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Backgrounding Calves Part 2: Herd Health and Feeding

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Backgrounding calves, or taking weaned calves at about 450 pounds and feeding them up to 750 pounds or so, is becoming more popular among cattle producers. It can be a profit maker for the producer who wants an alternative to the cow/calf business, wants to use excess forage or other roughages, has extra time during parts of the year, or wants to add flexibility to his current cattle operation.

In this section, we will focus on herd health requirements and feeding for successful backgrounding. There are many animal health problems to consider, especially if you will be purchasing most or all of the calves to be backgrounded.

Health

Keeping death loss and sickness to a minimum on new feeder cattle is basic to profitable backgrounding. A good health program begins by avoiding the purchase of sick animals or those exposed to sick animals. Newly weaned calves usually have more sickness problems than yearlings.

Preconditioned calves that have received their shots and been taught to eat grain should have less sickness. This is especially true for calves stressed by marketing and transportation procedures. Consult your veterinarian for recommendations on the vaccination and handling of new cattle.

Your veterinarian may recommend vaccinating, castrating and dehorning off the truck if the cattle are healthy and not highly stressed, or he may advise waiting a day until they have had time to drink and fill up on hay or other feed. Castration or dehorning should be delayed if cattle are overly stressed or sick.

Vaccinations include blackleg, malignant edema, IBR, BVD, PI_3, BRSV, Hoemophilus somnus and internal and external parasite control. Booster

vaccinations 6 to 10 days later may be recommended by your veterinarian. Close observance twice or more daily to detect sick animals is very important for the first three weeks after arrival.

Receiving rations

Getting calves to eat adequate amounts of a receiving ration is a problem. Receiving rations must be palatable and highly fortified with nutrients if stressed calves are going to consume close to their daily nutrient needs the first two weeks after arrival.

A variety of receiving rations have been used successfully. Studies at the University of California and New Mexico State University have indicated a receiving ration with 70 to 75 percent concentrates worked best for highly-stressed calves weighing 275 to 400 pounds. Long stem grass hay or alfalfa hay fed free-choice with the high concentrate ration for the first week improved results.

In Iowa State University studies, a corn-soybean meal ration with 60 percent concentrate in the dry matter was superior to a 75 percent concentrate ration for newly weaned calves. Roughages such as corn cobs, alfalfa hay or corn silage gave similar results in these 60 percent concentrate rations. Two pounds of a pelleted 30 to 40 percent protein supplement per head daily with free-choice prairie hay was an adequate receiving ration for calves going to wheat pasture in Oklahoma trials.

Natural protein is superior to urea for the first four weeks of the starting period. A 60 to 70 percent concentrate ration should have 14 percent crude protein, 1.3 percent potassium, 0.65 percent calcium, 0.33 percent phosphorus and 0.3 percent salt in the dry matter. After the first two weeks the potassium can be lowered to 0.8 to 1.0 percent. Add 2,500 to 3,500 IU of Vitamin A, 250 IU of Vitamin D, and 50 to 100 IU of Vitamin E per pound of ration. Results with B-complex vitamins in receiving rations have varied.

Feeding 350 to 500 milligrams of a broad spectrum antibiotic per head daily for three to four weeks has decreased sickness and improved performance. Calves infected with coccidiosis will benefit from the feeding of a coccidiostat for the first 28 days.

Implants

Growth-promoting implants can increase the daily gain of cattle on growing and finishing rations by 10 to 15 percent and decrease the amount of feed needed for a unit of gain by 6 to 10 percent. Implants approved for beef cattle on pasture and other growing rations include Compudose, Ralgro, Steer-Oid and Synovex. Compudose is effective for around 200 days and the others last from 90 to 120 days or perhaps longer.

The use of implants in backgrounding can return $10 to $20 for every dollar invested.

