

Beef Cow-Calf Management Options When Pasture is Limited



Beef production in Kansas has been influenced by widespread drought, record grain and feed prices, and economic uncertainties. Capturing value, managing returns and least-cost production will be crucial over the next few years. The list of questions in this document is intended to help beef producers determine appropriate management practices for cow-calf operations when pasture is limited.

Possible outcomes:

- leaving the herd on pasture with supplementation;
- confinement feeding by the producer;
- feeding cows in a commercial feedlot;
- weaning cows early; or
- selling all or part of the herd.

Instructions

Thinking about your operation, read each section and answer the questions. Let your responses guide you through the document. For example, if you answer *no* to question 2, go to Section II if you plan to keep cows, or to Section V if you plan to disperse. The illustration on page 6 will help you visualize the decision-making process.

Section I – Feed Supply

1. What is your pasture condition?

Assess current growth and condition, water availability, and stocking rates. For instructions on how to sample pasture and calculate forage yield, see <http://animalrangeextension.montana.edu/LoL/Module-4a/4-Yield.htm> or ask your local K-State Research and Extension agent.

Good (for now) – Monitor early season precipitation and be prepared to reduce the number of animals (Section V), wean early (Sections II, III, and IV), or supplement on pasture.

Fair to moderate – Reduce numbers and/or add supplement.

Poor – Go to question 2.

2. Do you have enough feed?

To calculate feed requirements, start with the number of days you plan to feed and refer to the tables on page 2. Table 1 gives nutrient requirements based on cow production stage (gestation, lactation). Table 2 shows nutrient value of common feedstuffs. Test nutrient composition of feedstuffs before determining cow diets, paying close attention to dry matter (DM) values. The spreadsheet, “KSU-Cow Wintering Costs,” at <http://www.agmanager.info/Tools/default.asp#LIVESTOCK> can be used to determine feeding costs for your operation.

Do you have access to a reasonably priced, abundant supply of moderate- to high-quality feed such as hay, silage, and grain or grain by-products? Is the supply adequate to feed your herd through the grazing season and throughout the winter and pre-calving season?

If **yes**, go to Section II.

If **no**, go to Section II to determine which cows to keep; if dispersing, go to Section V.

Table 1. Nutrient requirements of mature beef cows to maintain body condition.

Cow Wet (lbs)	Milk Production (lbs)	Day of lactation	DMI	TDN ² (lbs)	TDN (%)
1,200	20	60	27.8	16.7	59.9
		90	28.4	16.4	57.6
		120	27.4	15.4	56.2
		Late gestation	24.6	13.8	56.2
		Dry	20.9	9.8	46.8
1,300	20	60	29.1	17.3	59.5
		90	29.9	17.1	57.2
		120	28.9	16.2	55.9
		Late gestation	26.1	14.7	56.5
		Dry	23.8	11.2	46.9
1,400	20	60	30.5	18.0	59.1
		90	31.3	17.8	56.8
		120	30.3	16.8	55.5
		Late gestation	27.6	15.6	52.6
		Dry	25.2	11.8	46.9

Table 2: Common hays fed to cows in Kansas and TDN values.

Hay	DM ¹ (%)	TDN ² (%)	CP ³ (%)	Total amount to feed a dry 1,200 lb cow to maintain body condition ⁴	Maximum DMI for 1,200 cow by feed ⁵
Prairie	91	50	7	$9.8 \div (50/100) = 19.6$ lbs DM	21.1
Corn Stalks ⁶	80	59	5	$9.8 \div (59/100) = 16.6$ lbs DM	19.3
Straw ⁶	89	42	3	$9.8 \div (42/100) = 23.3$ lbs DM	18.2*
Ammoniated Straw	89	50	9	$9.8 \div (50/100) = 19.6$ lbs DM	23.5
Grass	82	58	10	$9.8 \div (58/100) = 16.9$ lbs DM	26.3
Alfalfa, mature	91	50	13	$9.8 \div (50/100) = 19.6$ lbs DM	24.8
Fescue, mature	91	44	11	$9.8 \div (44/100) = 22.3$ lbs DM	20.5*
Brome, mature	92	53	10	$9.8 \div (53/100) = 18.5$ lbs DM	20.4

¹DM = dry matter

²TDN = total digestible nutrients

³CP = crude protein

⁴Remember when calculating how much you will actually provide to the cow you must convert DM to as-fed by dividing by the DM (%).

For example:

Prairie Hay: $9.8 \div (50/100) = 19.6$ lbs DM $\div (91/100) = 21.5$ lbs

⁵Maximum voluntary intake was calculated using the equation: $120/\text{NDF \%} * 1200$ lb cow. For example:

Prairie hay: $(120/68.05)/100 = 0.0176 * 1200 = 21.12$ lb DM

* Make sure that the required amount of DMI is less than the maximum DMI, otherwise additional high-energy feeds must be supplemented.

