

Initiatives



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Turning your Machine Shed into Animal Housing

UNIVERSITY OF MINNESOTA DOCUMENTS

It could be a good idea . . . if you plan it right

JUL 20 94

Can I house a group of cows in the machine shed?

If you are thinking about milking a few extra cows or changing to free stall housing, you very well may have asked yourself that question. Some common situations in which dairy producers start thinking about using existing post-frame buildings in a different way are:

- increasing the herd by six to eight cows by providing loose housing for all dry cows.
- providing loose housing for dry cows and a "switch group" of six to 10 cows to allow a small expansion of 12 to 20 cows.
- expanding a 30- to 40-cow herd to 60 to 100 cows by converting a large machine shed to free stall housing for the entire herd and converting the stall barn to a flat barn parlor (see Spring 1993 issue of this newsletter).
- creating free-stall housing for a single group barn for first lactation heifers, one of several groups of older lactating cows, or dry cows

and springing heifers. MAGRATH LIBRARY

If you fit one of these categories or are considering converting for another reason, this article provides some suggestions to smooth the transition.



John Bush '94

Is Remodeling the Best Choice?

Before you begin planning a remodeling job, evaluate the project carefully. The following questions can help you decide whether it's worth your while to remodel that "perfectly good" machine shed or pole building for dairy cows.

Is the building in a suitable location?

If the existing building is not in a spot you would consider for a new building, chances are remodeling is not a good idea. Things to consider in evaluating the location include distance from the

house, placement with respect to existing dairy buildings, ease of feed and waste handling, proper drainage, access to utilities, and

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Machine Shed Remodeling

Continued from page 1 security.

Think carefully about the prevailing wind direction. If the building is close to the house and upwind, remodeling for livestock is not recommended. In most of Minnesota, livestock buildings that are east of the house create the least odor problems. Those west of the house can create odor problems if they are too close.

Is the building oriented well for natural ventilation? In Minnesota naturally ventilated buildings that run east and west take the best advantage of summer breezes. If you plan to use an open drive-by fence-line feeding system, make sure you can feed on the south side of the building. If that's not possible, consider using an enclosed feed alley and delivering the feed with a power cart. The accompanying box provides some guidelines for a good natural ventilation system.

Is the building structurally sound? If the building needs major repairs to the foundation, roof, or walls, do not invest in remodeling. It is typically cheaper to build a new building. The type of structural support for the roof also has a great impact on how the building can be used. If the roof is supported with trusses and the only posts are along the sidewalls, then the possible uses for the building are primarily limited by the size of the structure. If the roof is supported by rafters and a grid of interior posts, loose housing may be the only alternative. If there are many posts and they are less than 12 feet apart, loose housing for heifers and dry cows is not recommended.

Is the building the right size? If the building is in a suitable location and is structurally sound, the next step is to determine if the building is the correct size for the intended use. Do not try to crowd animals in too small of a space to fit an existing structure. Space requirements and

Natural Ventilation Guidelines for Cold Dairy Barns

SITE SELECTION

- Orient the building to take advantage of prevailing summer wind. In Minnesota, naturally ventilated buildings should run east and west.
- Locate the building at least 50 feet from upright silos and clusters of trees, and 75 feet from all other buildings. Separation distances of 100 feet or more are needed for wide free-stall barns.
- Locate the feeding system on the south side of the building if you use a drive-by feeding system or if the building is open to the south.
- If possible, locate the building so that the south side is unobstructed.

BUILDING CHARACTERISTICS AND OPENINGS

- Provide a 4/12 slope for gable or peak roofs. A 3/12 slope will work for an existing building being remodeled for housing. Monoslope shed roofs need a slopes of at least 2/12, but 2¹/₂/12 roofs are common. Open-front build-

ings for heifers should be 24 feet deep.

- Provide four- to eight-foot (four-foot for older heifers; eight-foot for heifers up to about 600 pounds) high solid partitions between pens in open-front heifer buildings for draft control.
- All naturally ventilated dairy buildings need a sidewall height of 10 feet or more. Buildings wider than 48 feet require a 12-foot sidewall height. A 14-foot sidewall is recommended on buildings wider than 80 feet.
- Size the ridge vent according to building width. Provide two inches of continuous ridge (or peak) opening for every 10 feet of building width. The minimum ridge vent size is six inches. Do not use a ridge cap because it will obstruct airflow. Protect the top of the trusses with metal flashing or a short piece of a metal ridge cap.
- Provide a three-foot overhang along each sidewall.
- Size eave vents in a similar manner to ridge vents. Provide one inch of continuous

eave opening per 10 feet of building width on each side of the building. During extreme cold or for deep open front sheds, 1/2 inch per 10 feet of building width is sufficient.

- Provide full-wall ventilation (at least 60 percent of the sidewall open) in the summer. Curtains provide the easiest and least expensive method to provide open sidewall during summer. Curtains can be rolled up in the summer manually or with a hand-operated winch. A thermostatically controlled curtain is not needed for cold dairy barns.

INSULATION

You won't need insulation in cold free-stall barns or loafing sheds with properly sized ridge and eave vents. In northern Minnesota, a small amount of insulation (R-5) beneath the metal roof will allow the eave vents to be closed to the smallest setting (1/2 inch per 10 feet of building width) without moisture problems. However, insulation is generally not required. If you do install insulation, make sure it's bird-proof and cow-proof. ●

some possible layouts are described in a later section. Sidewall heights are also important. The building should have a sidewall height of at least 10 feet. Most machine sheds have 12- to 14-foot sidewalls.

Is it less expensive to remodel than build a new barn? Remember that one of the common pitfalls is that we often think that remodeling is always cheaper than building new. Make sure that you take the time to get estimates for the remodeling *and* for a new barn for the same purpose. If the cost of remodeling is within 80 percent of the cost of building new, it may be best to build a new barn that is designed for the intended purpose. As a precaution, assume that remodeling and new construction will cost 20 percent more than the estimates.