A field study at MU showed a single Ralgro implant increased total gain by 22 pounds per head for steers grazed 120 to 130 days (Table 1). A second implant of Ralgro or Synovex in midsummer may add another 10 to 15 pounds of gain per head for steers and heifers grazing Missouri pastures.

Table 1

Ralgro implants in yearling steers on pasture

	Days	Average gain per head, pounds		Difference
		0 milligrams	Ralgro 36 milligrams	
1971	120	156 pounds	176 pounds	20 pounds
1972	131	147 pounds	170 pounds	23 pounds
Average	125	151 pounds	173 pounds	22 pounds
Percent increase				15 pounds

MU trials on 26 herds with 2,077 head in 1971 and 17 herds with 991 head in 1972.

In a recent field trial, a single implant of Steer-Oid was superior to a single implant of Ralgro in a 180-day grazing period for yearling steers. A single implant of the longer lasting Compudose (200 days) increased the average total gain per head by 13 pounds compared to one implant of Ralgro in a summary of 13 Missouri trials that averaged 172 days.

Melengestrol acetate (MGA) is approved by the FDA for use in dry and liquid supplements fed to heifers in the feedlot or on pasture. MGA is a synthetic hormone similar in structure and activity to progesterone, the natural pregnancy hormone. It has improved rate of gain for feedlot heifers by 10 percent and feed conversions by 6.5 percent and suppressed heat.

MGA is not effective on pregnant heifers, spayed heifers or steers. Heifers fed MGA on pasture have a similar percentage increase in daily gain as those fed MGA in a dry lot. Feeding 0.4 to 0.5 milligrams per head daily to heifers on pasture showed more improvement in daily gain than feeding lesser amounts. MGA may be fed in the same supplement with the ionophores, Bovatec and Rumensin. The effect from MGA, ionophores and implants are additive.

Rumensin and Bovatec are cleared for use in feeds for cattle in confinement or on pasture. Rumensin or Bovatec should be fed at 100 to 200 milligrams per head daily to cattle on growing rations. These ionophores have given a 6 to 10 percent improvement in feed efficiency for cattle fed in dry lots. Cattle on pasture fed Bovatec or Rumensin have gained around 0.15 to 0.2 pounds (10 to 15 percent) more per head daily and required less concentrates for a pound of extra gain.

Winter feeding

You will probably want 1.25 to 2.0 pounds daily gain during the winter on calves weighing 400 to 500 pounds in the fall. You may want 1.7 to 2.0 pounds daily gain in winter if calves are to be sold or put in the feedlot at the end of the winter period. Faster rates of gain reduce feed requirements and the cost of interest and other non-feed costs for each unit of gain.

Calves that are to be grazed on summer pastures without grain supplements should not be fleshy in the spring. Calves that have gained more slowly in the winter will usually gain faster in the summer and make up 50 to 60 percent of their lag in winter gain. Medium- to large-frame calves should not become fleshy when gaining from 1.5 to 2.0 pounds daily in winter.

Nutrient requirements

The protein, energy and minerals required for a 450-pound calf to gain 1.25, 1.5 and 2.0 pounds daily are shown in Table 2. The level of these nutrients in some common feedstuffs is contrasted with these requirements. It is obvious that most of these feeds need protein, energy and mineral additions to satisfy the daily requirements of a 450-pound steer calf gaining 1.5 to 2.0 pounds daily.

Table 2
Requirements for medium frame 500-pound steer calf (NRC, 1984)

Feeds (nutrients)	Daily gain (pounds)	Intake (pounds)	Dry matter basis		Ca (percent)	P (percent)
			Protein	TDN		
	1.25	11.5	11.0	61	0.36	0.21
	1.5	12.5	10.5	63	0.40	0.22
	2.0	13.1	11.4	68	0.47	0.24
Corn silage			8.1	70	0.27	0.20
Sorghum-Sudan silage			10.2	59	0.64	0.23
Fescue hay			8.4	52	0.38	0.23
Alfalfa hay			15.0	55	1.35	0.22
Winter fescue pasture			7.0	48	0.42	0.19

Supplying adequate, least-cost supplementation to farm-grown feeds is the key to economical winter gains. The nutrient composition of roughages varies widely, so a laboratory test to measure the nutrient levels in your feeds will greatly improve your ration formulations. Some rations for 500-pound calves to gain 1.5 and 2.0 pounds daily are given in Tables 3 and 4.

