

Beef Cattle Feeding

COOPERATIVE EXTENSION SERVICE

By DR. C. C. BECK, EXTENSION SPECIALIST

College of Veterinary Medicine

THE FIRST TWO to three weeks after arrival of feeder cattle are perhaps the most critical time they will spend in the feedlot. It is this time for which the feedlot operator must be prepared. He must almost live with the cattle during this time—he must be an accurate observer—he must know and be able to distinguish the normal from the abnormal and then take the necessary precautions and steps to cope with problems that may arise.

What can the feedlot operator do?

A. Be prepared.

1. **SOURCE.**—Know the areas of the country where these cattle originated. Cattle from drought areas are more liable to be deficient in Vitamin A and other nutrition factors than cattle from good range country. Experience has shown that cattle coming from the Southeastern areas are liable to be more heavily infested with parasites than cattle out of the Southwest. Native cattle generally have fewer problems than those from the West.

2. **AGE.**—The problems you may expect will vary with age of the cattle. Yearlings usually have less shipping fever than younger cattle and weanling calves.

Weanling calves require a higher percentage protein and require more care in getting started on feed than older cattle.

3. **SEX.**—Sex is insignificant as far as health and disease is concerned, but the operator should con-

Maintaining Health Of Newly Acquired Livestock

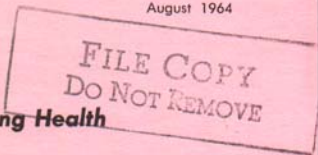
MICHIGAN STATE UNIVERSITY

sider separating a mixed lot for feeding purposes to minimize disturbances and to facilitate the earlier finishing of heifers as compared to steers.

4. **LAYOVER AND TIME ENROUTE.** — Cattle brought direct from ranch or range to feedlot in cleaned and disinfested trucks are less likely to have disease problems than cattle which have been through yards, sales rings, auction markets, etc. Exposure to other livestock, drinking out of slime-covered watering devices and eating out of hay racks previously drooled on and slobbered on by cattle are excellent means of spreading disease.

Knowledge of the length of time cattle have been en route or around yards may give a clue as to what to expect in regard to shipping fever problems. The incubation period (the time from exposure until symptoms develop) for shipping fever is usually 7 to 10 days. Therefore, cattle which have been around yards for 2 weeks or more will usually have been through their exposure and incubation period, and their appearance will give a clue to their condition. Information on whether they have been treated—when and where, and what was used—are all beneficial bits of information.

In lots of heifers it is important to know whether they have been given hormone injections to produce abortions, in case any of them is pregnant. The routine blanket use of hormone injections on all heifers as they come through the yards is not recommended, though it is quite commonly practiced. Problems such as cystic ovaries, the chronic buller, prolapse vagina, dystocias on advanced pregnant animals, retained placenta, and metritis (uterine infection) subsequent to abortion are all too commonly seen.



B. Have facilities ready prior to arrival of cattle.

If you had made the trip that these cattle had—what would you desire upon arrival?

1. A good cool, fresh drink of water.

One of the common mistakes is to depend on automatic watering devices. Cattle coming off ranch and range may never have seen such devices and are skeptical of them. Be sure to provide a tank that is clean, readily accessible and placed in an area so that a mudhole will not develop. Leaving a faucet run a slow trickle of water will attract the cattle to the area. Adequate drinking water is very important in recovering from shrinkage losses, maintaining health, and as a means of medicating livestock when needed.

Regardless of what type of watering devices you use, be sure that they are kept clean. Nasal discharge from sick cattle floating on top of water tanks serves as a means of spread of infection to other cattle. Twice daily cleaning from the first 2 to 3 weeks is effort well spent.

2. A clean, well bedded, well ventilated place to lie down and rest.

Be sure to have your lots and sheds or barns cleaned and ready before the cattle arrive.

