

common feedlot problems *and* options

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Practical Solutions for Everyday Situations

Many Iowa open feedlots are either constructed or located such that they may cause water quality problems. The current operator may not have been involved in either the location or design decision, but is responsible if problems occur. While concentrated animal feeding operations (CAFO) sized or “permitted” operations have specific regulations that must be followed, non-CAFO feedlots (regardless of size) must follow two basic rules: 1) settle solids from the runoff and 2) do not adversely impact water quality. Another important factor to keep in mind is that regardless of the size of the feedlot, if it discharges directly to a water of the state, or there is a man-made conveyance to the waters of the state, then it can be declared a CAFO and it is required to follow CAFO regulations. Beyond the rules and regulations, most feedlot operators pride themselves on being a good steward of the land, water, and natural resources and if a problem is identified, they will correct it.

It is often beneficial and sometimes required that the producer work with a professional engineer or Natural Resources Conservation Services (NRCS) staff person. Engineers bring skills and ideas, but the producer must also be involved in the decision-making process. In the end, the producer has to pay for and live with whatever is built. This publication identifies a set of problems often seen at feedlots, and discusses a variety of options that producers should consider when finding an effective and economical solution for their operation.

Problem: Too close to the creek or property line

Creekside Feeders is a 900-head feedlot with two pens that border a creek on one side and the road on another. These two pens hold 150 head each with 300 square feet per head and are part of the original farmstead. Four other pens are located on the other side of the farmstead that also hold 150 head at 300 square feet per head. They need to build clean water diversion and solid settling for all the pens, but the two older pens do not have space for solid settling outside the pen. What are some options?

Creekside could build a solid settling structure inside the pen and release the effluent. However, they still do not have a place to go with the settled effluent without a direct discharge into the creek. They need more distance to work with. They need to move the fence or the feedlot up the hill to give them room for a grass treatment area or serpentine channel for the effluent to travel before entering the creek. It is important that the channel not dump directly into the water of the state.

Some options include:

- The recommended space per head is 225-250 square feet per head for an earthen lot. Thus, they could reduce the pen size by 15% or more to gain some distance.
- If they need more space, it may be practical to pave more of the feedlot area and reduce the space per head as tight as 50 square feet per head for total concrete. This will give them even more room between the feedlot and the creek.
- They can reduce the number of cattle in these two pens by adding more cattle to the other pens. This provides more distance below the lot for treatment area, but requires more bunk space

in the other lots and may not match with marketing plans for the operator.

- They can abandon these two pens and replace them with new pens in a better location. It may be possible to move the feedbunks and waterers, or they may convert the lots to another use. For example, a pasture that is less crowded to maintain grass cover and used as a receiving pen for newly arriving cattle. It may be cheaper to build new pens than to fix the problem in the old ones.

Problem: Drainage coming through lot area

Fatherson Feedlot is a 640-head feedlot with eight pens of 80 head each with 250 square feet per head. They need to construct solid settling and have room below the feedlot for the structures and have good distance to surface water. Their problem is water running into their feedlots. In addition to the water from their 12-acre farmstead draining into two of their pens, there are approximately 40 acres of drainage from the neighbor's field that comes through a culvert under the road and into one of their pens. The added water through the pens means that more solids are washed out of the pens.

The recommendation for solid settling structures is to build it to be a minimum of 1/39th of the drainage area. The total feedlot and working area is about 4 acres. It requires a settling basin of approximately 4500 square feet. With the added 52 acres of drainage, if it were to go into a single basin, it would need to be 1.5 acres or nearly 62,500 square feet.

- One solution is to build the settling basin large enough to handle all the runoff.
- Another solution is to keep the clean water clean and only build settling for the feedlot runoff.
- Depending on the topography, it may be possible to divert the farmstead water with a berm above the pens. However, there may need to be a waterway or underground tile to drain it around or under the feedlot. This also applies for roof water. Gutters and downspouts can be used to keep the clean water clean.
- Concerning the water from the neighbors,

it may be easier to abandon the pen it drains through, or reduce its size and construct a waterway to direct the water to the other side of the feedlot. The smaller pen can still be used if it doesn't drain into the waterway. An additional pen may need to be constructed to maintain the overall capacity but the bunks could be moved. Cattle performance will likely be better in a dry pen than one with 40 acres of water running through it.

Problem: Solid settling basin is full and non-functioning

Hilltop Farms constructed solid settling five years ago, but the basin is now full and no longer functioning properly. The basin was designed and built properly, but clean-out was not a priority at the time. The basin is below the feedlot and not easily assessable with equipment and there is no place to go with the manure when the basin is dry enough to clean.

Some solutions include:

- Hire a contractor with proper equipment to clean the basin and apply it when the fields are open.
- Once it is clean, modify the basin so it can be cleaned with equipment the producer has.
- Have concrete in the bottom wide enough for the tractors and loaders that will be cleaning it so it can be cleaned in all weather.
- Maintain the pens and collect the manure before it enters the basin. Pen conditions will be better, cattle cleaner, less dust, and the basin will need to be cleaned less often.
- Cleaning more often may allow the producer to build a smaller less costly settling basin.

There are common problems in Iowa feedlots with many different ways to correct them. The key is to fix the problem with the best solution for the site.

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