Table 3
Rations for 500-pound steers to gain 1.2 to 1.6 pounds daily (pounds per head per day)

Rations (pounds)	Average daily gain (pounds)					
	1.5	1.5	1.6	1.5	1.2	1.5

Grass hay	9.6			6.0		
Alfalfa hay		10.3		4.0		
Forage sorghum silage						32
Corn or milo silage			32			
Shelled corn, milo	3.7	4.0		4.5	3.5	3.0
Soybean meal[1] (44 percent)	1.0		1.2		1.1	1.0
Limestone	0.04		0.03		0.04	
Dicalcium phosphate	0.03	0.04	0.05	0.04	0.04	0.04
Trace mineral salt	0.04	0.04	0.04	0.04	0.04	0.04
Nutrient composition (DM)						
Crude protein (percent)	11.5	15.0	11.8	11.5	10.9	11.7
NEm, Mcal per pound	0.67	0.67	0.72	0.68	0.65	0.68
Neg, Mcal per pound	0.35	0.35	0.46	0.38	0.31	0.38
TDN (percent)	64.0	65.0	70.0	65.0	63.0	64.0
Ca (percent)	0.43	0.98	0.42	0.44	0.43	0.55
P (percent)	0.33	0.30	0.32	0.32	0.32	0.32

[1]An equivalent amount of commercial protein supplement can be substituted for the soybean meal. It should be high in natural protein for this weight cattle. These rations should have 20,000 IU of Vitamin A added to the per head daily feed allowance. See text for the value of implants and additives (Rumensin®, Bovatec®, MGA® and antibiotics).

Table 4
Ration for 500-pound steer to gain 2.0 pounds daily (pounds per head per day)

Ration	1	2	3	4	5
Grass hay	7.0			5.0	
Alfalfa hay		7.0		4.0	
Forage sorghum silage					21.0
Corn or milo silage			30.0		

Shelled corn, milo	7.0	7.0	2.5	7.0	6.2
Soybean meal[1] (44 percent)	0.9		1.1	0.3	0.8
Limestone		0.08		0.06	
Dicalcium phosphate	0.10	0.04	0.04	0.04	0.04
Trace mineral salt	0.04	0.04	0.04	0.04	0.04
Nutrient composition (DM)					
Crude protein (percent)	11.5	14.0	11.5	12.0	12.0
NEm, Mcal per pound	0.78	0.78	0.79	0.76	0.76
NEg, Mcal per pound	0.44	0.44	0.50	0.43	0.44
TDN (percent)	72.0	73.0	73.0	71.0	72.0
Ca (percent)	0.48	0.64	0.49	0.52	0.47
P (percent)	0.33	0.33	0.32	0.30	0.33

[1]An equivalent amount of commercial protein supplement can be substituted for the soybean meal. It should be high in natural protein for this weight cattle. These rations should have 20,000 IU of Vitamin A added to the per head daily feed allowance. See text for the value of implants and additives (Rumensin[R], Bovatec[R], MGA[R] and antibiotics).

Plant protein supplements usually give greater performance than urea or other non-protein nitrogen supplements for calves weighing under 600 pounds and for cattle first started on feed. This is because light-weight cattle have less rumen capacity to produce microbial protein. They also need higher protein levels in their diet than older, heavier-weight cattle.