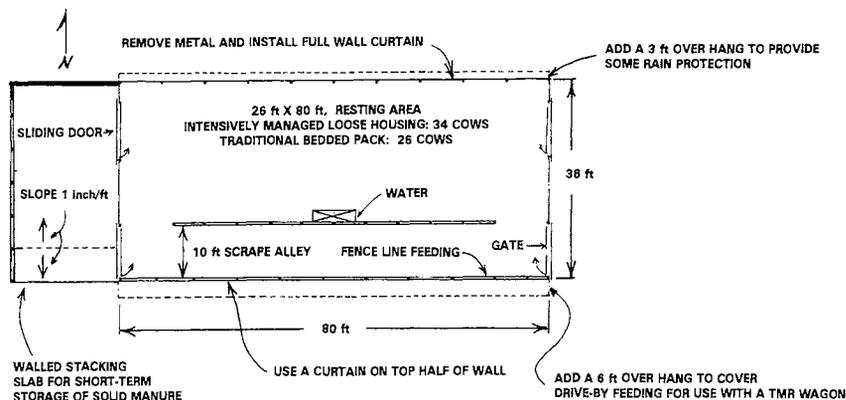
Planning the Layout: Loose Housing

If you do decide to remodel, you'll need to decide what kind of a housing space to create. Loose housing or a bedded pen barn is common for heifers and dry cows. Drive-by feeding along the outside wall is a good alternative if the barn is wide enough (see Fig. 1). Provide a concrete scrape alley that is from 10 to 12 feet wide. The resting and feeding space requirements for heifers and dry cows in this type of system are given in Table 1.

Loose Housing For Lactating Cows

Some Minnesota producers use bedded loose housing instead of free stalls for lactating cows. This has the advantage of a lower remodeling cost. However, to do it right you need a lot of bedding. Bedding amounts of nine to 10 pounds per 1,000 pounds of animal weight per day are not uncommon.

A layout for a loose housing barn for cows is shown in Figure 1. Two types of loose housing systems can be used: 1) bedded pack, and 2) intensively managed loose housing. Either system should include a 10- to 12-foot concrete feed alley separate from the resting area that is scraped twice a day. You can use bunks, but it's better to feed along a fenceline. Line the bottom of the resting area with concrete for easy cleaning. Slope the concrete base of the resting area a quarter inch per foot toward the scrape alley to provide drainage.



Bedded Pack: In a true bedded pack barn, fresh bedding is added each day to cover manure. The bedding is allowed to build up in the barn for two to three months, so you'll need a two- to three-foot solid plank wall around the resting area. High solid walls interfere with summer ventilation.

Success with a bedded pack barn requires proper stocking and large amounts of bedding. Since the manure and soiled bedding is stored in the barn, allow at least 80 square feet per cow in the resting area. If adequate bedding is not used or the building is overcrowded, cows will be very dirty.

Intensively Managed Loose Housing: Intensively managed loose housing is managed differently than a traditional bedded pack barn. The recommended resting area is 60 square feet

FIGURE 1. Layout for a loose housing barn

TABLE 1. Loose Housing for Heifers and Dry Cows

ANIMAL AGE	AVERAGE WEIGHT (LBS)	FEEDING SPACE REQUIREMENTS (INCHES PER HEAD)	RESTING AREA REQUIREMENTS (SQ. FEET PER HEAD)
3 to 4 months	250	12	20
5 to 8 months	400	18	25
9 to 12 months	600	22	30
13 to 15 months	800	24	40
16 to 24 months	1,050	24	45
Dry Cows	1,350	24	60-80

per cow. The basic management scheme is as follows:

1) Starting with a clean concrete base, spread six to eight inches of chopped bedding over the resting area.

2) Add an average of one inch of fresh bedding every day to the resting area—more on cow pies, less in clean areas.

3) Scrape the barn down to the concrete once or twice each week in the summer, every two or three weeks in the winter. In winter, be sure to provide enough bedding to give the cows a warm surface on which to lay.

Planning the Layout: Free Stalls and Alleys

The most popular layouts for free stalls are two and three rows (Figure 2). Outside feeding is not recommended for use with free stall barns in Minnesota. In the southern half of the state drive-by feeding along the south wall works

Free-Stall Dimensions

Free stalls generally are 7 to 8 feet long depending on the partition design. In the initial planning process assume an 8-foot free stall with partitions 45 to 48 inches apart on center. For more information on free stall design obtain a copy of the following publications from your county extension office:

- *Answers to Common Free Stall Design Questions* (in: Engineering Notes)
- *Free Stall Design and Management* (AEU-1)

Alley Widths

The width of an alley in a free stall barn depends on how it is used. Alleys that are between rows of stalls only (see Figure 2) should be eight to 10 feet wide. Alleys that serve as feed alleys only typically are 10 to 12 feet wide. An alley used between a row of stalls and the feeding fence should be 12 to 14 feet wide.

In most cases, the smaller width given for each case works well. Choose the larger width if the equipment you plan to use for scraping manure and adding bedding to stalls requires the extra width, or if you have extra space after allowing for 8-foot stall lengths.

Widths for Enclosed Fenceline Feeding

You will need 14 to 15 feet to be able to drive through the barn with a mobile total mixed ration (TMR) mixer for two or three row barns (Figure 2b). If you want an enclosed feeding system but there isn't enough space to drive through the barn with a wagon, consider using a powered cart to deliver the TMR to the cows (Figure 2a). The cart is loaded from the mixer wagon outside the barn and kept in the feed lane until the cows are moved to the milking center. Allow 6 to 8 feet to deliver the ration.

Layout Options Based on Building Width

The building widths needed for various free-stall and feeding layouts are as follows:

Two rows of free stalls with drive-by fenceline feeding with a TMR wagon	34 to 38 ft.
Two rows of free stalls with enclosed feeding with a TMR wagon	48 to 50 ft.
Two rows of free stalls with enclosed feeding with a power cart	40 to 44 ft.
Three rows of free stalls with drive-by feeding	44 to 48 ft.
Three rows of free stalls with enclosed feeding with a TMR wagon	58 to 60 ft.
Three rows of free stalls with enclosed feeding with a power cart	50 to 54 ft.

