

CHAPTER 5: ORGANIC PRODUCTION

Background

Organic agriculture is based on a holistic approach that starts with soil health. Healthy soil yields healthy feed, which in turn produces healthy animals and healthy food for people. While the methods have been used for many years, today's organic dairy farm incorporates a vast wealth of technology, knowledge, and science in managing animal health, productivity, and soil fertility. The consumer marketplace has embraced organic dairy products including milk, yogurt, cheese, and ice cream. Dairy processors have had trouble finding enough organic milk to satisfy consumer demand.

State organic laws in a number of states around the country paved the way for uniform federal organic certification standards. Congress passed the Organic Food Production Act in 1990. A federal organic rule went into effect in October 2002. This rule created a National Organic Program with a single set of standards for organic production, processing, labeling, and accreditation for certification organizations that oversee organic operations.

The National Organic Standards Board defined organic agriculture as “an ecological production management system that promotes and enhances biodiversity, biological cycles, and soil biological activity.” The definition further specifies minimal use of off-farm inputs, and emphasizes on-farm ecological harmony. The practice is intended to be site specific and aims to conserve biological diversity within the farm as a whole (NCAT, 2004).



Federal organic rules require that ruminants have access to pasture.

The USDA accredits agencies that certify farmers as organic; farmers can retain any agency accredited by the USDA. Transitioning an entire dairy herd typically takes one year. After the herd is converted, new animals must be organic from the last third of gestation. The organic rule requires that cows have access to pasture, so at least a portion of the farm will ultimately need to be certified organic. The federal organic standards permit land to be certified organic 36 months after the last application of a prohibited material.

The farm must have an organic system plan (OSP) that describes the overall management of the operation and must keep careful management and production records. The OSP is kept on file by the farm's certifying agency and must be updated annually. Organic farms are inspected by a representative of the certifying agency at least once a year and these inspections include review of records. During transition, the farm must manage their cows organically, which affects feeding, housing, and health care practices. Any dairy farm in transition to organic should work closely with a certifying agency to develop a practical and comprehensive OSP.

In some cases, farmers may be eligible for state or federal assistance as they begin the transition to organic production. State Departments of Agriculture, USDA county service centers, and extension offices can all direct farmers to assistance programs.

There are a variety of reasons that producers choose to become organic producers. In many cases, the decision to farm organically matches the stewardship and animal husbandry values of the farm. Many producers are also attracted by the price stability of organic milk and by price premiums (see Figure 2).



Organic dairy operations must make efforts, like posting their land, to prevent contamination by prohibited substances.

Records and audit trail

Organic certification requires that farms document livestock management (including animal origin, feed, reproduction, and health care), production, inputs, and sales.

An organic dairy must provide a complete audit trail and records must be maintained for five years. While many dairy producers already keep careful records, the records for organic production are more elaborate than those kept on a typical farm. While some complain about mountains of paperwork, others say the more detailed recordkeeping has helped them become better managers.

Housing

Organic regulations require that all livestock have access to the outdoors. Ruminants must have access to pasture. The animals must also be provided with shade in the summer and shelter in inclement weather (NCAT, 2004). The options for housing vary: some organic dairies use free stall barns with free choice access to pasture. Some incorporate outdoor bedding and windbreaks. Housing must allow for the natural behaviors of the animals (Taylor and Zenz, 1996). Bedding materials, if edible, must be organic. Most farms opt to house animals in groups to make group feeding easier.

Feed

Organic cows must eat organic feed. Pasture and any supplemental feedstuffs or rations must be organic. Organic farms often, but not always, use management intensive rotational grazing (MIRG); while the rule requires access to pasture, it does not prescribe what kind of grazing system must be used. Whether grown or purchased, organic corn, soybeans, and small grains can add to the cost of production because they must be raised organically and can cost twice the price of their conventionally raised counterparts. This requirement can create an economic stress on a farm during the transition period, when the farmer must feed a more expensive organic ration but is not yet eligible for an organic price premium. After achieving certification, farmers who are able to market organic milk receive a significant price premium for their milk, enjoy price stability, and say the cost of organic feed is reasonable in proportion to the increased profit from sales.



There are limits to inputs that may be applied to pasture. Seed must be organic or, if a producer can document that the necessary seed is not available in organic form, conventionally grown but untreated. Genetically modified seed and inoculum are prohibited. Because nitrogen is one of the most difficult soil amendments for an organic farm to obtain, there is tremendous value in the cattle's manure. Generally, this is deposited right in the grazed pastures. Legumes are often planted along with grasses to boost the nitrogen in the soil and provide a balance of forages for the cattle to graze.