High energy rations are better suited to the use of non-protein nitrogen supplements, because energy can limit microbial fermentation in the rumen. Some urea can be advantageous in supplements for young cattle where the ration has a large amount of protein bypassing the rumen and there is a scarcity of ammonia in the rumen for the microbes. Corn gluten feed and blood meal are examples of high bypass protein supplements.

Feeds

A full feed of good-quality corn silage supplemented with protein, minerals and Vitamin A will produce from 1.5 to 1.8 pounds of daily gain on a 400- to 500-pound calf. Some grain additions will usually be needed to get 2.0 pounds daily gain. It takes about 1.2 to 1.5 pounds of a 40 percent protein supplement per head daily to supplement the corn silage intake of 400- to 500-pound calves (Tables 3 and 4).

Alfalfa or other high-quality legume hay, silage, or haylage can be used to supplement corn silage for protein in calf rations. It will take 3.5 to 4.5

pounds of alfalfa hay to supply the amount of protein contained in 1.2 to 1.5 pounds of soybean meal. Daily rations that contain 4 to 5 pounds of good-quality legume hay will have adequate protein levels for wintering calves.

Late cut grass hays or those with much weather damage will need both protein and energy added to produce 1.5 pounds daily gain on calves. Calves will need 4 to 5 pounds of a grain-protein mixture per head daily to average 1.2 pounds daily on winter fescue pastures (Table 3).

Forage sorghum, small grain and grass legume silages work well for wintering calves but are lower in energy than corn silage. It will take about 0.5 pounds of grain per 100 pounds of body weight per head daily in the ration for grass-legume silage or haylage to give similar rates of gain to a full feed of corn silage. Protein will be adequate if the legume silage furnishes 40 percent of the ration dry matter.

Wastes and byproducts

Poultry litter is high in protein and minerals. A mixture of 50 percent broiler litter and 50 percent ground corn fed free-choice to calves will produce from 1.5 to 2.0 pounds daily gain.

Liquid whey is available in some parts of the state for cattle feed. Cattle can consume up to 30 percent of their dry matter intake of whey without reducing performance. This would represent an intake of 50 to 60 pounds daily of liquid whey for a 500-pound steer. Whey can supplement hays for protein, calcium and phosphorus.

Distiller slops and grains, soybean hulls and whole cottonseed are other possibilities for protein and energy sources in winter rations.

Minerals and vitamins

About 20,000 IU of Vitamin A per head daily should be included in all winter rations for calves.

Phosphorus is most likely to be deficient in hay rations. Adding grain will increase the phosphorus content. Potassium should be adequate in most hays but can be deficient in late winter in stockpiled tall fescue. If grass or legume hays are fed alone, a free-choice mineral supplement should have about 10 to 12 percent phosphorus. If 1 percent of the body weight in corn is fed, the phosphorus could be reduced to 5 percent in the free-choice mineral.

Pasture

An ample supply of good-quality pasture throughout the grazing season is the goal of every backgrounder, since pasture gains are often the lowest cost gains put on in the backgrounding phase. Cool-season grasses such as fescue and bromegrass become mature and furnish poor nutrition in midsummer. Measures to keep daily gains up in July and August include the interseeding of legumes in grass pastures and the feeding of protein and energy supplements to supplement the pasture forage. Rotating cattle to warm-season grass pastures is another way to prevent a summer slump in performance.

Another problem with fescue is the endophyte fungus infestation that many Missouri fescue pastures have. Studies at MU indicate that the daily gains of stocker cattle are reduced by about 0.1 pounds for every 10 percent fungus infection in fescue pastures. Many fescue pastures have as much as 70 to 80 percent infestation, which would reduce daily gain by 0.7 to 0.8 pounds. Keeping legumes in the fescue pastures and feeding energy supplements will reduce the harmful effects of the toxic fungus.

Higher stocking rates in the spring to use the surplus forage produced by cool-season grasses at this time is a management technique that can make better use of pasture. Rotational grazing systems and sequential grazing, or letting stocker cattle graze before cows so the younger animals will have the higher quality forage, are other attempts to make the most economical use of forages. Any extra cost or labor involved must be considered to evaluate the economics of these practices.

