

Field and Feedlot



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Denmark Pork Industry

by David Stender, ISU Extension Swine Field Specialist

In late October, eleven Iowa State University Extension Swine specialists and staff from the Iowa Pork Industry Center traveled to Denmark to study the country's pork industry and specifically look at animal welfare issues, impacts of antibiotic growth promotion bans and sow productivity.

Denmark's swine industry is actually the 3rd largest industry in the country. They produce just about the same number of market hogs as Iowa on a land area of about 3/5 the size of Iowa.

Producers are very focused on efficiency and productivity. Many have an efficiency report that is completed for them through their advisory service which is part of a farmer's union. We focused on sow units where producers were concentrating on achieving 30 pigs weaned per sow per year looking for technologies and strategies that seem to be different from practices in the US industry.

The main strategy for increasing productivity was the Danish focus on genetic live born pigs at day 5 after birth. They have focused improvement on born alive with their top herds now averaging over 14 pigs born alive. Top US herds are usually less than 12 pigs born alive.

One of the reasons cited for advanced reproductive performance is said to be a highly skilled motivated labor force. Workers in swine units are trained for two years before they are allowed to work with swine.

Key management approaches emphasized in Denmark swine production systems include:

- Two Step Nurse Sows (Double cross fostering)
- Surprise Breeding
- 5 step AI Breeding

An additional management difference is the weaning age is by law at least 28 days, unless they have a specially approved nursery where they can then wean 21 day old pigs.

Sow breeding is done either in breeding stalls or pen housing setup. By the year 2013, all gestation sow beyond 28 days into their gestation period will need to be housed in pens.

Keeping pigs alive after farrowing is also a key element in the high productivity herds. Notable observations were that the sows and pigs are handled gently with care. The sows were introduced to the farrowing crates 5 to 7 days before farrowing; the environment was set for sow with floor heat and a hoover for piglets; and the general disposition of the sows was calm.

Information regarding Danish pig production was reported at a recent reproductive seminar at Sheldon in NW Iowa. Check with Dave Stender dstender@iastate.edu or Jerry Weiss weissj@iastate.edu.

Beef SIM (Selection Index Module) Program

by Dennis DeWitt, ISU Extension Livestock Field Specialist

The **Beef SIM** program has been designed to assist producers in indexing and sorting beef bulls based on EPD and actual performance data. The Angus, Brangus, Charolais, Gelbvieh, Hereford, Limousin, Maine Anjou, Red Angus, Shorthorn, and Simmental breed associations have provided data regarding current average EPD values and standard deviations to these values for their respective breed. It is up to the user to input the data from the bulls he wishes to compare and apply appropriate weightings for the various traits important to the production system and bull selection procedure in question.

*** Note ***

Females can be indexed and compared **within** their respective breed as well by using this program.

Remember that the index values generated are based on the EPD data and can only be used to compare sires within the same given breed. Within breed EPDs do not allow for

comparisons between breeds. The EPD index generated by this program does allow the user to evaluate sires at one sale and compare them to sires at another sale or A.I. stud since the EPD calculation looks across the entire breed.

The EPD values are calculated one or more times per year depending on the breed. Therefore, you may wish to update these values occasionally. These values may be obtained from a breed association or from the Iowa Beef Center web site (www.iowabeefcenter.org).

Output consists of the index, group rank and then the sorts. All outputs can be printed. Bulls that do not measure up to the desired selection criteria are eliminated. Bulls with missing data are automatically eliminated. If you wish to include these sires in the evaluation, provide the average breed value for the given trait that is missing.

The index uses an entire breed's database, thus index values can be compared from one group of bulls to the next within the breed. A bull with an index value of 100 or above will rank in the top half of bulls for that breed. A bull with an index value of 168 or above will rank in the top quarter for that breed. By changing the emphasis on selection you can change the index value. The index value is not calculated on the actual measured traits listed, only the EPDs. The space for the actual performance traits are provided so the user can set independent culling levels. Therefore, if you decide to set limits on a specific trait, for instance, yearling bull REA (ribeye area) between 14 and 15 square inches, all bulls falling outside of this range will be eliminated from the selection ranking.

- ◆ Beef SIM in creating the indexes also assists in benchmarking the inputted bulls to breed average bulls and bulls that are in the top 25% for all traits included in the index.
- ◆ Beef SIM assists a producer in evaluating a set of bulls using a combined subjective/objective approach.
- ◆ Beef SIM will speed up the performance sorting process and assists in identifying the kind of bulls that best fit the producer's selection criteria.

Computer System Requirements

The *Beef SIM* requires a version of MS (*Microsoft*) Excel or other spreadsheet that is capable of reading a MS Excel 2000 or beyond.

The Beef SIM software can be ordered from the Iowa Beef Center web site (www.iowabeefcenter.org). For further information about selecting your next beef herd sire contact your Iowa Extension Beef Field Specialists Beth Doran at doranb@iastate.edu or Dennis DeWitt at dewitt@iastate.edu

Questions About Open Feedlots

by Beth Ellen Doran, ISU Extension Beef Field Specialist

Beginning April 1st, the Environmental Protection Agency (EPA) plans to visit Iowa feedlot operators to monitor their progress on becoming compliant with state and federal water quality regulations. If you haven't begun to manage the run-off from your feedlot, start immediately! If you are unsure what to do, the questions below may provide help.

What exactly is a water quality violation? A violation of the state water quality standards occurs when run-off leaving your feedlot causes a stream or pond to have a bad odor, color, or leaves a foam or scum on the water surface.