Herd health and biosecurity

Organic management stresses promoting health, rather than intervening to cure disease. The National Organic Program Final Rule is very clear, however, that "the producer may not...withhold medical treatment from a sick animal in order to preserve its organic status" §205.238(c)(7) (USDA-AMS, 2000). Organic dairies follow three general principles keep their animals healthy. These are: optimum nutrition, low-stress living conditions, and reasonable biosecurity practices. As with other dairy systems profiled in this book, biosecurity is an important part of organic production. Animals are typically kept away from situations where they might encounter other cattle.

The holistic approach of an organic dairy usually starts from the ground up — with healthy soil on the farm. Low-stress living conditions are key to preventing animal health problems. Spending time on pasture promotes the exercise, fresh air, and hoof-wear that improve health. Organic rules permit the use of a limited number of synthetic substances and medications. These appear on the Rule's National List of Allowed and Prohibited Substances, Subpart G of the National Organic Program Final Rule.

Some organic herds have very low somatic cell counts, while those of other herds are elevated (Dennis Johnson, personal communication, 2005). Organic dairy cows are treated differently than conventionally farmed animals when they have mastitis. Prevention in the form of sanitation is essential to reduce the incidence of disease. Replacement heifers are usually raised on the farm, reducing the chance for outside pathogens to enter the dairy. Newly introduced animals are usually quarantined to reduce the risk of disease transmission. When mastitis does occur, a common practice is to frequently strip the infected quarter. Some farms use no treatment, allowing the animals to recover from the infection on their own. Others incorporate probiotics, herbal supplements, and acupuncture. If antibiotics are used, the animal is permanently disqualified for production of organic milk.

Managing the incidence of infection and other health issues begins with prevention as well. The farm's focus is often on a system-wide goal of good health. Enzymes, vitamins, probiotics, herbal remedies, and a number of nontraditional remedies are permitted (NCAT, 2004). Organic dairy farmers assert that the general practices of the farm dramatically reduce the number of sick animals, and that the cattle have a tremendous ability to heal themselves with some extra care and support from the farmers.

Vaccines are permitted in organic production, and are incorporated in the health regimen. Hormones, including bovine growth hormone, or recombinant bovine somatotropin (rBST) are not allowed. In addition, physical alterations must be done only as a protection against illness or injury to the animals. Castration and dehorning are permitted; tail docking is not.

Because the animals spend time outside, hoof health and leg health problems are diminished. When health problems do surface, a number of treatments are permissible. Parasite control can be achieved with sound pasture management. In addition, a number of methods can reduce fly populations in the milking parlor, including fans and sticky strips placed near the entrance.

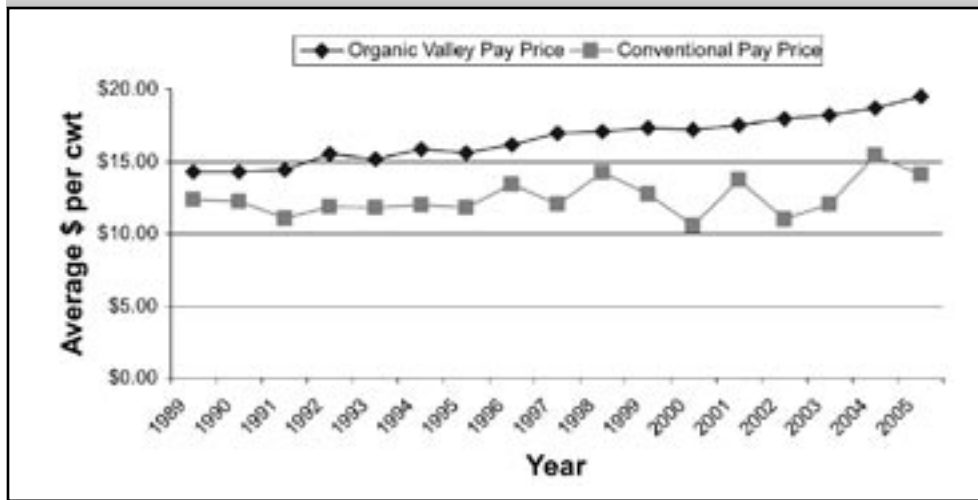
Since stress reduction is an important aspect of organic production, guidelines suggest calves stay with their mother for the first two days after birth, then calves are separated from the cows in the herd (Taylor and Zenz, 1996). Typically, the animals are given whole milk. Milk replacers are only allowed in emergency situations and must be organic. Producers who have herds with Johne's disease should remove animals that are infected.