For those who buy very thin cattle and intend to start them out on pasture, start them in a small lot up close to the building where you can keep close check on them. Do not turn them into woodlots, swamps and back pastures where observation and handling of sick individuals is difficult or impossible. Likewise, do not turn feeder cattle into lush legume pasture. Severe bloat and diarrhea may result.

C. What about feed?

Every feedlot operator has his own choice and ideas as to how best to start cattle on feed. It is understandable that he would like to get these cattle on feed as rapidly as possible, but a bit of caution is essential.

Most cattle will have come off grassland or pasture of some type. Green chop will readily be consumed and is perhaps one of the best starting feeds, if available. Grass, sorghum, corn, and other succulent feeds work fine in green chop. Legumes such as alfalfa must be used more cautiously due to the possibility of bloat.

Where green chop is not available, a grass-type hay should be made available. Legume hays of high

quality should be avoided, if possible, as mentioned previously. It is well to have some grass-type hay available, even if green chop or silage is being fed, at least for the first 2 to 3 weeks. Cattle sometimes seem to desire dry roughage.

Oats is probably the best grain for starting cattle. Two to three pounds per head fed in the auger bunk, fence-line feeders or other types of mangers will get the animals accustomed to coming up for feed and get them used to the feeding devices and mechanisms.

Cattle can be started on silage within the first week. This will vary, depending upon the numbers of cattle being fed. If other cattle on the premises are on silage, it usually presents no problem but it is difficult to keep ahead of spoilage if only small quantities are being consumed. Numbers of cattle, diameter of silo and related facts must be considered on each farm in arriving at a feeding program on which to start the cattle.

Feedlot Health Management or "Common Sense"

Feeding time is the best time to observe the cattle and detect any which are not normal. Ordinarily after the first day or so, cattle readily become accustomed to the feeding routine. When the auger is started or self-unloading wagons go down the fence-line feeder, the cattle usually get up, stretch and move toward the feed bunks. Any animal which does not get up should be viewed, invited to get up via a gentle nudge from the toe and then if the animal does not appear normal, call the veterinarian.

Early detection and accurate diagnosis of disease is very important. The ability to recognize a sick animal early in the course of the disease is a trait desirable in any good stockman. This ability varies with individuals, and the degree to which it is accomplished may have a decided effect upon the extent of a disease outbreak in a feedlot. When you notice sick animals, consult your veterinarian for an accurate diagnosis and proper treatment. The sooner treatment can be given, in most instances the better the result will be.

Handling Sick Animals

One of the common deficiencies in many feedlots is a facility in which to handle livestock. Sick animals should not be roped, choked, snubbed to posts or similar type of handling, as are commonly seen. This adds stress to an already stressed individual. It is dangerous to the animal and to humans involved in handling of the animals. The cost involved in the

construction of adequate handling and restraint facilities are often less than a hospital bill in case of human injury, such as broken arms and legs. Furthermore, properly designed facilities make it easy to conduct such routine practices as loading or unloading, weighing, sorting, identifying, worming, spraying, vaccinating and treatment of livestock.

Careful planning should precede the construction of such facilities. They need not be fancy, but must be sturdy, functional, and require a minimum of manpower and effort to operate. Railroad ties and rough sawed planking can be used to make an economical and highly serviceable unit. In design of such a unit, consider holding pens, a chute, a scale, sorting device and a running chute in which animals can be sprayed, vaccinated and other tasks performed.

Sick animals should be taken to the service area, put in the chute for examination, diagnosis and treatment and then put in a holding pen or quarantine area. If such facilities are not available, gates can be utilized. Fasten the gate so the animal can be run in, squeezed up and thus confined for examination and treatment. Be sure to identify animals treated and keep records on the individuals treated in the feedlot. Accurate identification and records are seldom kept, but in feedlots where they are, the records often explain why a certain individual or group does not perform as well as other individuals or groups in the herd.

