

H-2



UNIVERSITY OF IDAHO

College of Agriculture

4-H Dairy Handbook

DIVISION II



**IDAHO Agricultural
Extension Service**

**Bulletin 288
February 1958**

Your Yearling Heifer

IN your second year's 4-H Club work you will learn how to care for the yearling heifer. You will find out how to give her the right feed and care so she can become a good cow.

THIS YEAR'S ACTIVITIES

1. Start your year's work in November by getting your hand-book and record book from your leader.
2. Check your equipment for repairs and to see whether your heifer has outgrown her halter and blankets.
3. Arrange for her feed and a place to keep her.
4. Record your heifer's growth each month (weight and height).
5. Practice judging every chance you get. Judge every cow you see.
6. Show your heifer at the spring show and fall fair.
7. Choose a sire to mate your heifer. Visit dairy farmers who keep herd sires, to learn the points they consider important in choosing a sire. Record the breeding date and the date she is due to freshen in your record book.
8. Help new members with their club work.
9. Figure how much it costs to feed your heifer this year (12 months). Record the amount of feed she eats each month in your record book.
10. Give your report to your leader at the end of the club year. This will earn an achievement certificate for you.

4-H DAIRY HANDBOOK

Second Year-Division II

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YOUR calf has grown to be a yearling. This year you will have new problems in her care and management. You will find these problems easier than last year's but they will be equally interesting.

GROW YOUR HEIFER WELL

It is very important to take good care of your calf after she is 6 months old because well-grown heifers are more likely to be good cows. They produce more milk if they are well fed and not neglected. Heifers that are well-grown can freshen earlier and start paying for their feed sooner. They look better and will sell for more money. They look better at the fair, too.

WATCH HER GROW

Weigh your heifer, or tape her heart girth every month and record her weight in your record book. Compare her weight with the chart in Table 1 to see if she is as big as she should be.

You can measure her height by standing her up beside a wall and marking where her withers come. Be sure she stands up straight. Use a square or a small board with a square end laid on her withers to mark on the wall. Measure from the mark on the wall to the floor and this will tell you how tall she is. Compare this with the chart to see if she is as tall as she should be.

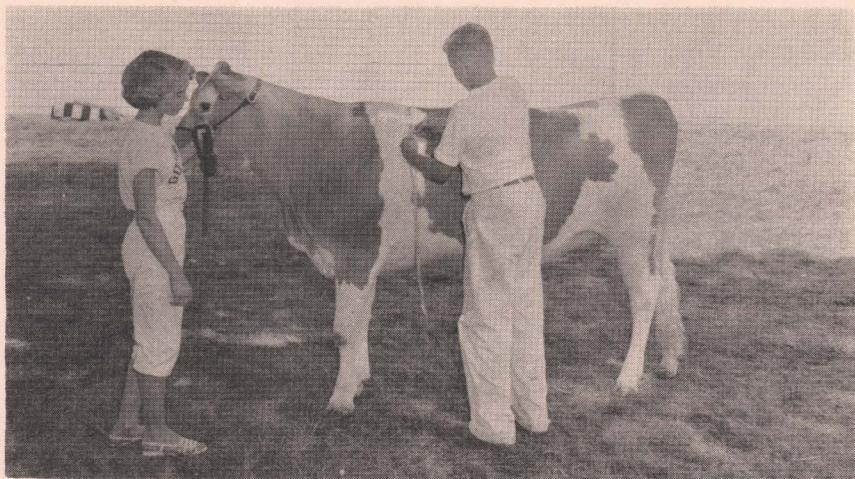
Table 1—Average weight and height at withers from birth to 2 years old.

Age in Mo.	Ayrshire (1)		Guernsey (1)		Holstein (1)		Jersey (1)		Shorthorn (2)	
	Wt. Lbs.	Ht. Inches	Wt. Lbs.	Ht. Inches	Wt. Lbs.	Ht. Inches	Wt. Lbs.	Ht. Inches	Wt. Lbs.	Ht. Inches
Birth	71		65	26.6	91	28.9	54	25.8	73	
1 month	86	28.4	79	28.4	113	30.5	68	26.9	118	31.1
2 "	174	31.2	105	30.0	150	32.2	92	28.8	133	32.1
4 "	190	32.0	177	33.7	250	36.2	164	32.7	225	35.8
6 "	281	35.3	267	37.2	365	39.8	250	36.2	316	38.5
8 "	371	37.7	350	39.9	474	42.4	331	39.1	419	41.1
10 "	451	39.6	427	41.7	568	44.6	402	41.0	538	43.3
12 "	518	42.6	490	43.3	653	46.2	462	42.3	547	44.4
14 "	592	43.8	556	44.6	725	47.6	518	43.5	579	45.4
16 "	635	44.8	605	45.3	795	48.8	568	44.5	627	47.0
18 "	690	45.7	663	46.4	861	49.7	615	45.3	668	47.7
20 "	743	46.5	712	47.0	928	50.6	658	46.0	728	48.5
22 "	790	47.3	763	47.7	999	51.3	702	46.6	741	49.1
24 "	845	47.7	818	48.0	1075	51.9	752	47.0	845	49.8

(1) Taken from Morrison's Feeds & Feeding, 21st Edition.