In the winter, older animals may be housed indoors in a tie stall or free stall setup, or may be housed outdoors with a bedded pack in a sheltered area. Heifers are usually pastured during warmer weather. Animals are often grouped in pens, then moved to pasture when they are old enough to withstand cooler weather, or as the weather becomes more temperate.

Marketing and performance

Certified organic milk commands a premium price. Selling organic milk is not without challenges. In order to add a farmer to a milk route, the truck typically needs to be able pick up 40,000 pounds of milk along its route every other day. This amount usually requires a pool of organic herds located near each other. Some organic producers process and direct market their own milk as a way to add value on top of their organic certification.

FIGURE 2: Dairy Prices 1989-2005



Source: Organic Valley® Family of Farms and USDA-AMS Upper Midwest Milk Marketing Area, Minneapolis
 Organic Valley pay price is Midwest base price without butterfat or quality premiums
 Conventional pay price is Upper Midwest Class III price (3.5% butterfat)

Genetics and breeding

Breeding practices vary within the organic production system. While many dairies use artificial insemination, some use bulls. Some herds use Holsteins. Many organic producers who use managed grazing have adopted grazing genetics, trending toward Jerseys, Normande, Scandinavian Red, Ayrshires, Brown Swiss, and a number of crossbreeds recognized as efficient grazers. These breeds also produce milk with a high fat and protein content, and contribute characteristics like longevity and fertility to their offspring.



Many organic producers favor colored breeds.

Social and environmental concerns

Environmental stewardship is a tenet of organic production. To meet this goal, many organically certified dairies encourage biodiversity on their farms. Pasture-based systems are particularly helpful in this regard.

Some of the farms with large herds may have a manure holding facility. If the farm's acreage is inadequate, they must seek an outlet for the manure. Most farms in the Upper Midwest need to transport at least some manure during winter. Nutrients must also be cleaned out of the milking parlor and must be applied and managed in ways that do not contribute to polluting ground- or surface water. Organic rules prohibit manure application to frozen ground (NCAT, 2004). Some farms opt to compost manure from the parlor and winter bedding. Consult the appropriate state agency for rules regarding storage and disposal of manure and milkhouse waste.

No cost of production table is included in this section, in part because of lack of adequate economic data. The cost of production can vary considerably from farm to farm. During transition, in particular, production costs may be high because organic feed is more expensive than conventional feed. Farms that can graze land that is already certifiable and feed little or no grain typically have lower transition costs. To calculate cost of production, see the worksheet at the end of this book, or order *The Organic Decision: Transitioning to organic dairy production*, a workbook published by Cornell University.

If you are considering adding or changing a facility, see the *Resources* section at the end of this book

Resource people

The following people contributed information for this chapter. You will find complete contact information in the *Resources* section the end of this book.

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From Grazing to Organic Production

Bob and Theresa Mueller
Melrose, Minnesota

Background

In central Minnesota, dairy farms dot the countryside. Seen from afar, so many dairy farms dot the countryside that their silos glinting in the sunlight resemble a herd of Holsteins grazing on the landscape. Amidst this seemingly endless march of silos, a few dairy farms set themselves apart from the herd.

One of these is Bob Mueller's organic dairy farm, located near Melrose. Garrison Keillor's Lake Wobegon stories were born in this region, based on experiences Keillor had while living here decades ago. The Mueller farm is only a few miles north of the Lake Wobegon bike trail. Included among those folks in Keillor's stories are some who, like Bob, have taken a different path.

Back in 1979, Bob moved back to the family farm and worked for his father. At that time they had 48 cows. In 1985, he purchased the farm and continued farming conventionally for six years. Then Bob made two major transitions: first to grazing, and then to certified organic. His farm is certified by the Midwest Organic Services Association (MOSA).

"I made a decision around 1991 to expand to support two families," he reflected. Bob started reading about grazing. He nearly built another silo, but decided it might be better to move the cows to pasture to feed themselves instead of harvesting crops, storing them in a silo, then delivering feed to the animals.

