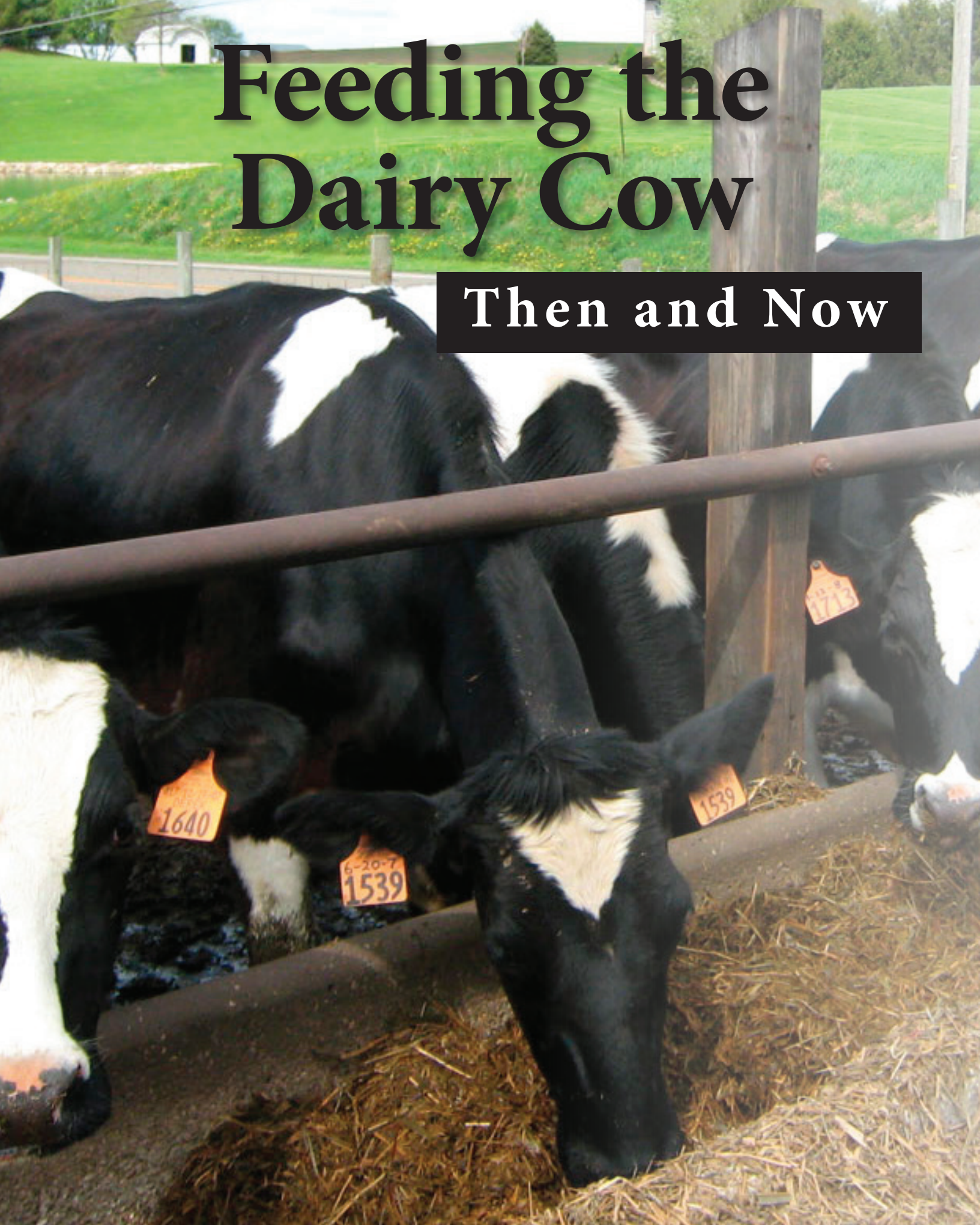


Feeding the Dairy Cow

Then and Now



The farmer's responsibility is to manage the dairy cow to keep her healthy and productive. In the beginning, this meant putting her on the best pasture he could. The dairy cow's job was to use her superpower to turn the grass she grazed into milk (and to drop manure to build the soil).