⁶Note that these two feed ingredients will need to be fed with additional protein since CP is very low.

Section II – Cow Herd

3. How difficult would it be to replace herd genetics?

Do you receive premiums for the genetic merit of your herd? Do you track individual performance within your herd and use that information for selection and marketing?

If *your herd is made up of cows that can be replaced easily at local auction facilities*, consider dispersing the herd and rebuilding when forage becomes available. Go to Section V.

If *your herd is made up of high-value genetics that would be difficult and costly to regenerate*, go to question 4.

4. What should I do with high-quality cows?

If you are at this question and want to keep your high-quality cow herd, you will need to determine the best way to manage these cows. For help deciding whether to feed cows, ship, or destock, refer to the University of Missouri spreadsheet, “Drought Management Options” located at <http://beef.missouri.edu/tools/index.htm> under the heading, drought. Do you have an economical method to retain these high-quality cows?

If *yes*, go to question 5.

If *no*, go to Section V.

5. What is your cow herd's stage of production?

This determines nutrient requirements and is largely affected by lactation. Lactating cows require more nutrients and feed, and incur higher costs than non-lactating cows. Production stage determines the next step:

Lactating cow, go to question 6.

Dry cow, go to Section III.

6. How old are your calves?

If you have lactating cows that are expensive to feed, one management option to reduce feeding costs is to wean calves earlier than normal.

Calves more than 90 days old – With good management and palatable feedstuffs, calves of this age will perform well on their own. Prepare to wean calves early by offering them creep feed ahead of time to ease the transition. Commercial creep feeds include byproducts such as wheat middlings, soyhulls, or whole oats.

Weaned calf decisions continue in Section IV. Considerations for dry cows follow in Section III.

Calves less than 90 days old – Weaning calves this age requires further consideration.

- Small calves require tighter (calf-proof) fences and lower watering points. Calves must be switched to solid feed and may have health concerns. To evaluate facilities, go to Section III.
- Weaning very young calves (30 to 90 days old) will help young, late calving, or thin cows to rebreed sooner.
- Avoid peak feed demand of early lactation. Selling pairs will minimize costs and use of resources. Assess the market to decide whether to sell cows and calves as pairs or to split them. Go to Section V.
- Facility may need to be adapted for small calves. Keeping pairs together in semi-confinement pens may reduce calf health risks. To determine feasibility of this option, continue to Section III.



Base weaning decisions on available resources — feed, grass, labor, and facilities — not on calf age and season.



Non-lactating cows require less feed in confinement and cost less than lactating cows.

Section III – Facilities

7. What type of facilities do you have?

Evaluate on-farm facilities, which might include drylots, sacrificing a portion of a pasture to allow the rest of the pasture to recover, and semi-confinement pens where calves can go out to pasture while cows are confined in drylot. Do you have access to facilities to provide comfortable housing for the cow herd on-farm based on recommendations presented in Table 3?

If **yes**, go to question 8.

If **no**, go to question 12.

8. Do you have proper feeding equipment for predetermined diets for cows?

If you have a supply of good quality hay and feeding equipment, you will incur little additional expense. If you are using poor-quality forages that must be supplemented with protein and energy, you might need a mixing truck or wagon to deliver feed. Do you have the equipment to deliver a mixed diet to cows in confinement?

If **yes**, go to question 9.

If **no**, go to question 12.

9. Are you housing your cow-calf pairs on-farm?

Are you willing to sacrifice a portion of your pasture to feed cows to allow remaining pasture to recuperate? Do you have strong, escape-proof fences and water easily accessible to cows and calves?

If **yes**, build your paddock, provide feeding troughs or hay feeders, and determine the diet for your cows. Evaluate health of your cows, and go to Section IV.

If **no**, go to question 10.

Table 3. Facility guidelines for cows and calves.

	Recommendations for Cows	Recommendations for Calves
Pen Space	200 ft ² (dry cow, optimal lot condition/drainage) to 800 ft ² (lactating cow, wetter weather)	125 ft ² /calf during summer and 250 ft ² /calf during winter
Bunk Space	24-30 inches/cow	12 inches/calf
Shade	Recommended	
Water	Abundant water, with much greater needs in the summer than fall, winter, and spring	

10. Are you housing your pairs on-farm, but not sacrificing a pasture?

If you have decided to keep cow-calf pairs together, but do not want to sacrifice a portion of your pasture, and you have adequate feed to meet cows' requirements, your next goal should be to develop a feeding facility that will minimize calf health concerns, for example, by installing semi-confinement pens. Semi-confinement is providing a gate or fence to allow calves to escape into a pasture to keep them from being exposed to drylot dust continuously, while cows stay in the drylot to consume total daily nutritional requirements. Do you have a drylot pen that allows calves to leave the pen and gives them easy access to a pasture, paddock, or grass meadow?