"I read about grazing in winter and I asked my feed rep about it. He said they'd lose so much body condition and get skinny," Mueller noted. His research nourished some skepticism about this advice. The very next day he bought fence wire.

The farm has 400 total acres on clay-loam and sandy-loam soils, and the family milks about 100 head. The dairy supports his immediate family and two part-time employees. Now, Bob feels he can handle more



Theresa and Bob Mueller with their three daughters.

than twice the number of cows with the same labor as when he was milking 48 cows. "I'm not pushing a wheelbarrow through the barn anymore," he noted.

Certified organic

Bob learned farming from his father, a man whose generation used chemicals freely, but Bob had concerns about them. "I always cut the application rates in half. I wouldn't spray unless I absolutely had to," Bob said. He also experimented with cultivating for weed control. Sometimes, he noted, the farm had unsprayed fields that were cleaner than the sprayed ones.

By 1998, Bob felt ready to begin converting to organic field crops. He had some acreage that had not been sprayed with chemicals for many years. This acreage qualified for organic certification right away. Other land required 36 months of transition.

"I didn't know what I was doing. I thought I'd grow the soybeans and certify them later if they turned out," Bob recalled. "I ended up chopping them because there were so many weeds." Despite his concerns, the bean harvest was much better than he'd expected.

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“In '99, I went ahead and sent the [organic certification] paperwork in on 10 acres.” This soybean crop ended up yielding 20 bushels per acre and he received \$16 per bushel. The fields were extremely weedy, he noted, but his dad was impressed with the results nonetheless.

“The money was part of it,” Bob admitted, “but I like the challenge, too. I heard that year they were looking for organic milk. I went home and told my wife we were transitioning the whole farm to organic. My wife asked, ‘How are we going to make a living?’”

Bob wanted to ensure the farm would turn a profit. Unwilling to ignore any details, he hired an independent consultant. Here, he found help with soil testing and assessing all of his inputs to determine if they were approved for organic production. He had all of his fields tested at this time.

Marketing

He initially sold his milk to Pride of Main Street, a creamery in Sauk Centre, MN. In August 2003, he began selling to Horizon Organic of Colorado. In February 2004, he switched to CROPP, a producer-owned co-op that sells milk and other dairy products under the brand name *Organic Valley® Family of Farms*.

Housing and pasture management

After he started grazing, Bob undertook a series of remodeling projects. In 1991, he remodeled his tie stall barn, expanding it from 48 to 66 cows. He subsequently converted a pole shed into a 130-stall free stall barn with slatted-floor manure pits while he continued to milk in the tie stall barn. In 1997, he converted the tie stalls to a swing parlor.

Presently, Bob is producing milk with about 100 cows. He adds, “I’ve milked over 100 cows, but I’ve backed off since I transitioned to organic.”

For grazing and cropland, Bob owns 200 acres and rents another 200. He has converted some fields to pasture to facilitate rotational grazing for the milk cows. He separates the high- and low-producing groups. Cows get a new paddock after each milking. “If it’s hot out, I’ll open a gate and allow them access to trees for shade,” he said.

Herd health

After Bob started rotational grazing, he noticed a change in the health of the cows. The method boosted the general condition of cows’ feet and legs. Plus, it increased their longevity.

Prior to grazing, Bob fed a higher protein diet than a typical forage diet. As Bob pushed the cows harder with this diet, he started having animals with twisted stomachs. The problem was new: the farm hadn’t had a single surgery for as long as he could remember. “After I started increasing milk poundage, I had three surgeries for twisted stomachs within a five-month period,” he said. “I started having the veterinarian out more and more,” Bob recalled.

Now, Bob only has the vet out for pregnancy checks before they go out to pasture. He relies on preventive measures to keep his herd in good health. For example, he uses several routes to and from the barn to keep them out of the mud, thus reducing hoof problems. “I did have some hairy heel wart one time, but I haven’t had the problem lately.”

In addition, Bob uses sand bedding in the free stall barn because he believes it helps decrease the somatic cell count (SCC). Vitamin C and ointment rubs are used proactively to keep SCC low. His SCC averages 150,000, well below what it was during his conventional production days.

Yet Bob still faces some herd health challenges. He just fought a battle with *E. coli*, which killed 10 out of 15 calves. “I believe the warmer early part of the winter of 2003–2004 was the problem with the increased baby calf mortality,” he explained. As soon as the cold of winter hit, everything returned to normal. “I plan to watch things very closely and probably vaccinate the cows next fall,” he adds.