(2) Taken from Dairy Cattle & Milk Production—Eckles, 2nd. Ed.

If you do not have scales to weigh her, you can estimate her weight by measuring her around the heart girth and referring to the table on page 10 in your Division I Handbook.



Measuring heart girth.



Marking a heifer's height at withers on a wall.



Measuring from the mark to the ground.

If your heifer is not as big as the chart says she should be, try to figure out why. These are some of the reasons she might be small: (1) not enough to eat, (2) disease, (3) lice, (4) worms, or (5) her ancestors were small. When you have found what caused her to be small, you will know what to do to make her grow better.

If she is too heavy, you should reduce her feed. Too much fat inures her udder glands and she will not milk as well as if she is more nearly normal.

FEEDS TO USE

When your calf is 6 months old you can put her in good pasture. Give her some good hay every day until she gets used to the pasture. Give her 2 to 4 pounds of grain a day until she is nearly a year old, depending on her size and condition. If the pasture is good she can get along very well without grain after she is 8 to 10 months old.

Fall and Winter Feeding

Be sure to give her plenty of hay when the pasture slows down. You may need to start early in September with irrigated pasture. If you do not irrigate your pasture you will have to start feeding hay earlier. Watch your pastures closely so she will not get thin before you start feeding her hay.

Alfalfa or clover hay is best for growing heifers because it furnishes plenty of protein and minerals for normal growth. Bromegrass, orchardgrass and intermediate wheatgrass make good hay if they are cut when they start to head out. It is better to feed some alfalfa or clover with them.

Silage

Silage is a good feed for heifers. Either corn silage or grass silage will work fine. Feed her about 3 to 5 pounds of silage for each 100 pounds she weighs. If she weighs 500 pounds, feed her from 15 to 25 pounds of silage. Give her all the hay she will eat along with her silage. Give her some grain if she needs it to make normal growth. If the hay and silage are good quality she should not need any grain after she is 8 to 12 months old.

Grains

If your heifer needs grain, you can give her the same kind you used last year. The grain mixture your father feeds his milk cows will be very good. Any low-protein grain mixture will be satisfactory.

If you are feeding hay made from grass or grain crops, you will need to add about 10 percent cottonseed meal, soybean meal or linseed meal to your homegrown grains. Since these feeds are expensive, it is better to feed alfalfa or clover hay if you can get them.

Minerals

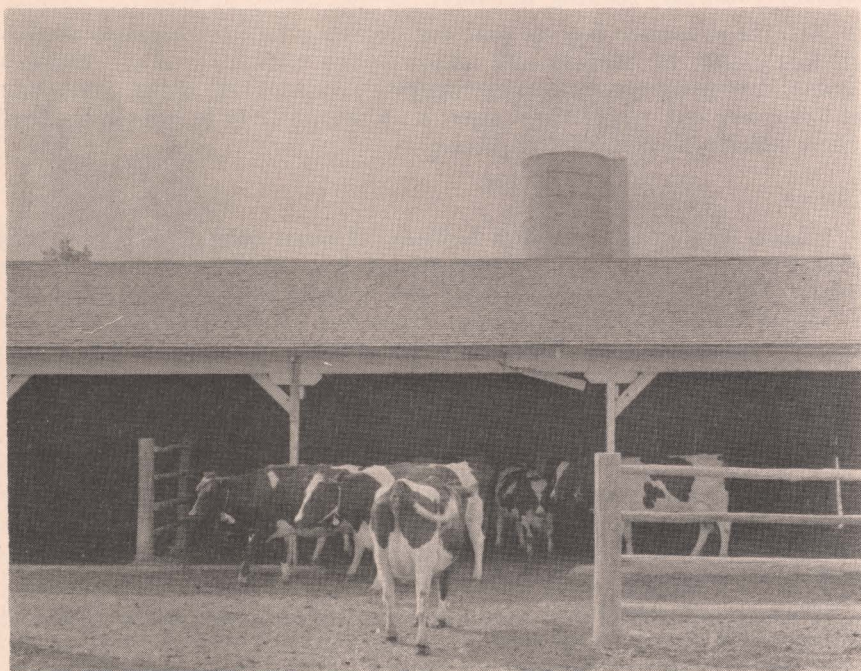
Be sure to give your heifer all the iodized salt she wants. Put it in a box where she can get it when she wants it. She will not need any other minerals because she will get what she needs from the clovers in the pasture and the alfalfa or clover hay she eats.