A common mistake is to treat an animal in this way: let it go and assume it will be all right; or if held in quarantine and it brightens up within 12 to 24 hours and the temperature drops, let it go back in the feedlot. This animal's response due to antibiotic, sulfa or other therapy may not be permanent; the animal's temperature may rebound after the effect of the medication is worn off and then relapses occur. Relapses are much more difficult to control than the original infection and may lead to chronic cases such as so-called "chronic lungers" occasionally seen in feedlots. Animals should be observed closely for 3 to 4 days after the last treatment, and then if normal, returned to the feedlot.

Colored Crayons Will Help

Colored marking crayons or pressurized can spray-on devices can be used to denote treatments. For example, use green for the 1st treatment, yellow for 2nd, red for 3rd. This way at a glance you can see which animals have been treated, frequency, etc. Other color combinations, or a variety of locations on the body for markings, will be usable to distinguish

types of treatment where more than one line of therapy is used.

Animal's failing to respond to therapy should be re-evaluated as regards the diagnosis. An accurate diagnosis is fundamental to good therapeutic results. Failure to respond to treatment often indicates resistant disease agents or the improper selection of drugs.

What about medicated starter feeds, feed additives and related substances for feeder cattle?

First of all, going off feed is one of the first symptoms when animals start to get sick. Livestock will continue to drink water after they have quit eating. Therefore, water-soluble forms of medication are preferable to feed-additive forms. The suggestion regarding the use of water tanks, in preference to automatic drinking cups, also makes water medication feasible.

1. **Antibiotics are not commonly used as water additives.**—Many of the disease problems encountered are not responsive to antibiotics in this form. It is expensive, and there are problems of palatability, adequate dosage and side effects.

2. **Sulfas are more commonly used.**—There are a great variety of sulfas: some mainly for intestinal infections, some for lung (respiratory) infections and others designed for specific types of infection or to functions in certain parts of the body. Ask your veterinarian for the proper medication for the problem at hand. There is no "miracle" or "cure-all" drug. Each drug has a place and will do a job if used properly.

3. **Vitamin preparations may be beneficial in some cases, especially Vitamin A.**—Cattle arriving from poor grazing areas, drought areas, etc., may be very deficient and respond markedly to Vitamin A. This vitamin is responsible for maintaining the health of the tissues in the body that defend the animal against the introduction of diseases. Clinical signs of Vitamin A deficiency are often lacking or are not apparent until the animal is in poor condition. With some feeder cattle, poor rate of gain and poor feed conversion may be the first indication of Vitamin A deficiency. The best measure of this is by the use of the scale (weighing cattle at intervals to evaluate their performance).

Watery eyes may be a clue to Vitamin A deficiency. It must be differentiated from pinkeye, foreign body irritation, I.B.R. (Red Nose), B.V.D.

(Virus Diarrhea), and other diseases with eye involvement.

Vitamin A can be administered by injection, as a feed additive, or in water. Some of the injectable forms are slowly absorbed. The packing industry objects to finding sterile abscesses and deposits of injectables in carcasses. Feed or water additives overcome this objection. Once cattle are on feed, it is relatively simple by means of pre-mixes and metering devices to add 20,000 to 30,000 units per head per day to the ration. For cattle just entering the feedlot and not on feed, the water soluble Vitamin A is easy to use and very effective and is probably the route of choice.

It has been observed that cattle receiving supplemental Vitamin A upon arrival have a lower incidence of shipping fever and related problems as compared to unsupplemented control lots. More research is needed to clarify this situation.

4. Electrolytes are another important group of compounds.—They represent the mineral elements important to the health of the body. Any animal which has diarrhea and loss of body fluids (dehydration as it occurs in shrink) will have need for and benefit from electrolyte supplementation. Electrolytes are water soluble and can likewise be added to drinking water.

5. Expectorants.—This group of products would compare to what we call cough medicine. They aid in elimination of mucus, slime, and debris such as evidenced by thick nasal discharge.