FIGURE 2a

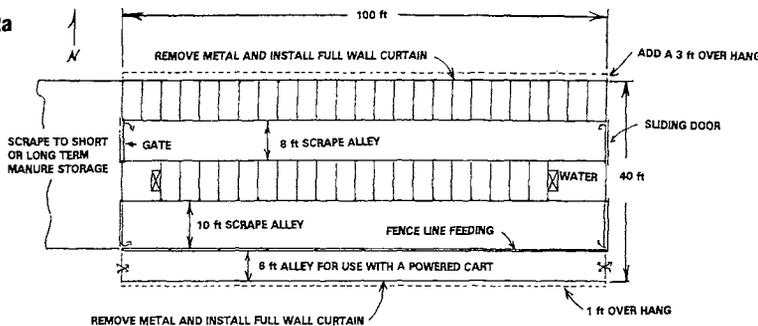
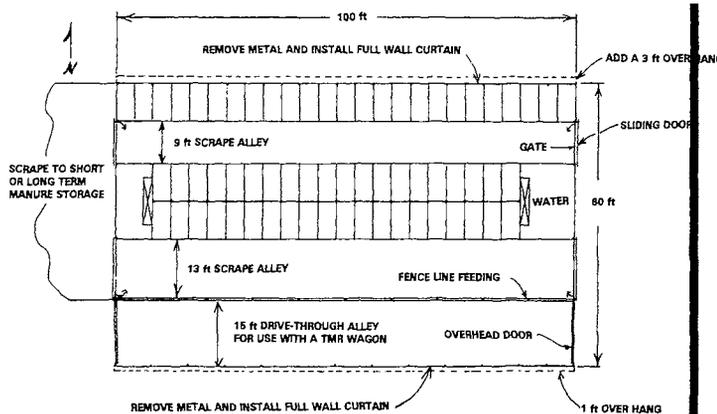


FIGURE 2b



NOTE: Free stalls are 8 feet long and partitions are hung 48 inches apart on-center. Use a neck rail and bricket board located 66 inches from the rear curb. Hang partitions so that the neck rail is 42 to 44 inches above the stall surface. The end of the stall partition should be 8 to 12 inches from the rear curb. Recommended curb height is 10 inches.

well, but results in a colder barn. In central and northern Minnesota an enclosed feeding system is recommended in most cases.

The free-stall layout to use when remodeling a machine shed depends on the width of the barn. The total number of stalls is determined by the length.

Managing Feed Bunks for Better Milk

If you're breeding your cows to make more milk, you're also breeding them to eat more. And that means paying better attention to how, what, and when you feed than you might have with a lower-producing herd.

Proper feed management, according to dairy nutritionist Jim Linn, involves three things: formulating rations properly, feeding them correctly, and making sure the cows are eating what you give them.

"There are really three rations on every farm: the ration you formulate on paper, what you actually feed your cows, and what your cows choose to eat," he says. "Good nutrition programming occurs when all three rations are identical."

What can you do to increase the odds that your cows get what they need in feed? Linn suggests the following:

1. Allow adequate bunk space. About 28 to 30 inches of bunk space per animal is needed for cows to have access to feed.



2. Distribute feed uniformly. Be sure all feeds are uniformly distributed the full length of bunks. All the bunk space in the world does no good if only a couple of cows can reach the pile of feed dumped in a small area.

3. Monitor feed refusals. Keep track of what the cows are not eating—fines, coarse hay, cobs, etc. If your cows aren't taking in the feed you think they should, reformulate the ration based on what they are eating.

TMR or individual ingredients?

WHICH WAY YOU FEED depends mainly on what works best for you. Individual ingredient feeding can be an accurate way to deliver specific nutrients to specific cows, but it's time-consuming, and weights of feed must be taken. TMR works well for mixing and delivering a special amount of nutrients to a group of cows. When Minnesota's top 50 DHIA herds were compared, no difference was found in milk quantity or quality due to the use of one feeding method or the other.

4. Keep weighbacks at about 5 percent. On the average farm of 65 cows, this means about two wheelbarrows' worth of feed refusals. Feed refusals should be a mixture of all feeds fed and not just cobs or stems. If weighbacks are all cobs or stems, increase feeding of the high-quality feeds to be sure cows are on full feed. Feed refusals are good feeds for growing heifers and dry cows.

5. Make sure feed is fresh. Feed at least twice a day with a TMR or four times a day with individual ingredient feeding. Push up feed another two or three times each day.

6. Clean the feed mangers daily. This is particularly important if wet feeds and animal protein are included in the ration. These feeds can get very unpalatable if not removed daily.

7. Keep feed in front of the cows for most of the day. Cows should not have to face empty bunks or bunks with unpalatable feed more than two to four hours each day.

8. Make sure your bunks have a smooth surface. While not proven through research, dairy producers indicate cows eat more and cleanup is much easier when bunk surfaces are smooth. Tile or epoxy coatings on cement work well.

9. Use low bunks. Feed bunks should be in a grazing position or only slightly elevated. Otherwise your cows will tend to throw feed or choke while eating.

10. Keep the mix right. If your cows are cleaning up the TMR, increase the proportion of all ingredients, not just some of them. Likewise, if you have a lot of leftovers, decrease all ingredients proportionately.

11. Be patient when feeding low-quality forages. Cows take longer to eat poor forages. Be sure to give them more access time when you feed low-quality (RFV less than 125) forages.

12. Remember that eating is a big part of your cow's job description. A well-producing cow will spend 12 to 14 hours each day either eating or ruminating. You need to make sure she has the feed and the feeding time it takes for her to do so.

13. Monitor ensiled forage and

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Mold Alert

EVEN IF YOUR FEED has stayed clean all winter long, it's time to be watching out for moldy silage and hay. The warmer and wetter conditions of spring are ideal for the growth of fusarium and other molds that cause digestive upsets and lowered milk production in your cows.

You can minimize mold problems by making sure to feed at least six inches a day off the face of your silo. It also helps to keep fresh feed in the feed bunks and to keep bunks clean (see separate article this issue). If you do find serious mold growth in your feed, discard the top layers until you reach cleaner feed.

What's serious? A little white growth might not be too harmful, but if you encounter substantial amounts of pink or pinkish-white mold, you'll be doing yourself and your cows a favor if you throw it away. —JIM LINN

Elliot's Find TMR Pays

BY LISA PETERSON

FARM FACTS: Roger and Agnes Elliott farm 210 acres and milk 80 cows near Evansville, Minn., with a rolling herd average of 18,302 pounds per year. They grow corn and alfalfa and purchase all additional inputs.

