary to add vitamins A and D. Dehydrated alfalfa

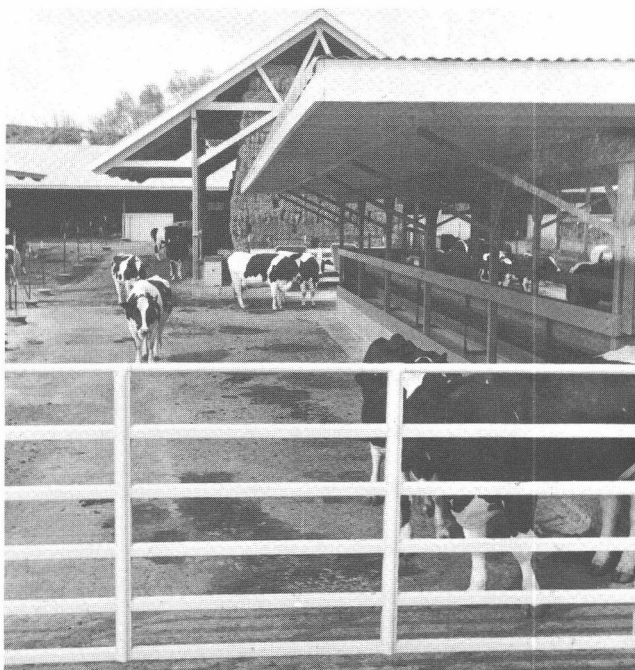
meal is a good source of vitamin A. Vitamin D can be added by putting a small amount of irradiated yeast in the grain ration. Ordinary sunshine is the best and cheapest source of Vitamin D, however.

**Water**—It is very important that your cow has a clean, fresh supply of water available at all times. A big cow, producing heavily, will need 25 to 30 gallons of fresh water a day. Remember, never forget to water your animals. If you deprive cows of water, they will short you on milk.

## Making Progress

After you have kept records on one animal for 3 or 4 years continuously, it should be quite easy for you to get an idea of what it costs to raise and care for the animal. If you have kept accurate records right from birth or when you purchased your calf, you can total up the costs and know what it costs to raise your animal to the production period. This cost should be considered as an overhead expense of producing milk. After your heifer has freshened and is in production you can add each month's costs to the other total costs and subtract the value of the milk for the month. About the end of the second lactation your cow should have paid back all costs and start making money for you. This illustrates the economic importance of longevity in a dairy herd. Keep records all year around.

The next step is to apply what you learned to other cows and the rest of the herd. The herd will probably be fed and managed differently than



Dividing cows according to production.

your 4-H animal, so possibly the same cost figures will not apply. After you have done a careful job with your 4-H cow for 3 or 4 years, you may want to become more involved with dairy herd management. Talk it over with Dad and see what arrangements you can make in the care and management of the herd. Dad will probably be pleased to have you keep complete records if you assure him you will be accurate and sincere in your work. Always use your records to make improvements in the management and care of your herd.

## Cow Talk

**Artificial insemination (artificial breeding)**—To breed a cow manually with semen collected from a bull.

**Bacteria**—One-celled plants found in or on almost everything; so small they can be seen only with a microscope. Germs are bacteria. Some bacteria are good—others are not.

**Bang's disease (brucellosis)**—A disease causing animals to lose their unborn young before they are due.

**Calves**—Young cattle under 12 months old.

**Carbohydrates**—Nutrients in food that provide energy to keep animals warm and for movement and body functions. Sugars and starches. Extra carbohydrates are stored in the body as fat.

**Chlorine solution**—A chemical solution containing chlorine used in sterilizing milk pails, cans, and other utensils to kill bacteria. Not used for cleaning.

**Colostrum (ko-los-trum)**—The milk given the first few days after birth of young.

**Concentrates**—Feeds high in food value (TDN): grains.

**Contaminated**—Dirty, polluted, soiled, or unclean; contains germs or other undesirable materials; unfit for certain uses.

**Cull**—An undesirable animal; one that is unprofitable, low-producing, or poor type.

**Dairy character**—Free of excess flesh, lean, angular, clean-cut, alert; not wild or nervous; characteristics desired in dairy cattle, in contrast to beef animals.

**Dam**—A female parent; mother.

**Dehorn**—To remove horns or prevent horns from growing on animals.

**Forage**—Plants eaten in their natural growing state, fresh cut or preserved as silage, hay, etc. Roughages.

**Gestation Period (jes-ta-shun)**—Length of time an animal carries its young during pregnancy. (Period from breeding to calving.)

**Green chop**—Freshly cut forage fed to livestock.

**Heart-girth**—The chest measurement of an animal, made around the body just behind the front legs.

**Inheritance**—Traits and characteristics that animals get from their parents and grandparents.

**Lactation**—Milk-giving period from freshening date to dry period, or next freshening date.

**Legumes**—A group of pod-bearing plants grown for livestock feed; such as, clovers, alfalfa, vetches, peas, and beans. High in protein.

**Mammary system**—Organs and glands which make, secrete, and store milk. In cattle, the udder, milk veins, teats, etc.

**Mastitis**—(mas-ti-tis)—Disease of the udder of milk-producing animals. Germs may cause stringy, lumpy, bloody, or watery-looking milk. The whole udder may become enlarged and feverish. Sometimes animals lose milk-producing ability from having had mastitis.