6. Flavoring agents.—Cattle sometimes back off from medicated water. Various flavoring agents are often used to camouflage the medicine. Oil of anise, molasses, fruit flavored jello, Kool-Aid, or similar sweetening agents can be used to mask the flavors of drugs and thus aid in consumption of medicated water.

7. Growth stimulants such as estrogenic feed additives.—These are usually not added until cattle are well started on feed. They have no effect on incidence of disease or health, at the time under consideration, and therefore will not be discussed in this publication.

What about vaccines?

Vaccines and serums for the prevention, control, and treatment of shipping fever and related disease conditions have not been too successful. Within recent years a successful vaccine for I.B.R. (Red Nose) has been developed and is being effectively used. Very

recently (1964) a vaccine has been developed and licensed for use to prevent B.V.D. (Bovine Virus Diarrhea).

Research continues in an attempt to develop an effective vaccine against true shipping fever. For years this disease was thought to be due to a bacteria called *Pasteurella* and hence the name *pasteurellosis*. It was also called *hemorrhagic septicemia*, which describes the disease as seen in animals—blood poisoning with hemorrhage (loss of blood). It has been shown in recent years that a virus, or viral agents, is also involved. It requires a combination of the virus (Myxo virus S.F. IV or Para-influenza type III) the bacteria (*Pasteurella* sp.), plus stress to produce shipping fever. A vaccine, therefore, must take all of these factors into account, and it is hoped that research will solve these problems so that an effective vaccine can be manufactured for this disease.

Vaccinate Before Shipping

Ideally, any vaccine should be given to the animal 10 to 14 days prior to exposure to the disease. Therefore, cattle to be shipped should be vaccinated two weeks prior to leaving the ranch or range. Under Western range conditions, this is not possible. Therefore, most cattle arrive in the feedlot unvaccinated. How then should we proceed with a new set of feeder cattle?

As regards true shipping fever—there is no effective vaccine at present. The best advice is to use good judgment, a lot of common sense and be a keen observer.

The incidence of shipping fever in a feedlot may vary from 0 to 25%, or even more in an occasional lot. Where only small numbers are involved, individual treatment as cases arise is the most economical approach. When large numbers become involved, mass treatment via water plus supplemental individual treatment where necessary, will usually be the most economical. It has been observed that when feeder cattle are supplemented with Vitamin A, the incidence of shipping fever will be less than on similar lots not supplemented. Once actual cases of shipping fever occur, additional therapy will be necessary.

I.B.R. (Red Nose) and B.V.D. (Bovine Virus Diarrhea) often break out after the cattle have been in the lot for a while, and the shipping fever has been brought under control and the cattle are just starting on feed. Such outbreaks have often been viewed as relapses or cases of chronic shipping fever. Both of these diseases start out with respiratory symptoms—

rapid, noisy breathing and nasal discharge. These are both virus diseases, and therefore, there is no effective cure.

The prevention of these two conditions depends upon the use of vaccines. I.B.R. and B.V.D. vaccines can be safely used at the same time. (They should not be used on pregnant animals as they may cause abortion!) With healthy cattle—especially yearlings—which arrive in the feedlot in good shape, it may be well to vaccinate on arrival. Weanling calves or any animals which are stale, sick or in weakened condition, should not be vaccinated upon arrival. It is advisable to wait a couple of weeks to give these animals time for recovery prior to vaccination.

Keep in mind: *Vaccination Does Not Automatically Mean Immunity.* The animal's body must respond to the vaccine and produce antibodies which then provide immunity. This requires a healthy animal and takes 10 to 14 days. *Sick Animals May Not Respond Even Though Vaccinated.* There is no hard and fast rule to follow. Each lot must be evaluated and handled according to its own merits.

It has been noted that after animals are well started on feed, individual or several cattle may show signs of founder. This is a common finding after an outbreak of B.V.D. Founder is often attributed to feed, when actually it is a part of the disease picture seen in B.V.D.