Forages for backgrounding

When considering forages for a stocker program, it is critical to view productivity from two perspectives. One perspective is the performance of individual animals in the program and the other is the total gain produced on the system or its carrying capacity.

Considering only one measure of productivity and disregard for the other can result in severe economic woes. This is because certain costs, such as trucking and veterinary fees, must be considered on a per head basis while others, such as fertilizer or fencing, must be considered on a per acre basis. It is easy to produce excellent individual average daily gains on mediocre pasture by very light grazing, allowing stockers to selectively graze only the best plants.

However, the total returns may be inadequate to cover the fixed costs associated with the land and forage base.

In contrast, some enthusiasts of controlled grazing cite remarkable figures for gain per acre in stocker programs but then find out that the very heavy stocking rates did not allow individuals to gain enough per head to cover negative price margins and all the other per head costs associated with owning the animals.

The ideal exists somewhere between these extremes and is built on the principles of good-quality forage for high individual performance and sound grazing management for efficient harvest of the forage and high output per acre.

Response to quality

Many Missouri cattle producers have traditionally been cow/calf producers and hence have a forage base adapted to this enterprise. When shifting to or adding a stocker operation, it is important to remember that the nutritional requirements of the growing steer or heifer are considerably higher than that of a mature cow in mid-lactation.

A four-year study at MU Forage Systems Research Center clearly shows this difference in animal response as quality of the forage base increases (Table 5).

Table 5
Performance of yearling steers and calves grazing three cool-season forage systems

Forage	Average daily gain (pounds per head per day)	
	Steers	Calves
Smooth bromegrass-red clover	1.76	1.86
Orchardgrass-red clover	1.64	1.84
Tall fescue[1] + 100 pounds N/A	1.04	1.54

[1]Average 41 percent endophyte infected

Whereas calf average daily gain (ADG) declines only 0.3 pounds per head per day when its dam is grazing infected fescue, the yearling grazing fescue gains 0.6 to 0.7 pounds per head per day less than its counterparts grazing higher quality pasture. For profitable gains, forage must be high quality or grain supplemented.

Protein and energy supplements

One way to keep gains up in midsummer and increase the daily gain of stockers on pasture is to limit-feed grain. Whether this is profitable depends upon the amount of grain it takes for an extra pound of gain along with any price decrease per pound for feeder cattle that are heavier and perhaps fleshier.

Protein and limited amounts of energy supplements can increase the digestibility of low-quality forage and have an additive effect on their use by cattle.

On the other hand, feeding larger amounts of energy with forage has a negative effect by reducing the fiber digestibility of the forage. Also, when grain is fed with good-quality pasture, cattle substitute grain for grass, which often results in little increase in daily gain and large amounts of grain needed for an additional unit of gain.

Protein supplements can increase performance and be profitable when protein is deficient for cattle on pasture forages. Protein supplements have been profitable in late summer for cattle on mature range pastures in Oklahoma and Kansas studies. These grasses dip lower in protein content than our fescue pastures do in July and August. Energy is probably a greater need than protein on late summer pastures in Missouri.

Protein supplement

There was no response from adding soybean meal to a corn supplement fed to 800-pound mixed steers and heifers grazing fescue pastures from

June 16 to Sept. 8, 1987 at MU Greenley Station at Novelty (Table 6).

Table 6
Corn vs. corn-soybean meal supplement (June 16 to Sept. 8, 1987, days 83)

Number head	Control 15	Corn 16	Corn-SBM 16
Supplement per head per day			
Corn, pounds	0	4	3
SBM, pounds	0	0	1
Initial weight	799	815	798
Final weight	853	914	897
ADG	0.65	1.19	1.19
Supplement per pound extra gain		7.4	7.4

In a two-year study at Purdue University, replacing part of the corn with soybean meal in a 3.5-pound daily supplement did not improve the performance of yearling heifers grazing fescue pasture. Experiments at other universities showed yearling cattle did not respond to protein when fed 1 percent or more of their body weight in supplement when there were legumes in fescue or orchardgrass pastures.