Feed and performance

Bob waited until all of his acreage was certified organic before he began selling certified organic milk in 2002. He purchases some feed to augment what he grows. Pasture comprises about 50 percent of the cows’ feed and total mixed ration (TMR) makes up the rest. Bob adds mineral and vitamin supplements that are

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allowed under the federal organic standards. The cows get their TMR when they come in to milk, then they return to grazing.

Before he started grazing, Bob's rolling herd average was in the neighborhood of 20,000 pounds. After he started grazing, it slipped 20 to 30 percent. In recent years, the herd average has crept back up again. But many farms can have great production numbers yet fail financially, according to Bob. Farms tend to look at the income increase when more pounds of milk are filling the bulk tank, but the farmers don't realize they're not making more profit because other expenses have increased. "I watch the checkbook more than those numbers," he said. Since transitioning to organic, his rolling herd average is about 18,000 pounds. "I'm working back from the cows, to the feed, to the soils. I actually should have started with soils," he said.

The herd's genetics are composed of a cross between Holstein and Normande. "I'm a little disappointed with the thriftiness of the calves. I thought being crossbred they should be stronger." The crossbred cows account for about 20 percent of his herd and will freshen in fall of 2004. The farm's cull rate has been below 25 percent. In the late 1980s, Bob purchased a few replacements, but had problems with them, so he has maintained a closed herd for the past 15 years and has been able to sell springing heifers each year.

Bob says he is quite pleased with his cash flow. "Most organic farms you talk to are selling their excess [heifers]. They do not have to buy replacements," he noted. And with time, his cows have become acclimated to the weather better than they used to be.

Family and labor

Many dairy farms are a family effort. But Bob handles the chores himself and hires two others to help him keep the process running: one full-time hired man and one part-time. Bob's father helps drive a tractor occasionally. Bob's wife Theresa teaches art part-time at an elementary school and the couple has three daughters.

Conclusion

"Since I've gotten into organic, I feel I can identify with it better than anything else I've done," Bob said. He likes the challenge of learning to farm organically, believes it's a more sustainable method of farming, and would like to see organic farming viewed positively. He's interested in promoting organic practices to other farmers and is a founding member of the Midwest Organic Dairy Producers' Alliance (MODPA).

Bob has suggestions for farmers looking into grazing or organic practices. "When I decided to go organic, I went to every meeting I could find." Several times each year, there are workshops, seminars, and farm tours for those interested in trying grazing and/or organic production on their dairy farm.

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The number of dairy operations in the Upper Midwest has been shrinking for many years. But while dairy farm numbers dwindle, the number of cows in the area has remained relatively steady (USDA – NASS, 2004), which indicates that the number of larger operations is increasing.

On larger operations, labor focuses on milking and cow care for optimum performance. Owners may choose to outsource heifer production in order to free up building space, labor, and feed for the animals producing milk. In many cases, the decision to outsource coincides with a herd expansion (Wolf, 2002).

Heifer growers do not, as a rule, fit one definition. There are large-scale feedlot-style growers and there are also smaller part-time heifer growers. Larger scale growers tend to have at least 200 head at any one time; generally these animals come from more than one dairy.

People who focus on raising heifers are not always former dairy producers. Some are children of dairy farmers; some have opted to grow heifers because the option allows them to continue to work with animals. Heifer growing allows for more flexibility and is less labor intensive than milking dairy cows. Most heifer growers also raise crops on their land and feel that feeding the heifers with their own crops is a good way to add value. Many also have some other livestock on the farm (Wolf, 2002).

Contract agreements

The first obstacle new custom raisers face is finding clients who will trust their ability to raise healthy, productive springing heifers at a low cost. Management requirements differ, and in many cases, the farm has no track record of producing healthy, vigorous springing heifers. Once a reputation is established, growers will usually find clients more readily.

There are a number of arrangements that heifer growers make with dairies. Usually, an annual written contract specifies a daily fee per day per heifer raised on the farm. These fees are usually paid on a monthly basis. Other contracts allow the grower to buy the heifer, then the original dairy farm repurchases her when she is roughly sixty days from calving. The price is often determined by how much the heifer weighs at that time (Wolf, 2002).