Pasture

Dairy farming began on homesteads where farmers milked their own cows for their family. As homesteads became villages, and fewer people owned enough land to keep cows, dairies produced milk for local residents. Most dairies had no more than a few dozen cows.

The farmer milked twice a day and knew which cows were pregnant, which were lactating, which were dry and he could supplement nutritional needs by hand. It was laborious and not very scientific. The complexities of the rumen were not known, nor the real requirements for vitamins, minerals, enzymes, amino acids, fats and proteins.

Pasture, if managed carefully, can provide most of forage for dairy cows. The advantages of grazing include:

- Less cow-direct labor for the farmer
- Decreased resource needs and risks for procuring forage
- Less manure handling
- Less bedding need
- Better cow health from grazing
- Better milk quality from grass/feed ratios

However, there are limitations to pasture-based feeding, which include:

- Costs and labor of pasture and fencing maintenance
- Supplementing the cows' diet to maximize their health and productivity

- Weather-related constraints on grazing (short season, drought, flood)

Dairy cattle can sustain themselves on grass and hay, but those bred to produce milk are less able to put fat on their backs, even in low stress environments with abundant grazing.

"It is very difficult to fatten up a cow that produces a lot of milk. A good dairy cow ... looks like ... skin and bones to the untrained eye." Steven Judge, Researcher & Writer

A lot has changed.

"Dairy cattle can sustain themselves on grass and hay, but those bred to produce milk are less able to put fat on their backs"

Total Mixed Ration

Cows are ruminants, built to thrive on fibrous flora, such as grass and hay, but they can also do well on mixed rations. Total mixed rations (TMR) consist of forage and grain ingredients blended together to specific nutrient concentration. Mixed rations should be formulated in consideration of the nutritional requirements of the top third of the cows in each group.

Advantages

The efficient feeding of a mixed ration exerts a positive influence on cow health, milk production and herd management.

The advantages to feeding dairy cows a total mixed ration include:

- Cows consume the desired forages
- Cows get the optimum ratio of forage and grain
- A lower risk of digestive disturbance
- Improved feed efficiency and less waste

(continued on next page)

Davis-Taylor Insurance
• Life • Auto • Crop • Commercial • Personal
1000 Red St., Red Oak IA • 712-623-4813

CORNELL ABSTRACT COMPANY
1200 Johnson County
712-36-3845
cornellabstract.com
1811 Hill Ave., Spirit Lake IA

Function Cafe
• Daily Specials • Open 7 Days
Smoked Meats & BBQ
Pineberry Short-cake
1000 N. Hwy 163, Bedford • 712-523-2454

Trucking, Inc
Serving Central USA
• Anhydrous • LP
• Diesel • On-Die Fuel
1000 N. Hwy 163, Bedford • 712-523-2454
365 560th St., Albert City

Call and place your order for "Pie to Go!"
712-362-9046

Senior Memorial Home
Independent Living at Affordable Rates
712-737-2206
1000 N. Hwy 163, Bedford

Planted Treasures
Garden Gifts
1000 N. Hwy 163, Bedford
712-362-9046
Mon - Fri 9am-5pm
Sat 9am-2pm
www.plantedtreasures.net
www.plantedtreasures.net
Marsha Smith
712-737-2206
Cell 541-330-8976

Copyright

Copyright ©

Chipman Farms LTD

712-744-3641

840 Mt6, Harlan IA • Feed Grinding - 840 Rd. Mt6

Iowa's Only BBQ Buffet

712-328-2277

2327 S. 24th St.,
Council Bluffs

Sandwiches • Breaded Chicken

Soft Serve Ice Cream

BBQ Specials!



Like us on Facebook!

