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Livestock Fencing Considerations

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Fences are built for a variety of reasons, ranging from strictly ornamental to strictly for control of livestock. This article will address initial considerations when designing fences to control livestock.

Fences are barriers to restrict movement of livestock. Barriers may be physical, psychological, or a combination of the two. Physical barriers contain enough materials of sufficient strength to prevent or discourage animals from going over, under, or through the barrier. Wooden, woven wire and cable fences, and welded panels are examples of physical barriers. Psychological barriers depend on inflicting pain to discourage animals from challenging an inferior physical barrier which, by itself, could not be counted on to contain them. Electrified and barbed wires are examples of psychological barriers.

Where they are capable of getting the job done, psychological barrier fences are preferable because they are less expensive and easier to construct. Two ISU Extension publications give information about livestock fencing costs. Get copies at your county ISU Extension office or on the web.

1. Estimated Costs of Livestock Fencing (FM-1855)
<http://www.extension.iastate.edu/Publications/FM1855.pdf>
2. 2000 Iowa Farm Custom Rate Survey (FM-1698)
<http://www.extension.iastate.edu/Publications/FM1698.pdf>

Physical barrier fences are more reliable or their cost disadvantage is minimized in the following situations:

1. Permanent fences
2. Property boundaries
3. Areas where animals will be crowded or excited
4. Areas where you expect to introduce animals that are not used to fences
5. Areas near stored feed or pesticides
6. Wherever fence failure has a high cost in time or money
 - Along public highways
 - Where animals with different owners are on opposite sides of the fence.
(This can lead to altered breeding

plans, compromised disease control, and lots of sorting).

Electrified fences offer cost, ease of construction, and flexibility advantages in the following situations:

1. Temporary fences
2. Difficult terrain (around curves, over hills and valleys, through brush, across wetlands)
3. Where animals are not crowded or excited or spooked by dogs, coyotes, or humans
4. Subdividing pastures for management intensive grazing
5. When experimenting to determine the best location for a more permanent fence

Beef and dairy cattle are well suited to electrified fences. They move slowly so seldom run into the wire. They are large enough to make solid contact with the soil and to allow the wires to be placed above the vegetation, and their short hair provides little insulation from shock.

Horses move faster and don't have outstanding straight ahead vision, so they're more apt to run into the wire. Visibility of the fence is crucial with horses. Electrified tape or electrified rope works well for them. Horses don't require a strong shock. They sometimes react unpredictably when shocked and are more apt to become entangled in the wire than other animals. High-tensile smooth wire is not recommended for use with horses because it's hard to see, will not break, and acts like a cheese cutter on horse flesh should a horse become entangled in it.

Sheep and goats have coats that insulate them from some of the shock. Due to their shorter stature, fence conductors must be placed nearer to the ground. These species require more wires than for cattle, but fences with sufficient wires properly spaced can provide a reliable deterrent to sheep and goats. Specialized electrified netting materials have been developed that are very effective, particularly with sheep.

The effectiveness of any fence will depend on what

kind of animals are to be kept in or out and how determined they are to breach the fence. Design fences for "worst case" scenarios, especially if the cost of fence failure is high. The following situations may test your fences:

1. Bulls and rams are harder to contain during the breeding season. Taller fences with closer wire spacing may be needed to contain them then. If possible, keep distinct breeding groups out of sight and hearing from each other. One should never depend on anything less than a physical barrier fence to contain stallions. However, electrified rope can be placed inside physical barrier fencing to keep horses from rubbing on fences or chewing on wooden fencing.
2. Hungry animals are more apt to challenge a fence than well-fed ones. The solution is to arrange for more feed, not build a fortress fence.
3. Animals deprived of water will breach most any fence in short order. A good supply of easily accessible water is essential regardless of fence design. Allow plenty of space between water tanks and fences. If the whole herd drinks at the same time, there's often some scuffling and butting around the tank, and animals might be pushed through the fence.
4. Panicked animals may run right through a fence, regardless of its design. It may not be your animals that panic. Opt for highly visible fencing materials where deer might be a problem.
5. Weaning may trigger an urge for mothers and their offspring to be reunited. Weaned calves have been successfully separated from their mothers using as few as two electrified wires. Both cows and calves were "trained" to respect the electric fence before weaning. Calves were left in the pasture they were familiar with, and the cows were moved to an adjoining paddock. Not guaranteed, but it has worked for some. If you're skeptical, add more wires or separate cows and calves so they're out of

sight and hearing, if possible. Some type of woven wire fence or electrified netting will likely be required to keep lambs separated from ewes.

6. Animals not “trained” to electric fences may be through the fence before they sense any pain. Train animals to electric fences by placing the electrified wire where animals can come in contact with it inside physical barrier fences. If the training enclosure is not too large, animals should be schooled in from one to three days.
7. Electrified fences lose some of their “zip” under dry conditions and may not deliver a strong enough shock to intimidate determined animals. Locating electrical grounds in soil likely to remain moist will help.