Can the liquid overflow from a solids settling structure really pollute water or kill fish? Absolutely. Ammonia levels of 5-10 mg/l are toxic to fish. Typical levels of ammonia in open feedlot runoff can be more than 70 mg/l. Also, low oxygen levels caused by decaying manure solids in the runoff can kill fish.

What is the absolute minimum required of an open feedlot? Iowa Department of Natural Resources (IDNR) rules require all open feedlots (regardless of size) to remove settleable solids before any liquid is allowed to leave.

How long can water sit in a solids settling structure?

IDNR recommends that solids settling structures be dewatered within 72 hours after precipitation occurs. Ammonia levels increase the longer the water remains in the structure. Solids settling structures should not hold the liquid portion of the runoff for more than 7 days.

How important is clean water diversion? Very important. Less water entering the lot reduces the amount of water that has to be processed, the size of the solids settling structure and the size of the grass filter below the solids settling structure.

How often should solids settling structures be cleaned?

They should be cleaned after every rainstorm and freeze/thaw cycle to prevent build-up of solids and potential run-off. It is ideal to clean the lot while it is dry and before every rainstorm.

What maintenance is needed on the solids settling structure?

Clean out the solids settling structure frequently. Check and clean gates so they are not plugged. Maintain the grade to the structure outlet to avoid pooling of water and manure. If berms are used, check them for erosion.

What type of grass should be planted for the filter strip?

The grasses need to be water tolerant and sod-forming. Tall fescue, reed canary grass and brome (only in drier areas down gradient of the settling structure) are choices.

What kind of maintenance is needed on the grass filter strip? Check these for erosion. Installing riprap below the structure will reduce erosion where the effluent enters the grassed filter. In late summer or early fall during dry conditions, the grass strip can be hayed.

Does a producer with a feedlot of less than 1000 animal unit capacity need to notify or submit design plans to the IDNR before making improvements to the open feedlot? Unless the lot is under a notice of intended action, administrative order or designated as a CAFO by IDNR, there is no need to notify or submit plans to IDNR.

Are there lots with less than 1000 animal unit capacity that have total containment? Yes, if there is a potential to discharge.

What do I do with manure solids that are removed? Manure solids should be land applied at agronomic rates. Separation distances must be maintained from designated areas that are environmentally sensitive.

Can I stockpile manure? Stockpiles should be located where there is control. The key is “high and dry” to keep water from running off and on the stockpiles. There are specific rules about where a stockpile can be placed. Stockpiles must be land applied as soon as possible, but not longer than six months after they are established. Land application rules must be followed.

Who needs a nutrient management plan (NMP)? Feedlot owners need a NMP by Dec. 31, 2006 if the open feedlot has an animal unit capacity of 1000 animal units or more or is required to have a National Pollutant Discharge Elimination System (NPDES) permit.

Are the regulations new? State and federal regulations have regulated open feedlots in Iowa since 1969 and 1972, respectively. These laws have essentially remained the same since 1987.

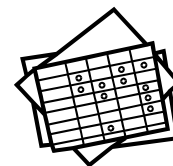
What will the IDNR do if an investigation determines that an open feedlot with less than 1000 animal unit capacity is contributing to a water quality problem? Each case is site specific. The producer must fix the problem and may be required to pay a penalty. In some cases, the producer will need to obtain a NPDES permit, submit a construction permit application and design plan, monitor the system and operate the facility to prevent pollution.

What actions will IDNR/EPA take against CAFO feedlots (1000 or more animal units) that have not achieved compliance with the Iowa Plan for Open Feedlots within the specified five years? IDNR and EPA will begin to inspect these facilities. IDNR’s legal actions will depend upon how pro-active a producer has been.

What are IDNR’s plans for addressing smaller feedlots that registered under the Iowa Plan? IDNR plans to complete all of these site visits within 2006. However, smaller feedlots that do not need a permit don’t have to wait to fix problems on their lot or to bring them into compliance with state regulations.

Why is IDNR GPS’ing the well? Open feedlots built or expanded after March 20, 1996 are required to meet separation distances from public and private wells. IDNR is also updating their database on private and public wells.

Why should I sign the “Statement of Intent?” The Statement of Intent was designed for producers who decided to maintain their lot size below 1000 animal units instead of building the required control systems and getting a NPDES permit. Producers who made this decision and signed the statement should have already reduced their lot size to less than 1000 animal units.



Updated Ag Statistics County Yields for Manure Plans

by Kris Kohl, ISU Extension Ag Engineer

On March 1, USDA updated the Ag Statistic county yields that many livestock producers use for updating Manure Management Plans.

2001-2005 5 year average +10%

County	Corn	Soybeans
Buena Vista	185.1	50.9
Calhoun	184.3	49.8
Carroll	183.5	52.5
Cherokee	186.9	56.7
Clay	177.5	47.9
Crawford	177.3	51.9
Dickinson	174.7	47.3
Emmet	179.3	47.3
Ida	184.9	52.9
Kossuth	184.4	48.5
Lyon	183.4	52.5
Monona	161.6	45.7
O’Brien	184.7	53.8
Osceola	177.0	50.8
Palo Alto	184.5	47.1
Plymouth	180.0	50.4
Pocahontas	187.0	48.7
Sac	85.8	52.0
Sioux	191.1	56.6
Woodbury	170.3	47.5

These numbers can be used to update manure plans prior to manure application and keep in the producers own records.