Many contract growers provide their own transportation, picking up and delivering heifers as needed. Growers sometimes specialize in a specific phase of heifer production and may work with other contract growers as a network. For example, a custom grower may take heifers from day three after birth to six months of age. Others keep them from six months through breeding. Still others may specialize in the period from breeding until return to the dairy where the cow will eventually be milked.



Calves are usually weaned when they are between four and eight weeks old.

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The rates for these stages vary, as do clients' expectations for care and performance. In a 2001 survey of U.S. dairy heifer growers, respondents reported that the fee for wet calves averaged \$1.88 per day. From weaning to six months, the fee averaged \$1.49; from six months to breeding the fee was \$1.50/day. After breeding, the fee rose to \$1.59/day. Fees vary and tend to rise and fall with milk prices (Wolf, 2002).

Facilities

Before a producer begins custom heifer production, he or she must first consider what the operation's maximum capacity is. Growers often take into account available pasture land and housing space. Crowding has a negative impact on heifer growth and comfort. Many dairies expect "wet" calves to be isolated. Buildings are usually the biggest expense new growers incur, and housing for wet calves may vary from hutches to individual pens to group housing (Dennis Johnson, personal communication, 2005; Kammel, 2004a,b).



Group pens may be created by removing partitions between individual pens after the heifers are weaned.

Greenhouse and hoop house shelters are commonly built to provide additional shelter and may contain several hutches or pens. Group pens may be created by removing partitions between individual pens after the heifers are weaned. Group housing reduces the time needed to clean pens and feed the animals, improves labor efficiency, and enhances animal socialization (Dennis Johnson, personal communication, 2005). Costs associated with labor and labor efficiency in group housing setups vary depending on the facility. Chores include feeding the calves, cleaning and rebedding the hutches or pens, medical examinations, and vaccinations. Both start-up cost and labor costs must be considered (Karszes, 1996).

It may be cost effective to use a remodeled tie stall barn to house calf pens or groups, provided that the buildings have adequate ventilation and the structure is sound. A free stall or bedded pack barn may also be used. Usually the group size is increased after six months of age and up to forty animals may be placed together (Kammel, 2004a,b).

Some larger dairies want the animals from their herds to spend at least part of their time out on pasture before they return to the farm. Pastured animals are perceived to be healthier because they get more exercise and develop a larger rumen. The end benefit of pasturing is higher milk production (Fanatico, 2000). When the heifers return and move into a free stall facility, they're better able to produce milk. If pasture is used, permanent and temporary fencing and water will be needed.



In this calf barn, the animals move from pen to pen as they grow.

Breeding

Most heifer growers are responsible for breeding. Heifers are typically bred between 13 and 15 months of age. The grower follows contract specifications for genetics, and contracts may also specify the number of attempts at artificial insemination. Many growers use a clean-up bull to ensure that all heifers become pregnant. The springing heifers are returned to the dairy three to four weeks before calving to allow them to get accustomed to their new setting and feeds. This time also permits the dairy to boost protein and energy in the ration to prepare the animal for milking and calving.



On many custom heifer raising operations, like this one in Minnesota, heifers spend a good deal of time on pasture.

Performance

Historically, heifer prices have tended to rise and fall with milk prices. The price has ranged from just over \$1,000 in early 1996 to more than \$1,700 (see Figure 3). Many contracts are very specific, requiring certain levels of daily gain, size and weight at breeding and at springing.

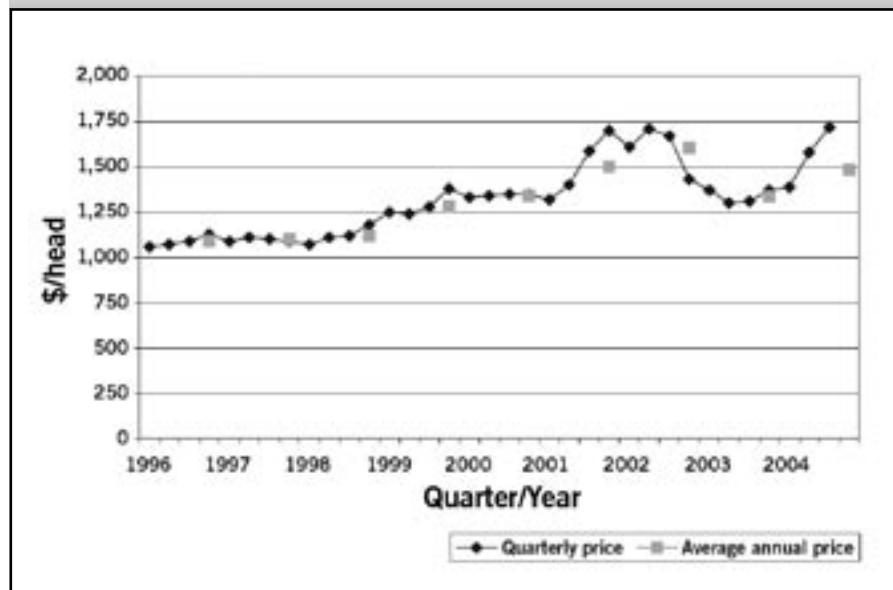
Contracts are usually revisited on an annual basis, and good communication between growers and clients will help keep the contracts satisfactory to both parties.