The Elliotts became a part of the Dairy Initiatives demonstration farm program in June 1992. They have been working with a diagnostic team that makes recommendations and helps them follow through on them.

SMART MOVES: In the past the Elliotts used an inside bunk and a computer feeder as their feeding system. One of the recommendations of the diagnostic team was to provide more feed to their cows and rely less on the computer feeder. The Elliotts decided to switch to a TMR ration when they added on to their facilities. They also divided the herd into two groups, 70-pound and 90-pound production levels. "We have increased production by nine pounds per cow per day in the last ten months and have lowered our total feed costs," Roger reports.

Another short-term goal set by the Elliotts and the diagnostic team was to build a bunker silo. They set up a small earthen bunker silo so they could learn how to fill and pack.

After several trials and errors, they are making a good-quality silage and plan to build two more bunker silos.

The Elliotts also found that there were not enough hours in the day to



Lisa Peterson



do all of the chores. As a result, they contracted out their heifers on an experimental basis. A Wisconsin producer will grow out their heifers to their specifications and return them to the farm six weeks before freshening.

PLANS FOR THE FUTURE: Short-term goals for the Elliotts include lowering their somatic cell count and freshening their heifers at a younger age. Long-range goals include doubling their herd in five years or less and hiring a full-time dairy worker.

ADVICE: Develop trusted sources of assistance and use them. The Elliotts feel that getting together several times during the year with the diagnostic team has helped them move the herd in the right direction. "We like the idea of meeting as a group and developing some common goals," they say. "When individual team members visit the farm, they know our goals and can work with us to meet them." 

John Bush '94



See the Light!

A simple light switch could be your key to improved production. Research has shown that cows that get 16 hours of light a day produce more milk than cows that get less than that. Why not try it in your barn?

BST, ROTATIONAL GRAZING, AND YOU

AS A DAIRY PRODUCER, you have several management tools available for manipulating how much milk you market and what kind of lifestyle you choose for yourself and your family. Two of these — rotational grazing and the use of bovine somatotropin—are described here.

These two techniques are frequently considered to represent different extremes (“sustainable” vs. “biotechnology”) of management. Something they share, however, is strong dependence on management quality. Either technique will fail to be profitable if used with poor management. Both require careful, constant evaluation of critical factors.

As you weigh your options, remember that use of either BST or rotational grazing does not prevent use of the other. In fact, very often those who pick and choose from available techniques to create a custom-made management style best suited to their particular operation have the greatest opportunity to achieve their profitability and lifestyle goals. ●

Thinking BST? Think Good Management First

by **BRIAN CROOKER, PATRICIA SCHACK**
and **MICHAEL MASLANKA**

To BST or not to BST? That is the question many dairy producers are asking in the wake of the Food and Drug Administration (FDA) approval of a prolonged release version of bovine somatotropin (BST).

BST has been shown to increase milk yield by 5 to 10 pounds per day and also increase the persistency of lactation for a total lactational yield increase of 8 to 12 percent. At the same time, extensive scientific studies have produced a wealth of evidence that BST poses no adverse health risk to cows and that milk and meat from BST-treated cows are safe for human consumption.

Before you make the leap to BST, however, it's important to recognize that the quality of your overall management program plays a major role in how much benefit you can derive from BST. If milk yield on your farm is substantially less than your cows' genetic potential, it makes sense to find and

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Rotational Grazing: Is It Right For You?

Rotational grazing—using a well-managed pasture in sections to meet forage needs—is gaining increasing attention from midwestern farmers. The technique can save time and money, decrease soil erosion and other environmental impacts of farming, and enhance the aesthetic and wildlife value of your land. But can it provide the quality and quantity of forage you need for a well-producing dairy herd?

Yes, says dairy nutrition specialist Jim Linn—if you do it right. The trick is to treat rotational grazing as an important part of your overall farm business, managing the land for productivity and balancing rations much as you would in a confined feeding system.

Here are some questions and answers to help you decide whether rotational grazing is for you.

What is rotational grazing? Rotational grazing is a pasturing system in which parts of the pasture, called paddocks, are alternately grazed and rested.

Why consider rotational grazing? Rotational grazing is better than continuous pasturing because the rest periods help keep the pasture forage in top condition. It has advantages over confinement feeding, also—less money and time go into forage harvesting and cows consume the forage at the time of peak quality.

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BST

Continued from page 7

fix the limiting factor or factors before adding BST or other production-enhancing techniques to your operation.

Overall quality management can be hard to assess. However, experience has shown that producers who use the following management techniques are likely to obtain a better response to BST than those who do not:

If milk yield on your farm is substantially less than your cows' genetic potential, it makes sense to find and fix the limiting factor or factors before adding BST to your operations.

- a record-keeping system to monitor herd and individual cow performance.
- periodic forage analyses and ration balancing to meet the needs of high-, medium-, and low-producing cows.
- use of milk yield and body condition score to determine when diet shifts are needed.
- herd health programs that focus on prevention.
- good milking practices and good maintenance of milking equipment.
- good heat detection and reproductive program.

If you have an excellent management program, you will likely experience little difficulty if you choose to use BST. However, we still encourage you to seek the advice of consultants, veterinarians, and other industry experts to minimize potential problems and maximize potential profits.