Smooth bromegrass was found to have 20 percent protein on a dry matter basis in early spring but 95 percent of this protein was degraded in the rumen in Nebraska studies. Adding 0.25 to 0.5 pounds of escape protein (blood meal and corn gluten meal) to 3 pounds of corn grain or corn bran increased the gains of 600-pound steers grazing the brome pasture in spring. A trial at MU showed no response from either soybean meal or a bloodmeal-corn gluten meal mixture fed to 685-pound steers grazing fescue pastures for 70 days in the spring (April 21 to June 30).

Increase stocking rate

For the most efficient use of grain supplements with pasture, the stocking rate of the cattle must be balanced with the pasture. Cattle eat less pasture and the stocking rate should be increased when grain supplements are fed. In Oklahoma studies, grain use was very inefficient when there was a surplus of grass for the cattle compared to a scarcity of grass or balancing the grass with the cattle. If grass was surplus, it took 15 to 30 pounds of grain for each pound of gain increase but only 8 to 10 pounds if grass and cattle were balanced. The carrying capacity of the pasture increased by 25 to 30 percent when grain was fed at 1 percent of body weight (5 to 7 pounds per head per day).

Raun, A.P. of Elanco Products Company noted in a research summary of grain supplements for stockers on forage that cattle average 0.61 pounds less forage dry matter intake for each pound of supplement eaten daily. He reported in an eight-trial summary that stocking rates to fully use the pasture increased 4.2 percent for each pound of supplement fed per head daily. These results conform closely to the Oklahoma figures.

Amount of grain to feed daily

We need more information on the response from grain supplements on Missouri pastures in early versus late season and the amount of grain, if any, that is most profitable for these time periods. The feed for an extra pound of gain needs to be kept below 8 to 9 pounds for this practice to pay. Somewhere around 0.5 to 1 percent of body weight appears to be the upper limit for feeding grain to cattle backgrounded on pasture if much use is to be made of the forage.

Feeding 4 pounds of rolled milo per head daily to steers grazing bermudagrass pastures for 112 days gave higher subsequent feedlot gains, fewer days in the feedlot and higher overall performance than feeding 0 or 2 pounds milo in Kansas trials.

Adding 100 to 200 milligrams per head daily of Bovatec or Rumensin to grain supplements will decrease the amount of supplement required for beef gain. MGA should be added for heifers.

Feeding method

Supplements can be hand-fed daily, or if fed at 0.5 percent of body weight or less, every other day is satisfactory. Salt mixes work well. Adding 10 percent salt to a grain supplement will hold consumption to about 1 percent of body weight. It will take about 15 percent salt to limit grain to 0.5 percent of body weight on most pastures. If Rumensin is included, some less salt is needed. Use plain salt instead of trace mineralized salt to prevent over-feeding of some minerals. Tallow or other fat can be substituted for salt to control intake.

If cattle are hand-fed supplements, the time of day that the supplement is fed appears to affect the amount of forage cattle consume. It is known that cattle have intensive grazing peaks at dawn and dusk, with the majority of grazing occurring in daylight hours. Some grazing also occurs in the middle of the night, but this decreases as night length decreases from winter to spring. Thus, feeding supplements more toward the middle of the day will be less disruptive on normal grazing activity and cause cattle to eat more forage than if supplements are fed early in the morning.

Highly digestible fiber feeds

Feeds such as soybean hulls and corn gluten feed have low starch but a large component of highly digestible fiber. These high-fiber feeds cause less reduction in the fiber digestibility and feed intake of roughages when they are fed with roughage rations than do high starch grains like corn, milo or wheat. Studies at MU and other stations show that feeding 3 to 6 pounds of soybean hulls or corn gluten feed per head daily to cattle on forage gives equal or even greater performance to using a similar amount of corn grain.