**Mature equivalent**—Milk and milkfat production of a cow of any age, adjusted to mature age, 305 days and twice-a-day milking.

**Milk veins**—Large blood vessels that show on the surface of the udder and underline of milking cows. Milk veins carry blood away from the udder back to the heart.

**Minerals**—Chemical elements in food that aid development of bone, hair, teeth, and normal body functions.

**Parasites**—Plants, insects, or small animals that live in or on other living plants or animals; internal parasites—stomach worms, grubs, etc., external parasites—lice, mites, etc.

**Proven sire**—A bull with enough daughters whose records of milk and milkfat have been compared with their dams. Shows how the bull influences the production of his daughters above or below that of their dams. A record of a bull's ability to transmit milk and milkfat production.

**Sanitation**—Keeping things clean. Keeping equipment, stalls, and buildings free from conditions that might damage the health of livestock.

**TB (tuberculosis)**—The common term used to speak of the infectious disease, tuberculosis.

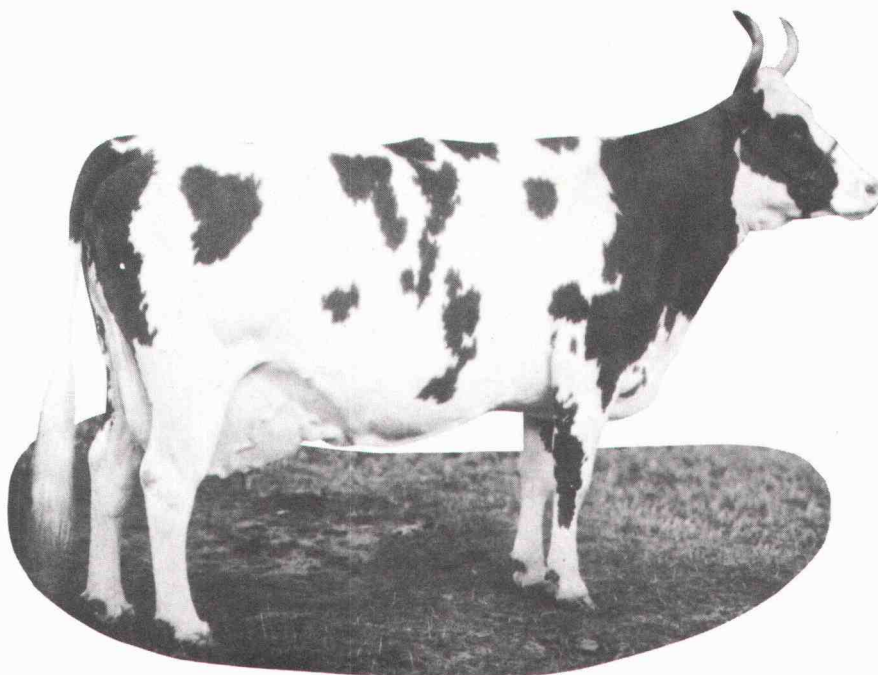
**Udder**—The milk gland of mammals (animals that suckle their young), having two or more nipples or teats.

**Yearling**—A young animal between 12 and 24 months old.

# YOUR 4-H DAIRY PROJECT CALENDAR

You should plan and make some kind of calendar at the beginning of the year to remind yourself what to do and when to do it. This may give you an idea of the type of things to put in the calendar:

January	Lice control.	Date Cow Freshens	
February	Cattle grub control. Lice control.	1st Month	Start slow, then build up concentrate feeding. Test cow for B.F. production. Feed all the good quality roughage cow will eat every day—hay or pasture.
March	Cattle grub control.		
April	Cattle grub control. Put cattle on pasture. Start fitting cattle for early shows.	2nd Month	Weigh milk and test for butterfat production.
May	Fly control. Fit cattle for summer shows.	3rd Month	Breed cow. Weigh milk and test for butterfat production.
June	Fly control. Provide summer shade. Complete 4-H record book. Secure winter hay supply.	4th Month	Weigh milk and test for butterfat production.
		5th Month	Weigh milk and test for butterfat production.
July	Fly control. Fit for dairy shows. Prepare for county and district dairy shows.	6th Month	Weigh milk and test for butterfat production.
		7th Month	Weigh milk and test for butterfat production.
August	Fly control.		
September	Fly control.	8th Month	Weigh milk and test for butterfat production.
October	Provide for protection during winter. Take cattle off pasture. Start new 4-H record.	9th Month	Weigh milk and test for butterfat production.
November	Develop 4-H club dairy demonstration. Watch milking procedure to curb mastitis infection. Clip flanks, udder and tail to assure clean milk during winter.	10th Month	Weigh milk and test for butterfat production.
		11th Month	Dry cow off to give her at least eight weeks rest. Feed two lbs. per day concentrates to build body fat.
December	Lice control.	12th Month	Provide clean, dry quarters for cow to have calf.



**A PACIFIC NORTHWEST COOPERATIVE EXTENSION PUBLICATION**

Published and distributed in furtherance of the Acts of May 8 and June 30, 1914, by the University of Idaho Cooperative Extension Service, James E. Kraus, director; the Cooperative Extension Service, Oregon State University, Gene M. Lear, director; the Washington State University Extension Service, John P. Miller, director; and the U. S. Department of Agriculture, cooperating. 4 M(2-1-1) 6-71.