641-322-4182

300 9th St., Corning IA

Friday Night Fish Fry

Saturday BBQ Ribs

Award Winning Burgers

aged Steaks • Seafood

Sandwiches

712-262-9871

Grand Ave., Spencer IA

712-722-3139 (O)

712-470-1352 (C)

Email: feeders@mtcnet.net

Holstein Steers

Kent Prussmann

Fig Avenue, Rock Valley IA

AseraCare hospice

Council Bluffs

24/7 • Hospice Aides • Social Workers

Spiritual Guidance • Bereavement

Medical Directors To Oversee Care

and Continuous Care

Honor Veterans program

712-325-1751

Council Bluffs • www.aseracare.com

MANOR

ASSISTED LIVING

CARE UNIT

712-202-0171

MANOR-MANOR.COM

OR

LIKE US ON FACEBOOK

2015 3RD AVE. N.,

ESTHERVILLE, IA 51334



In addition, there are some potential advantages:

- A mixed ration may include commodity feeds for cost savings
- Less labor may be required for feeding
- The ration may be mixed and delivered with high accuracy

Indoor feeding based on a mixed ration has been proven to increase flow and decrease milking time while delivering individual nutrition for each cow.

Disadvantages

Because efficient mixed ration feeding depends on feeding cows according to their production stage, it is preferable to group cows. This is not feasible in small herds and can also be limited by the size and configuration of the barn. The most common result of feeding all cows the same ration is some cows may over eat while others may not get the nutrition they need.

The University of Michigan offers the following guidelines for grouping and moving cows on mixed rations.

Grouping Cows

- Group cows by their production stage
- Add more groupings as herd size increases
- Separate first-calf heifers

due to their smaller size, growth requirements and lower competitiveness to reduce stress and ensure adequate consumption

- A week after calving, put fresh cows in a high production group for about three months
- When milk output falls, move those cows to a lower production group until their body condition improves.

Properly formulated rations should support the cow and offset dramatic falls in her milk production.

Moving Cows

- Cows do best when they're moved in small groups instead of individually
- Moves at feeding time minimize social interactions and related stresses
- Regularly scheduled moves are easier than erratic moves
- Move cows in consideration of their production state
- Try to limit heat detection to one group
- Increase grain allotment by five pounds for a few days after moving

Automated Feeding

Automated systems are easy to install and operate, low maintenance or maintenance free and designed for multiple types of feed. Automation

has brought comfort, convenience and precision to the care and feeding of dairy's cash cows.

No one system fits every operation, but chances are there's a system for every operation. First and foremost, the purpose of automated feeding is to deliver feedstuffs to the cows, individually or in groups, at greater efficiency than that possible by grazing and/or hand-feeding. Every dollar a farmer invests in automation should return dividends over time in ever-increasing efficiency and profitability.

"Feeding is the largest single cost on a dairy farm, representing up to 50 percent of total running costs. Feeding tasks are, after milking, the most time-consuming activity. Getting the right amount of feed, at the right time, to your dairy herd is key to animal health, to good reproduction performance, and to farm profitability.

Having an automatic system do the work is vital to farmers' lifestyle and to optimal farm management." DeLaval Director Fernando Mazeris

Dairy interests—university ag departments, government agencies, agricultural institutions, research facilities, private companies—have invested large sums to understand the dairy cow and the dairy business. As research grows, they develop products and refine technologies to improve cow health and bolster farm profitability.

Parlor Feeders

Parlor feeders are used in feed areas as well as the milking stall. For milking, they dispense a small amount of feed into the milking stall to facilitate quick and easy loading. The cow walks in and while she eats, she's milked. Tests have shown higher levels of oxytocin when cows are fed during milking.

Standalone Feeders

Several mechanized grain-feeding systems are available to replace or supplement the parlor grain feeding system. These systems are designed to dispense supplements to cows appropriate to their stage (pregnant, lactating, dry). The more advanced feeders record and report each cow's body condition and dispense feed accordingly.