In certain areas and on certain farms, other vaccination practices may be indicated. Blackleg, leptospirosis and enterotoxemia should be considered. This decision can best be made by the feedlot operator and his veterinarian who are familiar with the diseases in the area or on a particular farm.

What about parasite control?

Any successful feedlot operator must consider internal and external parasite control.

First: What parasites do the cattle have?

Grubs and lice are the common external parasites to consider. Neither may be obvious at the time of arrival, but make their appearance later in the feeding period. Lice may be of the biting or sucking varieties. Either type can cause economic loss and should be controlled. Grubs cause economic loss to the packer. This loss is passed on to the producer through a reduction in price paid for fat cattle.

The organic phosphate insecticides, as approved in recent years, are very effective in the control of grubs

and lice. *Be Sure to Follow Directions!* Dosage, concentration and timing are very important. Adhere to the specification of time as it applies to your area. *Be Sure* to inquire or read directions to avoid improper use of these products.

Internal parasites present different problems. The three most common types of internal parasites are round worms, tapeworms and coccidia. Each type produces different effects and requires specific treatments to eliminate them.

The common round worm of cattle is a stomach worm. It is a blood sucker and causes anemia. It is effectively removed with phenothiazine in therapeutic dosage or by low level feeding over a longer period of time.

Tapeworms cause intestinal irritation and may cause digestive disturbances. Phenothiazine will not destroy or remove tapeworms.

Coccidia are small protozoan organisms which invade the intestinal wall, causing irritation and diarrhea which is often bloody. This parasite likewise is not treatable with phenothiazine.

The only way to tell the difference between these parasites is to take a freshly collected fecal sample to your veterinarian or submit it to a parasitology laboratory for examination. The advisability and type of treatment needed is based upon the findings of this examination. The medication used for removal of tapeworms is very toxic and can cause problems and death of animals if not used properly.

What about dehorning?

It is preferable to buy only dehorned or hornless animals. This is not always possible. Do not be hasty! Do not further stress cattle by dehorning if they are already in weakened condition due to shipment and disease. Wait until the danger of shipping fever and related disease problems are past and then proceed to dehorn in as humane a way as possible with a *minimum of blood loss*. Improper dehorning weakens the animals and definitely slows down the rate of gain and feedlot performance.

WARNING: In areas where anaplasmosis is a problem and on cattle shipped in from anaplasma-infected areas, take precautions to prevent spread of this disease. Any transfer of fresh blood from animal to animal may spread anaplasmosis. Keep this in mind when dehorning, castrating, vaccinating, tattooing, trimming feet and other procedures.

Health factors to consider in contract purchase of feeder cattle?

1. Treatment for external and internal parasite control. (When organic phosphate compounds are used, they should be used within safe dates as they apply to the area of *origin*.)
2. Vaccination for such diseases as I.B.R. and

B.V.D. prior to shipment (10 to 14 days, if possible).

3. Dehorning of stock as calves to eliminate necessity of doing it after arrival in feedlot.
4. Other immunizations such as blackleg, if area situation and problems would so dictate.

Extension Bulletins such as this one are part of the educational services provided by the Cooperative Extension Service of Michigan State University. These services to the people of Michigan are financed jointly by your county, state, and federal governments. At the County Extension offices, agents can provide information and help on many farm, home, and community problems. They work in agriculture, home economics-family living, 4-H, marketing, and community and resource development. Publications on more than 500 subjects are available at the County Extension Offices, or from the MSU Bulletin Office, P. O. Box 231, East Lansing, Michigan.



Cooperative extension work in agriculture and home economics. Michigan State University and the U. S. Department of Agriculture cooperating. N. P. Ralston, Director, Cooperative Extension Service, Michigan State University, East Lansing. Printed and distributed under Acts of Congress, May 8 and June 30, 1914.

3P-2,65-10M-MO