If **yes**, build your pen, move cattle into drylot, and slowly transition cows to the predetermined diet. To evaluate herd health, go to Section IV.

If **no**, determine whether health risk is low enough to place calves in a drylot (question 11) or whether to ship pairs to a commercial feeding facility (question 12). Shipping pairs to a commercial facility might not be the best option. It might be better to wean the calf and feed the dry cow (go to question 11) or sell the pair (go to Section V).

11. Do you have a drylot for cows and calves on-farm?

Based on the specifications described in question 7, can you place your dry cows in a drylot on-farm to retain your herd? Do you have facilities for weaned calves in a drylot?

If **yes**, keep cows and calves on-farm and develop diets to meet nutritional requirements.

If **no**, go to question 12.

12. Can you find a commercial feedlot to feed your cows and calves?

Have you negotiated with the feedlot regarding yardage, diets, biosecurity, and other fees? Are you sending either dry cows or weaned calves to the feedlot?

If **yes**, go to Section IV.

If **no**, work with a feed yard to determine costs. If costs prohibit feeding cattle in a commercial yard, sell cows and calves. If dispersing, go to Section V. If selling calves, go to questions 17 and 18.

Section IV – Herd Health

13. Do you have a whole-herd health vaccination program in place for your cows?

Protection from two viruses, BVD and IBR, is critical from a reproduction standpoint. Placing cows in confinement increases the incidence of respiratory diseases. Vaccinations to protect against PI3 and BRSV are also strongly recommended. Are your cows current on these vaccinations?

If **yes**, go to Question 14.

If **no**, work with your veterinarian to develop a vaccination program for cows that will be penned with other animals before they leave your facilities and come into contact with new cattle. Once the program has been implemented, go to question 14.

14. Has your herd been tested for BVD-PI?

BVD-PI means that cows or calves are persistently infected (PI) with BVD and highly infectious to other cattle. This condition is untreatable, and animals will be a constant source of BVD infection in your herd. Confinement feeding increases the chance of BVD exposure from the same or neighboring pens and may result in pregnancy loss, persistently infected calves, and reduced health and performance in calves. Have all cows (or cows of PI-positive calves) been tested for BVD-PI? Are retained cows negative for BVD-PI?

If **yes**, go to question 15.

If **no**, test all cows and sell those that test positive for BVI-PI as packer cows.

15. Did you retain and vaccinate calves that were weaned early?

Do you have a vaccination program in place? General recommendations include vaccinations against clostridial (7-way) and viral (4-way) infections, treatment for internal and external parasites, and fly protection.

If **yes**, go to question 16.

If **no**, work with your veterinarian to develop best management practices for early weaned calves to prevent calf losses. If keeping calves, administer vaccinations, and



Implement a vaccination program for early weaned calves.

go to question 18. If you decide not to keep calves, prepare them for market as soon as possible to capture the greatest value. Calves that have received minimal management and care – castration, dehorning, vaccination, and pre-weaning – are typically the least valuable. Go to Section V.

16. How have your calves been processed?

Have young bulls been castrated and have all cattle been dehorned?

If **yes**, go to question 17.

If **no**, complete processing to capture higher market value. If selling, go to Section V. If keeping calves, complete processing and go to question 17.

17. Do you have feedstuffs for your calves?

Do you have high-quality feedstuffs available and a high-quality diet designed in consultation with K-State Research and Extension professionals, other beef nutritionists, or feed professionals? Diet may include good quality hay, grain or grain by-products, and a supplement to provide vitamins, minerals, and feed additives, if necessary. Usually, it is not recommended to feed silage to young calves.

If **yes**, determine whether your facilities are suitable using guidelines described in question 7. Gradually switch calves from good quality hay to the growing diet, and feed calves until they are ready for market. After weaning, monitor daily for digestive disturbances, scours, coccidiosis, and feed intake.

If **no**, find a feedlot for your calves and retain ownership; or, sell calves and go to Section V.

Section V – Taxes and Other Implications

18. Do you have an accountant to advise you on tax implications?

Before making major changes in your herd status, consult with a tax professional to determine how to manage major change in your equity position, such as complete herd dispersal.

If **yes**, go to question 19.

If **no**, find a professional to advise you on tax matters before dispersal.

19. Do you have documentation that drought is the reason for dispersal? Do you have information on past management costs (for example, depreciation)?

If **yes**, visit with your accountant about steps to take, and go to question 20.

If **no**, start collecting information recommended by your tax professional before dispersal of the cattle operation.