Retained ownership

Some Missouri backgrounders retain ownership of their cattle in the finishing period. They may feed them out at home if they have ample grains and silages. However, most Missouri backgrounders that retain ownership send their cattle to a custom feedlot to be finished for slaughter. There

are custom lots in Missouri but most of the cattle backgrounded in Missouri move to Western or Northern feedlots.

A Missouri lot has lower transportation costs and is close enough that you can observe them during the feeding period. Cost of gains are often cheaper in Missouri lots, since grain costs have been less than in some other feeding areas. The selling price for the finished cattle may be lower than where there is a concentration of large feedlots.

Some like to hedge by having part of their cattle custom fed while the remainder are sold to someone else to finish. Studying cattle cycles, numbers in feedlots and price forecasts is helpful in deciding whether to retain ownership or sell your cattle as feeders.

Backgrounders have some advantages in retained ownership. They know the genetic potential of their cattle for performance. There should be less stress and sickness compared to cattle that are put together from many sources or have changed hands through the marketing system.

Note
Some disadvantages of retained ownership include the need for more credit, since there will be cattle on hand in both the backgrounding and finishing phase in most cases. Risks are greater and you should become acquainted with the use of futures market hedges and options to lessen risk

Also, you may not have sufficient numbers or enough uniformity in a group of cattle to fill a pen in the feedlot. You can buy other cattle to go with yours. Heifers and steers can be fed together successfully, since MGA has been cleared for feeding with Rumensin and Bovatec. MGA will keep the heifers from coming into heat.

Marketing

There are a number of things that a backgrounder can do to increase the sale price of his cattle. The difference that breed and sex preferences make in feeder cattle prices should be noted. Feeder preference for a particular breed or crossbreed is not the same for all regions of the country.

Shaping feeder cattle into uniform truckload lots will increase their sale price. A study of Missouri cooperative calf sales for four years (1974-1977) showed increasing lot size from 10-19 to 20-29 increased average price per hundredweight by $6.13 (36.30-42.49). An evaluation of 86,000 head of cattle sold through auctions in Kansas in 1981 showed lot size affected price more than uniformity within the lot. A premium was paid for lots of 20 to 40 head. Needless to say, extra fill, excess fat, horns, bulls and unthriftiness detracted from the sale price in these studies.

In the Kansas study, medium and large frame yearlings sold for the same price. In calf weights, medium-frame cattle were discounted $1. Small-frame yearlings were discounted $4.50 to $5.70 and small-frame calves were discounted $4.25 to $7.50 per hundredweight.

Summary

Backgrounding has increased in Missouri in the past 15 years. Some producers who once finished cattle are now using their forage and grain to background. A decrease in cow numbers the past 10 years has made more pasture and hay available for growing steers and heifers for the feedlot. A steady improvement in the genetics of Missouri feeder calves and wider use of implants, feed additives, internal and external parasite control and

nutrition technology has increased the profitability of backgrounding.

The recent emphasis on reducing fescue fungus, the introduction of legumes in cool-season grass stands, rotational grazing and other measures are improving Missouri pastures.

As mentioned previously, high-quality forages produce good cattle performance, which is basic to profitable backgrounding.

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Related MU Extension publications

- G2081, Mineral Supplements for Beef Cattle
  http://extension.missouri.edu/publications/DisplayPub.aspx?P=G2081
- G2090, Growth Stimulants (Implants)
  http://extension.missouri.edu/publications/DisplayPub.aspx?P=G2090
- G2095, Backgrounding Calves Part 1: Assessing the Opportunity
  http://extension.missouri.edu/publications/DisplayPub.aspx?P=G2095
- G2102, Care of Newly Purchased Feeder Cattle
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