Free-choice, electronic grain feeders

These units allow cows equipped with an identification unit (typically a magnet, key or chain) to enter a feeding area. These systems do not monitor or restrict the cow's amount of access time or grain consumption. Free-choice feeders require oversight to prevent the stress of over-feeding and related digestive problems. The advantages of these systems are their lower cost and maintenance due to their simplicity.

Preset or computerized grain feeders

These systems do control the amount of grain an individual cow can consume during a set period of time. Computerized systems cost more, the price varying according to the volume of feed they hold and the complexity of features desired. Computerized feeder features include:

- A print-out to show each cow's total daily grain consumption
- Identification of cows that do not consume their allotted grain
- Capacity to dispense the grain over a preset time
- Capacity to dispense more than one ration mix
- Milk collection data for each cow
- Individual health reading for each cow
- An alert system to signal malfunction or power interruption

(continued on next page)

Farmers State Bank
We Understand It Because We Live It
www.fsbbanks.com

2018 Top 10 Best Burger Finalist

Breakfast • Lunch • Dinner
Daily and Nightly Specials
Friday Fish Fry

712-283-2103
101 Main Street, Sioux Rapids IA

TRUCKING LLC
Complete livestock hauling
Local and long distance hauling
Dairy livestock hauling
800-676-2748
www.bglivestock.com

Ralph's Komer
Great Breakfast!
Dinner and Nightly Specials!
Steak • Fish • Pizza • Burgers
Roast Beef

712-665-2046

& County Realty
715-542-2150
darioniofarealty.com

Insurance Association
Products Offered:
Landlord protection
Umbrella policy

Services Offered:
GRAIN
FARM STRUCTURES
Liability
HOMEOWNERS
FARMOWNERS

712-623-3754
2 Reed St., Red Oak IA

Copyright

Feed Mixers

The stationary mixer feeder typically features a vertical auger, a discharge door and can mix feed volumes from the 250 to 500 cubic foot range to the eight to 14 cubic meter range. Self-propelled mixer feeders combine the speed of self-propulsion with the efficiency of a silage-cutting system. These feeders can be set to mix distinct rations for multiple groups of cows.

Silage Cutters and Distributors

A silage cutter is equipped with heavy-duty knives and a hydraulic bypass system to provide adequate pressure for cutting rough plant matter. Some can cut silage blocks



up to 3.4 feet in depth. A cutter typically operates on top of a distributor that dispenses the silage to the feed area saving the farmer labor and time.

Feeding Robots

Feeding robots come in suspended and wheeled types. The former move around by a suspension system by which they move vertically and horizontally to avoid obstacles while dispensing feed. The latter move around on wheels and require more attention from the farmer. Feeding robots typically have mixing augers and cross-conveyor belts that allow dispensing on two sides. They can be configured to work as a system with a stationary feed mixer, a feed kitchen with feed floors or with storage bunkers. In addition, they can be loaded to scatter bedding in stalls and resting areas.

Feed Scrapers

These broad blade/broom type devices are designed to pass through feeding areas and push scattered feed back towards the cows on a preset basis. With a continuous supply of scraped (refreshed) feed, cows eat more, which increases herd health and milk production. Feed scrapers are designed to fold up and drop into a crevice or lay flat to allow traffic in the aisle.

“Between improved mixing and feeding equipment technology, competent ruminant nutritionists, computerized ration formulation and diet modeling, along with the services from private and commercial

laboratories that provide extensive information on feed quality, today’s commercial dairy farmers should never wonder how to maximize or improve milk production.” John Hibma, Farming Magazine

Calves

The feeding of dairy cows can be done with automated systems, too. Researchers have learned that calves that attain weaning weight quickly will outperform their peers throughout their lives. Automatic calf feeders support this by allowing instinctual, on-demand feeding that allows calves to move around freely, which ensures good physical development and future production quality.

An automated calf feeder provides warm, adjustable milk formulations delivered through a nipple. This

supports the calf’s instinct to suckle, which aids digestion while supplying nutritive balance and absorption. Each calf’s consumption is monitored and compiled.