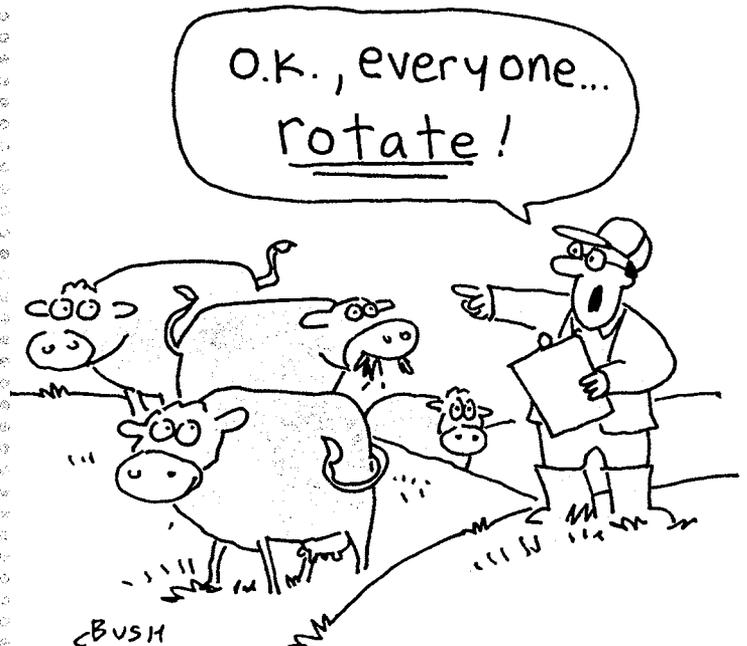
In many ways the BST-treated cow resembles the high-producing cow, so management programs should be similar. Keep in mind, management practices that work at one production level may be inadequate at higher levels. With BST, as with any production-enhancing technique, you must continually assess and improve your management program in order to achieve and sustain increases in milk yield. 🐄

Rotational Grazing

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How do I divide up and use the paddocks? The pasture is split into sections using a lightweight movable fence. You move the fence as needed—usually every one to four days—to give animals fresh forage and the grazed paddock a chance to rest and regenerate. A good manager watches the pasture and the animals' grazing habits and adjusts the rotation length and order according to growing conditions. To make best use of the pasture, each section should be grazed after the plants have their growth spurt but before they flower.

How do I establish the pasture? If you will be rotationally grazing existing pasture, begin by controlling weeds and improving fertility. (Once you begin rotational grazing, however, you will find that your cows take care



John Bush '94

of much of the weed and fertility control for you!) Then, depending on what's in the pasture already, you may wish to seed in legumes or other plants to increase the value of the forage. To convert tilled land to pasture or to upgrade a really bad pasture, use conventional seeding practices.

The best pasture has a variety of forages. Consider planting some parts of the pasture in forages that grow best during spring and fall and other parts in ones that grow best in mid-summer to ensure an abundant supply throughout the growing season. The resources listed at the end of this article provide more specific advice on choosing and managing pasture crops.

What about water? There are a variety of ways to provide water to grazing stock. You can use a single central water source and keep a lane open to it as you move fence. Even

better is to provide water in each paddock. Again, check the publications below for specific advice.

Do I need to supplement? Although farmers have made milk by pasturing alone, you'll need to provide supplemental grains if you want to maximize your cows' genetic potential for making milk. The amount of grain you feed depends on the quality of your pasture, the milk yield you want, and the condition of your cows. Table 1, adapted from information developed by Lawrence Muller of Pennsylvania State University, provides some general guidelines.

It's important to include minerals in your concentrate also. Base quantities on test of the forage (in this case, pasture) as you would in formulating any balanced ration. In general, you'll want to keep an eye on your cows' body condition and milk production and adjust grain and forage intake as necessary to keep your herd in top shape.

Do I need to feed other forage, too? You may have to provide supplemental forage when pasture growth is limited—for instance, during the middle of the summer. Whether you provide supplemental forage at other times is a matter of personal choice.

But isn't it time-consuming? It does take a little time to move the fence and cows. However, you're also saving time you otherwise would spend handling other forage sources. One farmer who kept track found that he spent about 15 minutes a day switching paddocks—but saved an hour a day that he otherwise would have spent making and feeding other forages.

If rotational grazing sounds like it might be right for you, you can get more specific information on how to get started by contacting your specialized dairy agent or requesting the publications at right:

TABLE 1. Grain (DM) feeding guidelines for an orchard grass-based pasture system during the grazing season.

4% FCM PRODUCTION (LB)	Grain (lb DM/day)		
	SPRING	SUMMER	FALL
above 80	20	27	20
70	17	23	17
60	14	18	14
50	10	14	10
under 40	8	10	8

Guidelines assume 1,300 pound bodyweight and are based on high-quality pasture available in adequate quantities assuming the approximate DMI from NRC. Lower quality forage will require more grain. Maximum grain DM fed should be about 2% of bodyweight. Some adjustment of grain should be made based on body condition scores and stage of lactation. Lower amounts are likely needed when the pasture contains legumes.

Pros and Cons.

ROTATIONAL GRAZING has a number advantages over confinement feeding. However, it's not without its disadvantages. Whether the benefits outweigh the costs depend on your individual values and circumstances. Here's an idea of the things you'll want to consider:

✦ **COST.** Although rotational grazing has startup costs associated with fencing and perhaps pasture improvement, in the long run you will reduce what you put out for fertilizer, equipment, pesticide, fuel, and labor. Studies in the eastern United States show savings of \$120 to \$150 per cow per year when farmers switched to rotational grazing.

✦ **TIME.** Rotational grazing does require time to move fences. However, it more than makes up for that by reducing the amount of time you need to produce other forages.

✦ **ENVIRONMENTAL IMPACT.** Rotational grazing can reduce many of the environmental impacts of farming—soil erosion, water quality impacts of barnyard runoff, and pesticide and herbicide use, to name a few.

✦ **AESTHETICS.** Rotational grazing may be a bit tougher on wildlife than unmanaged pasture, but it definitely makes better habitat than cultivated fields. It also gives you a chance to walk through, and so enjoy, your own land.

✦ **PASTURE QUALITY.** The even manure spreading and more careful management of plant species associated with rotational grazing can improve the productivity of your pastures. Studies have shown that an acre of well-managed pasture will produce up to a ton more of dry matter than a conventionally grazed pasture.

➤ **BALANCING RATIONS.** It's a little more complicated to balance rations when your cows eat right from the pasture because you're not out there actually measuring what they eat. However, it can be done. The publications listed at the end of the main article provide specific advice.