Raising heifers on pasture can significantly reduce feed, labor, machinery, building, and overhead costs. In a two-year Minnesota study, pasture-raised heifers had roughly 30 percent lower costs compared to animals raised in a feedlot setting, while average daily gains of grazed and feedlot-raised heifers were comparable. The same study determined that costs for the pasture system were lower than for the feedlot system and that stocking rate strongly impacts per-unit costs (Rudstrom, 2002).

Performance and financial records are important because profit margins are very narrow. Heifer performance is monitored by growers. Heifers are weighed and body condition scored. Rations are tested for adequacy. Feed costs are tracked carefully and building and pastures are kept fully stocked. Crowding can lead to decreased weight gains and health problems.

The demand for heifers raised by custom growers is expected to outstrip the supply of growers in the future (Cropp, 2003). However, during down markets, some larger dairy operations

FIGURE 3: Average Dairy Heifer Replacement Cost



Source: www.aae.wisc.edu/future/ (Dairy Market Data/Dairy Prices/Costs of Inputs)

that are carrying heavy debt loads do go out of business; others sometimes choose to stop outsourcing heifer production until the milk market improves. When these things happen, custom growers can lose a significant portion of their business.



Some operations segregate calves in hutches like these.

Biosecurity and health

Contracts between growers and dairies usually stipulate that health care, including vaccination, is the responsibility of the grower. Sanitation is crucial. Calves must be transported in clean trailers and are typically separated from each other in a hutch or pen arrangement. Some heifer raisers quarantine calves when they first enter the herd. Adequate ventilation, clean, dry bedding, and clean food and water help keep animals comfortable and healthy. Some operations make sure that one skidsteer is dedicated to removing bedding and manure and never used for any other purpose, reducing the chance that manure will contaminate feed.

Often, visitors to the farm are informed that the area is biosecure. Farms may post signs to alert feed delivery personnel and visitors. Some farms require people to put on plastic boots before entering an area where the animals are housed.

Growers monitor the animals, taking extra care throughout the early weeks to remove sick animals from groups and checking temperatures to ensure that the calves are staying healthy. Contracts determine who bears the burden when there is a death loss. In some cases the cost is shared. If the animal is healthy when the grower receives the animal, then the grower will bear the burden of death costs, but there are times when the cost of growing the animal is refunded. If something happens to an animal that was purchased from a dairy, the grower alone shoulders the cost.

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TABLE 10: Average cost of production to raise a replacement heifer to the point of calving, Minnesota, 2002-2004

Total number of farms reporting	53
Feed	\$480.48
Labor	\$28.65
Custom hire	\$11.77
Health	\$36.06
Breeding	\$7.62
Total direct costs	\$643.57
Average number of heifers sold or transferred	125
Detailed report available at: http://www.finbin.umn.edu/output/52759.htm	

Source: University of Minnesota Center for Farm Financial Management FINBIN

Note: These records do not necessarily predict results on any one farm or in all areas for all farmers.

To find current cost of production records for your state, contact:

Michigan

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Michigan State University
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Stephen Harsh (517) 353-4518 harsh@msu.edu

Minnesota

Center for Farm Financial Management
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Wisconsin

Center for Dairy Profitability
University of Wisconsin
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TABLE 11: Capital start-up investment for heifer raising

HOUSING	\$135 to \$675/calf
FENCED PASTURE	\$75/calf

Source: Kammel, 2004a

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If you are considering adding or changing a facility, see the *Resources* section at the end of this book.

Resource people

The following people contributed information for this chapter. You will find complete contact information in the *Resources* section the end of this book.

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