20. Do you have a plan for rebuilding your herd after the drought breaks?

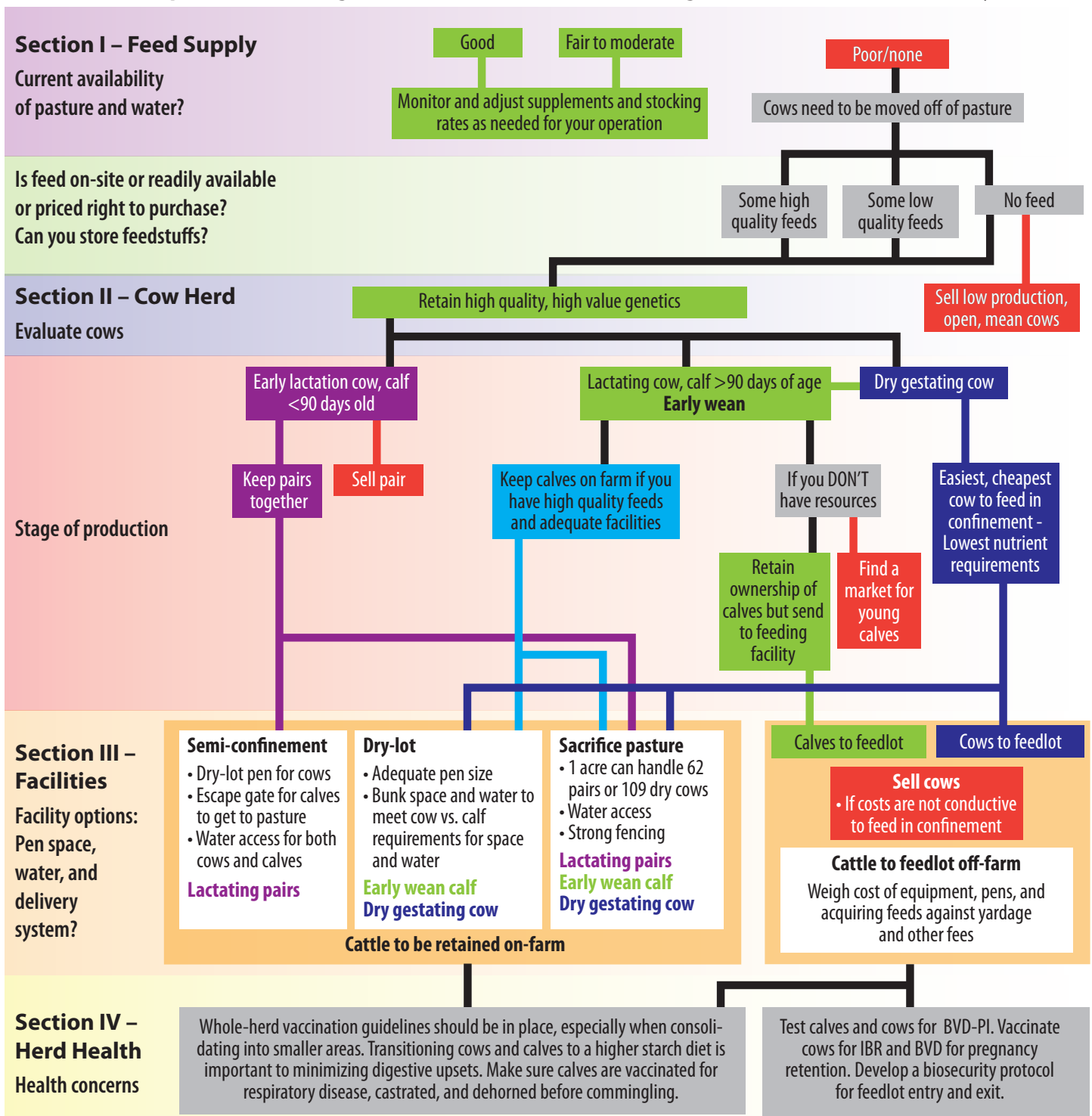
If **yes**, you are in position to continue with a sustainable agricultural program.

If **no**, develop a strategy, as soon as you can, even before dispersal.

For information on what you might expect to pay for replacement heifers using the destock and restock approach, see the KSU-Beef Replacements decision guide at <http://www.agmanager.info/Tools/default.asp#LIVESTOCK>. Replacement heifer and cull cow prices are posted online regularly (e.g., <http://mda.mo.gov/Market/pdf/weeklysummary.pdf>).

This publication is intended to help you make decisions about managing cows during drought conditions. *Managing Cows in Confinement*, MF3115, provides information on confinement management practices, including nutrition and pen design.

Decision Tree: Options for Management of Cows and Calves during Limited Pasture Availability



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In each case, credit

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