❓ **INNOVATION.** If you switch to rotational grazing, you will be making some changes in the way you do things. That will require some learning, some trial and error, some flexibility. For some people, trying something different is a plus; for others, it's a minus. Only you can decide whether it's right for you. ●

- **MANAGEMENT INTENSIVE GRAZING SEMINAR PROCEEDINGS: A PRACTICAL APPROACH TO PRINCIPLES AND PROCEDURES.** \$6.00 from Dairy Extension, 101 Haecker Hall, 1364 Eckles Ave., St. Paul, MN 55108
- **PASTURE FOR PROFIT (AG-FO-6145),** \$3.50 + tax. Minnesota Extension Service Distribution Center, 20 Coffey Hall, 1420 Eckles Ave., St. Paul, MN 55108
- **FORAGE LEGUMES—CLOVERS, BIRDSFOOT TREFLOIL, CICER MILKVETCH, CROWN VETCH, SAINFOIN AND ALFALFA (SB-5963-F),** \$4.50 + tax. Minnesota Extension Service Distribution Center, 20 Coffey Hall, 1420 Eckles Ave., St. Paul, MN 55108 

Looking Up

31 Things You Can Do to Brighten Minnesota's Dairy Future

Want to do your share to boost Minnesota's dairy industry? The Minnesota Dairy Leaders Roundtable, a coalition of dairy farmer leaders and CEOs of top dairy industry organizations, has developed a list of things dairy producers can do to help keep Minnesota dairying strong. Why not pick one or two or a half dozen to work on for 1994?

1. Be willing to change and focus on positive aspects of change.

2. Talk with other dairy farmers about your successes and the changes you made to achieve them.

3. Visit a Dairy Initiatives program demonstration farm and pick up a few ideas for use in your own operation.

4. Take time to have fun with your family, to get away from the farm, to enjoy a vacation.

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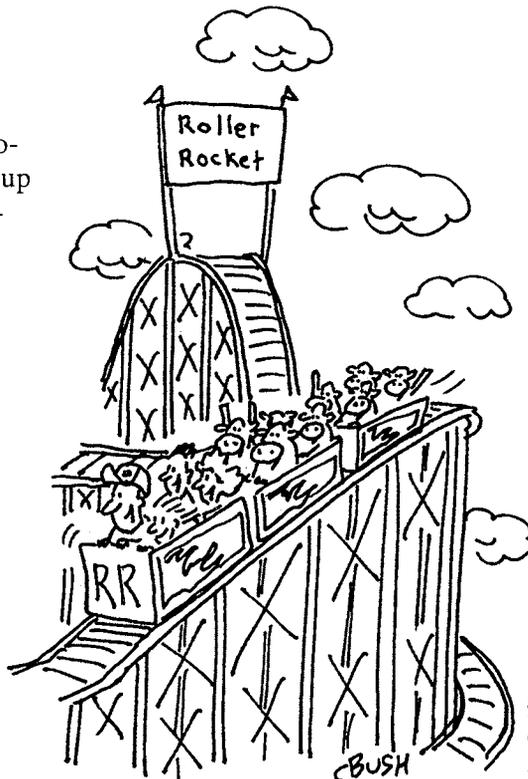
5. Develop skills for managing employees.

6. Learn ways to communicate better—with your family, with employees, with neighbors and others.

7. Join DHIA and use the reports to improve your herd and how you manage your cattle.

8. Consider joining a farm management organization.

9. Develop financial planning and cash flow skills.



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10. Find and use some of the financial information available to farmers.

11. Use A.I. and choose sires that fit your production goals.

12. Develop a preventive medicine program in cooperation with your veterinarian.

13. Work with dairy nutrition experts to improve your feeding practices.

14. Be alert to ways you can improve all aspects of animal care and comfort—stall design, ventilation, handling, and so on.

15. Become aware of the agendas of animal rights groups and speak up for animal agriculture.

16. Handle manure in accordance with environmental concerns and efficient recycling of nutrients.

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17. Focus on high-quality milk.

18. Plan for regular maintenance of your dairy equipment.

19. Work to keep SCC low to achieve quality premiums.

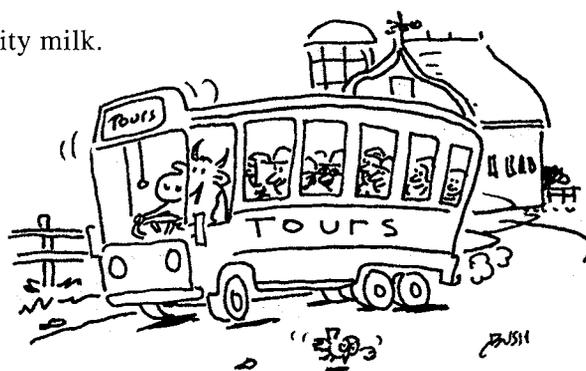
20. Keep abreast of antibiotic use and new regulations.

21. If they fit your goals, consider an alternative system of dairying—a calf-raising operation, rotational grazing, raising forage and buying grain, raising grain and buying forage, buying all feed, or seasonal dairying.

22. Take advantage of Extension and other educational programs to keep on top of the latest in management, nutrition, health, and sire selection.

23. Attend educational programs sponsored by companies and private sector organizations.

24. Share information with other dairy farmers.



25. Join dairy farm tours.

26. Be willing to help new dairy producers.

27. Build relationships with diagnostic teams, individual consultants, dairy professionals, other producers, company reps, university specialists, Extension educators, and A.I. technicians.

28. Maintain positive relationships with lenders.

29. Develop plans for transferring your property from one generation to the next.

30. Establish goals for your farm, herd, and family.

31. Evaluate progress in your operation in light of the goals you have established. 

Feed Bunks

Continued from page 5

high-moisture grain moistures closely when feeding a TMR.

Changes in moisture will affect the amount of feed cows consume. You will need to change the amount of feed in a TMR as the moisture changes to keep the same nutrient balance in the mix.

14. Keep dry matter (DM) content of feeds at 60% or better. Cows tend to consume less DM when fed diets high in silage or other wet feeds. Total moisture content at or below 40% will help keep intake optimal.

15. Pay special attention to crude protein (CP) when balancing diets. CP improves digestibility, which in turn enhances feed intake and so milk production. Thus, it pays to have adequate CP, especially from rumen degradable protein, to feed the rumen bacteria.

16. Provide plentiful water. If your cows are thirsty, they'll eat less. Allow one watering space or two feet of tank for every 15 to 20 cows, and keep water at least 6 to 8 inches deep.