Advantages of Automated Feeding

Feeding technologies evolved as farmers needed ways to feed their cows more efficiently without compromising their health and milk production. Because dairy cows go through three stages and over- or under-feeding during one stage can have deleterious effects on another, it is increasingly important to achieve a high degree of accuracy in feeding. Automated feeding allows for the individual calibration of feed for each cow in the herd. Automation compiles information to the farmer apprised in real time of each cow’s body condition, feed consumption, milk production, milk quality and more.

Many feeding systems have smart features with built-in diagnostics that allow two-way connectivity between mobile phones and the internet. For example, a farmer can send a text message to his feeding system to adjust a cow’s feed. He can access feeding records and receive reports on his phone.

The system monitors all records, sends alerts when unprogrammed changes are detected and backs up all data. Since data is kept in real time, cows can be checked remotely and in the event of an alarm, response can be made immediately. Mechanically, automated feeding systems ensure the thorough and exact mixing of all food stuffs and supplements which ensures that cows consume all their feed. Cows can be fed efficiently and optimally for each stage of production, such as grain mixes fed heavily to high producers only, without over-feeding low producers. Calf breeding periods can be reduced by providing the right quality and

temperature of milk several times a day. They can be weaned gradually, given time to eat more so that their rumens develop well and they grow into strong, healthy ruminants for the next generation of dairy cows. Well-fed cows are more relaxed, calve easily, milk better and cycle sooner.

1. Do you want to save time feeding your cows?
2. Would flexibility for you and structure for your cows be useful?
3. Would four to six feedings be better than two?
4. Would it be helpful to deliver more types of rations?
5. Do you have a good system for



Automated feeding systems are easy to use, low maintenance, save labor, save time and reduce accidents and mistakes.

Automation frees the farmer from repetitive, routine hands-on contact with his cows, giving him the option to oversee the herd from other vantage points.

Disadvantages of Automated Feeding Systems

Automated feeding requires investment in specialized equipment, some of which is expensive. The equipment must have the capability to thoroughly blend the feed ingredients. It creates a need to group cows into two or more groups. Rations must be carefully formulated and checked. Pasture feeding can complicate feeding mixed rations.

Technology Checklist

The following checklist is adapted from one that appeared in the Progressive Dairyman as a guide for farmers on the fence about automating at all or more.

- putting up feed?
6. Do you have room to add or expand a feed building?
 7. Are your buildings within 150 feet of each another?
 8. Do you have three-phase power?
- Six answers in the affirmative mean your operation would benefit from dairy feeding technology.



- J.E. Holloway

Sources
 Automated Dairy Systems
 Dairy Master
 DeLaval
 Gericke
 Lely
 Modern Farming
 Mother Earth News
 North Dakota State University
 The Progressive Dairyman
 Trioliet
 University of Minnesota

Calvig Boarding Kennel
 324-2489 • 324-3653
 Highway 105 • Northwood, IA

Man's Life
 Breakfast!
 Main Street Council Bluffs • 712-328-3360

Yards & Etc.
 712-732-4449
 Farmsteads • Farmstead Clean-up
 Service: Trimming • Pruning • Removal
 Hwy 71 • Storm Lake

Care Initiatives
 Long-Term Care
 Corning | Specialty Care
 1614 Northgate Drive
 641-322-4061
 www.careinitiatives.org

Tractor
 Fish & Chicken 2nd & 4th Saturdays
 This Day is Mexican Food!
 Grant, IA • 712-763-4425
 Used Farm Equipment
 Grant, IA • 712-763-4525

Cedar Rock GRILL
 cedarrockgrill.com
 Storm Valley, IA
 712-476-2600

Denison CARE CENTER
 712-263-5611
 Long Term Care
 Short Term Rehab
 Shoulder • Knee Replacement
 We have the latest equipment to facilitate a quick recovery
 1202 Ridge Road • Denison, IA