Water

Give her all the fresh clean water she wants, three or more times every day. She will like water right out of the well. It will be the right temperature both summer and winter. If she does not get enough to drink she will not eat enough feed and will not grow as well as she should.

Vitamins

You will not need to feed her any vitamins if she has pasture, green hay and sunshine. If you have to feed brown, overripe hay you should give her some vitamin A and vitamin D. A teaspoonful of cod liver oil on her feed every day will give her enough of these vitamins.



A good shed like this protects cattle in summer and winter.

Shelter

You should provide a good shed for her in the wintertime. She will be more comfortable and will grow better if she has a dry place to sleep when the weather is bad. She will like some shade in the summertime, too.



A good place for heifers in the summer.

PREPARING YOUR HEIFER FOR FRESHENING

You should feed your heifer a little grain the last three months before she freshens. She will give more milk if she is in good condition and is used to eating grain when she freshens. If her pasture or hay is good, she will not need more than 2 to 4 pounds of grain per day. Feed her the same kind of grain mixture you are going to feed her after she freshens.

Bring your heifer into the milking barn with the other cows for a few weeks so she will get used to the milking barn and the feeding routine. You can watch her more closely and get her used to being handled. She will be easier to break to milk if she is used to coming into the barn. If her udder swells too much, quit feeding her grain 2 or 3 weeks before time for her to freshen. Do not give

her more grain until several days after she freshens and the swelling has gone out of her udder. Start her out with 2 or 3 pounds a day and increase it slowly until she gets as much as you think she needs. Take a month or 6 weeks to bring her up to full feed of grain. Give her all the good hay or pasture she wants all the time.

Age for Freshening

If your heifer is good sized and well grown out, you can have her freshen when she is about 2 years old. Jerseys and Guernseys mature quicker than the other breeds and can freshen a little under 2 years old. It is better to have the larger breeds like Holsteins and Brown Swiss freshen when they are 26 to 28 months old. This means that Jersey and Guernsey heifers should be bred at 14 to 16 months of age; other breeds at 16 to 18 months of age.

THE SIRE OF YOUR NEXT CALF

You want your next calf to be better than her mother. Mate her with the best sire you can find and chances are that you will get a better calf.

Proved Sires

The surest way to get a better calf is to mate her with a good proved sire. A proved sire is a bull that has 10 or more daughters that have been tested for milk production. A good proved sire's daughters give more milk and butterfat than their dams. The daughters should average more than 400 pounds of butterfat. Choose a sire that has good type. He should be large, straight, stylish, dairylike and sound. Look at his daughters and you can tell whether he is siring good type. Compare them with their dams. You have a better chance to get a good-type calf if you can use a sire whose daughters have better type than their dams. Check the official type classification records on him and his daughters.

Young Sires

If you cannot find a proved sire, the next best is to use a young sire with a good pedigree. His most important ancestors to check are his sire and dam. His sire should be a good proved sire. His dam should be an outstanding cow for type and she should have a high production record. She should have a record of at least 400 pounds of butterfat in 10 months on twice a day milking. It is better if she has three or more records over 400 pounds. Her daughters should have records of 400 pounds or more. The more tested relatives there are in his pedigree, the more assurance you have that he will sire good calves.

You can tell more about the pedigree if his near relatives have been officially classified for type. This means that a trained judge appointed by the national breed association has rated the animal on type. All the breed associations use similar terms for the type scores. This list will help you understand them.

Excellent (E) = 90 points or more

Very Good (VG) = 85-89 points

Good Plus (GP) = 80-84—(Guernsey—desirable)

Good (G) = 75-79—(Guernsey—acceptable)

Fair (F) = 70-74

Poor (P) = below 70

The breed associations cancel the registration papers on cows classified "poor." They do not register bull calves from cows classified "fair." You should try to pick pedigrees showing animals that have classified "good plus" or higher.

This example will show you how pedigrees are written. Place the most importance on the records of the daughters of the sires and the records of the cows. Records of distant relatives like cousins have little value to you.

Bull Calf	{	Sire		Grand Sire	
		Proved sire		10 daughters	14,124 lbs. milk
		16 daughters	14,176 lbs. milk		491 lbs. fat
			511 lbs. fat	10 dams	13,011 lbs. milk
		16 dams	13,262 lbs. milk		440 lbs. fat
			459 lbs. fat	Difference	+ 1,113 lbs. milk
		Difference	+ 914 lbs. milk		+ 51 lbs. fat
			+ 52 lbs. fat	Grand Dam	
		16 classified daughters		2 records average	
		average 84 points		12,621 lbs. milk	517 lbs. fat
		Classified VG			
		Grand Sire			
		10 daughters	13,264 lbs. milk		
			492 lbs. fat		
		10 dams	11,709 lbs. milk		
			417 lbs. fat		
		Difference	+ 1,555 lbs. milk		
			+ 75 lbs. fat		
		Grand Dam			
		3 records average			
		10,363 lbs. milk	427 lbs. fat		
		Classified VG			
		2 daughters average			
		12,548 lbs. milk	464 lbs. fat		

A good pedigree showing high-producing ancestors with good type scores.