17. Watch for stray voltage. If cows hesitate to eat or drink, they may be getting a shock when they try. Contact your local utility if you suspect a problem.

18. Feed forage first. Forage first thing in the morning lays a buffering fiber mat in the rumen, keeping appetite and digestion in good shape.



John Bush '94

Beyond the Bottom Line: **Passing the Farm to the Next Generation**

A four-step plan to help smooth the bumps

by SHARON M.
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Is your family farm ripe for transfer to the next generation? If so, you may be approaching the change with a bit of trepidation. The process is a complicated one because it includes a complex web of economic, legal, and social decisions. Unfortunately, many times the economic and legal intricacies get all the attention and the social angle is ignored or everyone assumes it will work itself out. Or, even more serious, the transfer process never begins because people don't want to deal with the conflict.

The more directly the issues involved in transfer are faced and worked through, the better off the transfer works in the long run. Following are some suggestions for smoothing the way.

Accept the inevitability of some conflict.

Disagreement is a natural part of any discussion that involves subjects as near and dear as the family and the farm. Remember, though, that conflict is a lot like sandpaper. Even though it may seem rough and disruptive, it is really helping to shape your work—the work of transferring the farm—into its best possible form.

Work on it together.

It may be tempting for the older generation to work out the transfer details on their own. But if you do so, you risk basing your decisions on inaccurate assumptions about your children and their wishes. You also lose the advantage of ending up with a plan in which each person feels like his or her feelings have been considered. It's perfectly okay for you to have the final say in the matter—after all, it *is* your farm. But you will be miles ahead if you involve others as you weigh the options.

Use a social-decisionmaking process.

A situation calls for the social decision-making process when it involves a value or role conflict between two or more people. Sound like where you are? Then rather than floundering around using the same old communication patterns, try the following procedure:

1. **Define the problem you want to solve.**
 Each of you should write down what you think the problem is. Then gather your definitions and shape them into a single statement with which you all agree. This step is critical to assure that everyone is focusing upon the same problem.
2. **Recognize the needs of everyone involved.**
 Acknowledge your individual needs as well as those you and your spouse feel as a couple. Both are indispensable parts of the full picture you are painting as you begin to resolve your problem.

As an example of individual and couple needs, let's say two generations are involved in the transfer of the farm operation. The participants agree that the problem to be solved is to develop a farm transfer plan. They then identify their needs as follows:

Older generation: *Individual needs* include being fair to all children, giving up ownership of what has been acquired, addressing their own mortality. *Couple needs* include being able to retire with enough income and yet maintain the farm as a viable unit.

Younger generation: *Individual needs* include resolving the problem of working only for wages, not owning any land, not making their own decisions. *Couple needs* include needing a more definite idea of what's ahead so that they can plan for the future.

In this step, each person should make his or

her own list of individual and couple needs. Be sure that family members who are not involved in the day-to-day operation of the farm participate at this stage, too, or you might find yourselves making assumptions about them that don't hold water.

3. Identify the feelings tangled up within the problem.

Express your feelings as an "I" statement rather than a "YOU" statement. For example, write "After working for wages all these years, I need to own some land and make some of my own decisions," rather than, "YOU don't ever let me make my own decisions."

If you can't write an "I" statement, perhaps you need to take some time to search within yourself to identify feelings you may not have acknowledged. Focus on the feelings that are preventing positive action toward an individual goal. Are you angry, frustrated, worried, anxious, confused, disappointed, or feeling helpless or powerless? Rate the strength of each feeling on a scale of 1 to 5. When you rate 3, 4, or 5 on a particular feeling, ask yourself:

"What do I need in order to reduce the emotional intensity entangled with the problem?"

"What do I want the other person(s) to understand about my position?"

"What parts of the problem am I responsible for?"

"What parts of the problem can I control?"

Be careful not to confuse experiencing an emotion with expressing it or acting on it. We also often want to limit "bad" feelings and only experience "good" emotions. As a result, we shut off a feeling like anger before we feel it fully because we fear the implications of expressing those feelings. However, we then spend a great deal of energy "keeping the lid on" the feeling rather than exploring it and using that energy to find a way to express it in a non-blaming way (an "I" statement versus a "YOU" statement).

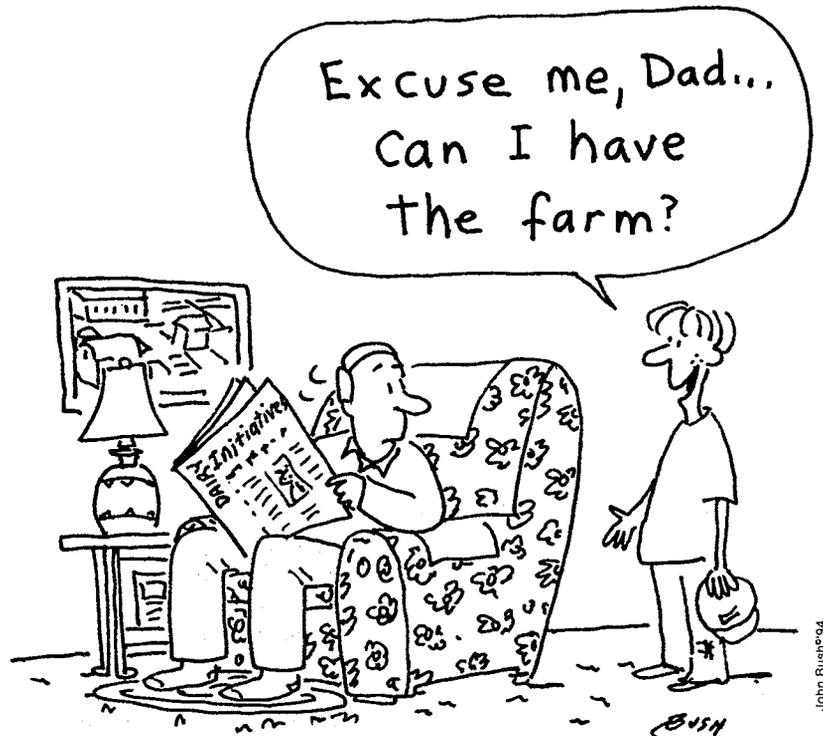
4. Identify and agree upon alternatives to tackle the problem.

