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Right to Farm Amendments: What We Know and How You Could Be Affected

By: Dr. Patricia Norris and Dr. Laura Cheney[1]

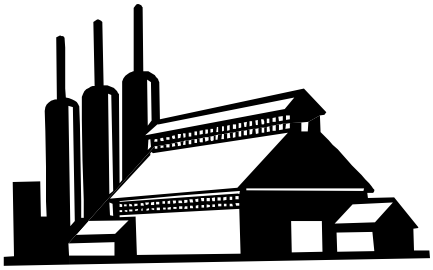
In December 1999, Governor Engler signed Senate Bill 205 into law. This bill, and its enrollment as Public Act (PA) 261 of 1999, was in response to concerns raised by the agricultural community regarding a farmer's ability to expand or change his farming operations due to local zoning ordinances. As a result, PA 261 has meant significant changes to Michigan's Right to Farm Act (RTFA) and to how local governments address agriculture in their zoning ordinance. The purpose of this article is to describe some of these changes and how they might affect your livestock operation. Significant portions of this article have been drawn from MSUE Public Policy Analyses on Public Act 261 and the new Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Production Facilities (*http://www.msue.msu.edu/msue/aoe/landuse/pa261policybrief.pdf* and *http://www.msue.msu.edu/msue/aoe/landuse/Pdfwin32.pdf*).

Michigan's Right to Farm Act and PA 261

Michigan's Right to Farm Act was passed in 1981 with the purposes of protecting farms or farm operations from nuisance suits, providing for the protection of environmental quality, and minimizing negative impacts on surrounding land users. Under the Act, farms or farm operations will not be found to be a public or private nuisance if the farm or farm operations conform to generally accepted agricultural and management practices (GAAMPs). Farmers are not required by law to conform with GAAMPs. However, farmers who choose not to follow GAAMPs do not receive protection from nuisance complaints.

Prior to passage of PA 261, farmers following GAAMPs were immune from nuisance suits, but they were not immune from citations for violations of local ordinances if the standards set out in the ordinance differed from those set out in GAAMPs. This meant, for example, that a local ordinance could require a specific type of manure storage even if GAAMPs did not include that storage technology as a recommendation, and a farm operation that chose to adopt a different technology could be cited for violating the local ordinance. A major thrust of PA 261 was to reduce this type of conflict and provide for a uniform set of standards, throughout Michigan, for responsible agricultural management practices. Consequently, PA 261 changes the RTFA in three main ways:

1. Local governments are prevented from enacting ordinances, regulations or resolutions that extend, revise or conflict with the RTFA or the GAAMPs developed under the RTFA.
2. The RTFA, as amended by PA 261, provides specific procedures and timelines for complaint investigation and resolution. It also provides for some involvement of local governments in the investigation and resolution process.
3. PA 261 requires that GAAMPs be developed for site selection and odor control for new and expanding livestock facilities.



GAAMPs for Site Selection and Odor Control

In June 2000, the Commission of Agriculture, as required by PA 261, adopted new GAAMPs for Site Selection and Odor Control for New and Expanding Livestock Production Facilities. [2] As with all GAAMPs, compliance is still voluntary and the consequence for noncompliance is potential nuisance li-

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abi ity. The new GAAMPs for site selection and odor control

a li

forth criteria for determining an operation can locate or

he new GAAMPs do not impact existing livestock

The portion of

GAAMPs is relatively straightforward and applies to all new

ion facilities with a capacity

125 animals weighing over 55 pound [3]

GAAMPs, a producer proposing a new or expanded operation

develop a manure manage

initiate and apply for MDA site verification and review

T *where*

not as straightforward. In general, the new GAAMPs leave

al unit of government the decision of where, within

This means that townships and counties are still able to esta

lish agriculture zones and determine the location of those

a-

l-

facilities fall into one of three categories, which determines t

acceptability of the site for specific uses.

sites are those that are normally ac-

These sites are located where there are 3 or fewer residences not affiliated with the proposed liv stock facility within ¼ mile of a facility with less than 1000 animal units, and 3 or fewer such res dences within ½ mile of a facility with 1000 ani-

sites are those where site-

factors may limit the environmental, social or economic ac

production facilities and where structural, vegeta-

can be planned and implemented to address those limiting factors. A category 2 site -

20 residences not affiliated with the proposed

operation with fewer than 1000 animal units or

more animal units.

Category 3 p-

tions are not acceptable for new and expanding

o-

nomic or environmental reasons. A category 3

o-

cated within 1/4 mile of the proposed livestock

n-

d cate that a location falls in category 3 include wetlands, flood zones, wellhead protection areas,

nearby high public

use areas and nearby residential zones.