This example is not the pedigree of any known animal. It was made by selecting desirable proved-sire ratings from U.S.D.A. news letters and records for cows to illustrate the kind of information you should look for in a young sire's pedigree. All the sires in this pedigree have daughters that have higher records than their dams. All the dams have high production records.

Try to see as many of these relatives as you can. Find out whether they mature quickly or slowly. Cows should produce well until they are 8 years old or older. They should be easy, fast milkers and should calve regularly every 12 or 13 months.

The young bull should be healthy, good looking and large for his age. Study the true type bull pictures for your breed. Look at the pictures of prize winning bulls in farm magazines. Try to pick bulls that follow this pattern.

Artificial Insemination

Artificial insemination for dairy cows is available in nearly every county in Idaho. Ask your technician for the pedigrees and ratings on his bulls of your favorite breed.

COMMON AILMENTS OF DAIRY HEIFERS

Watch your heifer every day for signs of sickness or injury. Early treatment will help her get well quicker. It may even save her life. Call your veterinarian right away if there is anything seriously wrong with her. Here are some of the things to watch for:

Bloat

Bloat is caused by eating too much gas-producing feeds like young alfalfa or clover, potatoes or very leafy fine-stemmed alfalfa hay. It causes her sides to swell out tight. She will breathe hard and act like she is in pain.

If she bloats, try to get her to stand with her front feet on a pile of dirt or something much higher than her back feet. Sometimes it helps to give her about a pint of mineral oil. Get your father or leader to help you, if your veterinarian is not quickly available. Another treatment is to put a small, smooth garden hose, with the coupling cut off, down into her paunch to let the gas out. Be very careful not to put the hose down her windpipe as that would choke her. As a last resort, you may puncture her left side about halfway between her hip bone and her last rib with a trocar or a knife.

The best thing is to keep her from bloating. Do not let her have very much of any of the "bloaty" feeds at one time. Give her some dry hay **BEFORE YOU TURN HER INTO NEW PASTURE.** Watch her closely.

Ringworm

Ringworm appears as round gray, scabby spots. It is more common around the head and neck but it may appear anywhere on her body. You can cure it with iodine or iodized ointments. Put the ointment into the spot and into the hair for an inch or more around the spot. Treat every day for a week or more until the new hair comes back in the bare spot.

Lice

Lice make your heifer appear unthrifty. They are worse in the winter than in the summer. They make her rub and scratch and she will lose patches of hair. She may even rub sores on her skin.

You should spray or dust her with a good insecticide in the early fall. You can use rotenone or pyrenone on heifers and milking cows. Follow carefully the directions on the package. Treat the whole herd, so your heifer will not get more lice later on. Repeat the treatment every two weeks if lice reappear.

Grubs (Heel Flies)

Heel flies chase your cattle in the summertime, causing them to run crazily with their tails over their backs. The heel fly lays its eggs on the hair on the heifer's legs. The eggs hatch and the resulting larva appear as warbles on the heifer's back in late winter or early spring.

You can kill these warbles by spraying with $7\frac{1}{2}$ pounds derris powder dissolved in 100 gallons of water or dusting with a 5 percent rotenone powder when the warbles cut holes in the hide. Watch for bumps on her back in February and March. Be sure the spray or dust gets into the holes. Treat your heifer two or three times, about 30 days apart, before you turn her out to pasture. At the same time treat the whole herd to keep down the number of heel flies the next summer. Get your neighbors to treat their cattle too.

Warts

Warts are growths which may appear on the head and neck or teats of your heifer. They may stunt her growth. Warts on cow's teats interfere with milking. They spread from one animal to another.

Your veterinarian can vaccinate your heifer for warts. Usually one treatment is all that is needed. If there are only a few warts you can sometimes remove them by tying a thread tightly around the base of the wart. Leave the thread on and the wart will drop off in a few days.

Infectious Diseases

Successful dairymen take steps to have their heifers vaccinated against the preventable infectious diseases common to the community in which they live.

Some of the vaccines are highly efficient while some produce only temporary immunity. In case only temporary immunity is produced, additional vaccinations to maintain a high level of resistance is necessary. Your veterinarian can advise you regarding these diseases and the necessity for additional vaccinations.