More detailed information concerning design, specifications, and materials, especially for physical barrier fencing and working facilities, is available in a series of handbooks developed by Midwest Plan Service. View and order the following handbooks at the ISU Extension office in your county.

- Beef Housing and Equipment Handbook (MWPS-6)
- Dairy Housing and Equipment Handbook (MWPS-7)
- Horse Housing and Equipment Handbook (MWPS-15)
- Sheep Housing and Equipment Handbook (MWPS-3)

Information that deals with building electrified and non-electrified fences with high-tensile wire is available in the publication High-Tensile Wire Fencing (NRAES-11). It can be ordered from NRAES, 152 Riley-Robb Hall, Ithaca, NY 14853-5701. Cost is \$4 plus \$3.75 for shipping and handling.

Fencing Systems for CRP Land (CRP-8) is an ISU Extension publication that includes information about how electric fencing works and reasons why electrified fences fail. It can be obtained at your county extension office or off the web. <http://www.extension.iastate.edu/Publications/CRP8.pdf>

Highlights of the 2000 Iowa Farm and Rural Life Poll

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The Iowa Farm and Rural Life Poll provides insights into the opinions and attitudes of rural Iowans. The 2000 poll focused on biotechnology, services, immigration, quality of life, and several other issues. Questionnaires were mailed to a random sample of 4,997 farm operators in February, and over 61% responses were returned. You can find links to the surveys on the Farm Economy Team website at <http://isufarmeconomyteam.org/alone/social.html>.

Thirteen biotech statements that respondents were

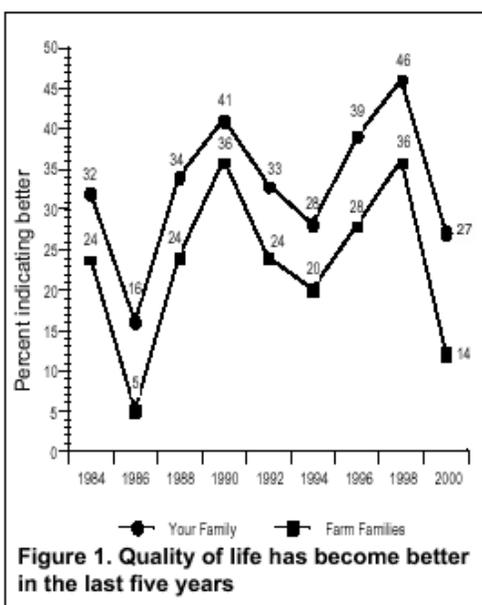
asked to indicate their agreement to yielded the following interesting opinions. Eighty-five percent agreed with the statement, “It is dangerous to have so much of the nation’s food supply in the hands of a few firms.” Ten per cent agreed with the statement, “Cloning livestock, like calves and sheep, will produce safer food.” Forty-eight percent were unsure about the statement, “A Domestic biotechnology industry will protect against food safety problems arising from imported foods.” Overall, Iowa farmers gave a very mixed view about food safety and biotechnology.

Sixteen items were listed with regard to food safety and health issues. Respondents were asked to indicate their level of concern about each issue, then the issues were ranked by the aggregate response. The irradiation of food ranked lowest with 76% percent indicating no to moderate concern. Salmonella in food, E. Coli contamination, and Hepatitis were the top three concerns with over 88% indicating they were moderate to very concerned. This can be compared with the third from the last concern of genetically modified crops (GMOs) where 53% indicated they were moderate to very concerned. This indicates that traditional food concerns continue with relatively new concerns like E. Coli far outstripping concerns for GMOs, chemical fertilizers, and irradiation of food.

There continues to be concern regarding the closing of rural businesses and consolidation of schools and service providers. However, results of the 2000 poll did not differ appreciably from the 1990 poll. For

example, in both polls respondents indicated they traveled an average of seven miles to their library and 94% used their closest library. This is compared to eight miles to the nearest bank, yet only 77% use the local bank. Services that changed from 1990 to 2000 in their availability included livestock auctions with an increase from 88% to 91% using the closest source, and the source moving from 20 to 24 miles away. Results indicate that, on average, distances traveled have not changed much. Of course, if the service is no longer available in the community, average distance to the service isn't terribly relevant.

Quality of life is a self-determined measure commonly cited as a reason people choose rural lifestyles. This makes it a valuable measure of satisfaction over time. Figure 1 indicates the percent of respondents that indicated their quality of life has become better in the last five years. The top line is your family's quality of life, and the bottom line is for farm families in general. The opinion that others are doing less well than their own operations is consistent with their perceptions of farm financial conditions. In that regard, 40% of farmers indicated they had a moderate to serious problem, but 77% of the farmers in the area were having a moderate to serious problem. While this is serious, it is more serious that the percent of farmers indicating they were having a serious financial problem has doubled since the 1998 survey.



Copies of the Iowa Farm and Rural Life Poll 2000 Summary are available at your local ISU Extension office or on the web at <http://www.extension.iastate.edu> choose publications, then PM-1857.

Acreage Living is published monthly. For more information, contact your local county ISU Extension office.

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