Brainstorm about ways in which the transfer can be accomplished to best take into account the needs and feelings that have been expressed. If disagreements arise, have each person involved in the disagreement write down his or her answer to the following:

Continued on page 14

A Place for Everything

WHEN TENSIONS are high, the location of your discussions can play a big part in how well they go. If possible, choose a neutral place such as a restaurant, or alternate households from one discussion to the next to provide an atmosphere of mutual respect. ●



"Excuse me, Dad . . . can I have the farm?"

NO, THAT'S NOT THE RIGHT WAY to bring up the subject! But if you're a member of the younger generation and feel like your future is on permanent hold, it's okay for you to initiate the farm transfer discussion. Magazine articles or pamphlets about farm transfers can be a good way to begin. Remember, though, that for your parents there are a lot of issues—losing control, facing their age—that need working through. Be sensitive to their feelings, too. ●

Values and Roles.

MOST CONFLICTS are one of two types: A value conflict or a role conflict.

A *value conflict* arises when people differ in what they believe is right, good, or best. One such conflict that often arises within the farm transfer process is equity ver-

sus equality. Equality is treating everyone in the exact same way. Equity takes into account such things as what each person has contributed to the farm operation over time and his or her potential based on health, education, capabilities, and desires.

A *role conflict* debates who should do what. When one person takes total control of the transfer

process without getting input from others, a role conflict is likely to surface. Such authoritarian decisionmaking may appear in the short term to be less burdensome. In the long run, however, it may create unresolved conflict that affects the long-term financial viability of the business. ●

Take Five

AS ANXIOUS as you may be to resolve the transfer issue and get along with life, be careful not to rush the process. As you work through the emotional angles using the strategy described here, schedule in planned delays to allow tension levels to remain within tolerable limits. A time-out from the discussion allows everyone's heads to clear and more creative solutions to evolve. Strong emotions often clutter our minds. Private time away from the situation will allow you to refocus on what has been happening. ●

Continued from page 13

How do we agree?

- What are our hopes and positive ideas?
- What are our shared goals?
- What values do we agree upon?
- What roles do we agree upon?
- What are some possible resources?
- Who is assisting in positive ways?

How do we disagree?

- What are our concerns or worries?
- What are our incompatible goals?
- What values are threatened?
- What ideas exist about who should do what?
- What are the scarce resources?
- Who is interfering with whom?

First share your lists of how you agree. Then tackle the items of conflict.

When disagreements arise, many people say something such as, "I thought we were get-

ting along pretty well." It helps to remember that disagreements are normal when people work together as closely and for as many hours as you do in a farm operation, and when you're talking about something as important to each of you as the land and the business. If you're not out-and-out disagreeing at least occasionally, chances are there still are unresolved conflicts that are an undercurrent to everyday work. Those unresolved conflicts can have major impacts on the long-term success of the farm operation if you don't let them surface and deal with them.

Once you have decided upon an alternative, set a time to reevaluate the progress of the solution. Doing so gives you a chance to try another option if the first one doesn't work. Or, it gives you a chance to celebrate if it does!

By using this four-step process as you begin planning for the transfer of your farm from one generation to the next, you most likely will find that value conflicts and role conflicts work themselves out. And as a result, the legal and economic decisions will go more smoothly, too. ●

Passing on the Family Farm

EDUCATIONAL SESSION FOR FAMILIES DEALING WITH FARM TRANSFER ISSUES

March 29-30, 1994, St. Cloud Civic Center, St. Cloud

Topics to be covered include:

- Methods of Transfer
- The Personal Side and Family Relationships
- Protecting the Estate/Individuals from Undue Risks
- How to Get the Process Started

For more information or registration materials, contact your county extension office, bank, or an adult farm management instructor. ●

Wagon, Bunkers Work for Dombecks

By LISA PETERSON

FARM FACTS: Mark and Sue Dombeck own and operate a 960-acre dairy operation north of Perham, Minn. The Dombecks milk 90 cows with a rolling herd average of 23,920 pounds, and grow corn, alfalfa, and sunflowers. They are now feeding a total mixed ration (TMR) twice a day to all animals and have increased production while dropping feed costs.

The Dombecks became a Dairy Initiatives Farm family in May 1992. Since then they have been working to improve herd health and production and lower their feed costs.

SMART MOVES: The Dombecks had been feeding each cow on an individual basis using protein cards that listed the feed mixture, usually a combination of high-moisture corn and a dairy mix. The cards would be changed on DHI testing days. A year and a half ago they switched to a TMR feeding system, and bought a portable mixer wagon. The portable mixer gave them more options since they feed stock at two other locations and eliminated the need for other feeding equipment. They also switched from silos to flat storage bunkers without walls. This saves them about an hour every day in feeding time, because they don't have to wait for forage to come down the silo.

The Dombecks have found that the many advantages of the TMR system outweigh the few disadvantages. They have increased their milk production by 2,000 pounds while lowering feed costs by \$.50 per hundred-weight. Herd health has improved; they have had less problems with laminitis, and find the cows to be

more persistent in their lactation. With the new twice-a-day feeding system the Dombecks don't have to be in the barn as much, so they can structure feeding to allow time to pursue other interests. The TMR system allows them to buy in bulk rather than by the bag. This means they have irregular expenses, but in the long run they save money over buying products by the bag. The portable mixer wagon requires them to spend more time outside in the rain and snow, but it also allows them to feed at other locations.

ADVICE: If you have extra acres, Mark suggests, try growing sunflowers to substitute for part of the corn in your TMR mix. He has

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QUOTE:

"If the average dairy person wants to change the cost of storing forages and feeding, the bunker style is the most cost effective. Don't invest in walls—they make the system more difficult to handle and are inconvenient."

.....

grown sunflowers for about \$.06 a pound including "everything"—even land rent and hiring a neighbor to combine it. He has found it to be very economical compared to buying sunflower mix at \$.12 to \$.14 a pound. Sunflowers are easy to grow and do not require any processing, and the nutrients are similar to corn. He does suggest, however, that you grow only what you need. 🐄



Lisa Peterson



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