While both Category 1 and Category 2 sites require prepar tion of a site plan and a manure nutrient management plan, MDA verification and review are only required for category 1

th facilities designed for 1000 animal units or more and category 2 sites for facilities with 250 animal units or more.

So What
Expanded Facility?

the first things you will want to do is contact the Michigan De-

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1783. From MDA, you can obtain a *a-*

cility Siting Request Application and Information Checklist. This document is filled out by the producer, submitted to MDA and,

proposed expansion/new facility falls. Based on the category and th

may also lead to verification and review by MDA. In either event, in o

producers will want to initiate the application and follow the GAAMPs.

Extension Specialist and Associate Professor, Department of Agricultural Economics and Resource Development and Extension Specialist and Assistant Professor, Department of Agricultural Economics.

[2]GAAMPs already existed in five other areas: Manure Management and Utilization, Pesticide and Pest Control, Nutrient Utilization, Care of Farm Animals and Cranberry Production.

[3]For nurseries, 1000 pounds live weight is roughly equivalent to one animal unit.

Tips for Sampling Manure

By: Paul Wylie
Allegan County MSU Extension Ag Agent

The process of sampling manure is no different than samples one takes the more representative will be the sample. what is being sampled. How many sub samples is enough? samples is the optimum number. Research on manure - samples gave accurate results, while only 5 sub samples gave - '98 00 was conducted by MSU Extension agents in Southern and 15 dairy farms. Sequential samples taken as deep pits well agitated. They did find a wide range of analysis from "book" values (MWPS 18). Nitrogen values tended to be

Several of the laboratories will furnish sample containers freezer bags

LIQUID MANURE SYSTEMS (manure that can be pumped)

Agitate or mix the storage unit thoroughly. Take a sub sample from each load or every other load (~20) when the pit is about half empty. Use a can or small bucket on a pole to catch a sample from the hose feeding the tank. Place the sub samples in a 5 gallon pail and mix this for your lab sample. Use a quart size plastic container with a screw top. Fill the container about 3/4s full and squeeze out some air before sealing. Freeze the sample right away.

SOLID MANURE SYSTEMS (manure that is handled with a front end loader)

Take your sub samples with a shovel or probe from the stack or from multiple spreader loads. Mix this in a 5 gallon bucket and take about a 2 quart sample. Place this in a gallon size zip lip heavy duty plastic bag. Squeeze the air out, seal and freeze right away.

ALERT: The Post Office or UPS will be very unhappy with you if the manure sample "escapes" while in transit to the lab. Mother will kill you if the sample escapes in her freezer. Double bag either type of sample container in a gallon size zip lip heavy duty plastic bag for your safety. Ship the frozen sample early in the week in a cardboard box with packing around the sample. Place the form and the check in another zip lip bag.

Manure Testing Laboratories

Manure is an asset, not a liability. It is a source of plant nutrients, increases the soil's water holding capacity, and improves soil tilth. Developing a plan to properly manage the time, form and placement of manure ensures that it will be used to its full economic advantage, while protecting our water resources.

A very important component of any manure management plan is the laboratory analysis of the manure. The purpose of the analysis is to determine the nutrient content of the manure. At a minimum, a manure analysis should determine the levels of nitrogen (Total Kjeldahl Nitrogen), phosphorus, potassium and moisture content. An optional test for ammonium nitrogen (NH4-N) would help assess the readily available N more exactly. This test adds about $10 to the total test amount. More detailed analysis including pH, sulfur and micronutrients are available, but probably not useful in most cases.

Listed below some laboratories that perform manure analysis. This is not an all-inclusive list. This list should not be interpreted as an endorsement by Michigan State University Extension to the exclusion of other labs. This list is simply meant to be a starting point for producers looking for labs to use for manure analysis. Prices for a basic analysis range from $20.00 to $35.00. Testing for nutrients not in the basic analysis package are additional costs.

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(Manure Testing Laboratories Continued)

University of Wisconsin
Extension (UWEX)
Soil & Forage Analysis Lab
8396 Yellowstone Dr.
Marshfield, WI 54449
(715) 387-2523
Basic test is $25.00, add $10.50 for NH4-N.
Will send shipping containers on request.

A & L Great Lakes
Laboratories Inc.
3505 Conestoga Dr.
Fort Wayne, IN 46808-4413
(219) 483-4759
Basic test is $25.00, add $10 for NH4-N.
Will send shipping containers $1.00 each for 5 or more containers.
3 day turnaround

Litchfield Analytical Services
P.O. Box 457
535 Marshall St.
Litchfield, MI 49252
(517) 542-2915
Basic test is $25.00, add $10 for NH4-N.
Will send shipping containers on request.
5 day turnaround

Holmes Laboratory Inc
3559 U.S. Rt. 62
Millersburg, OH 44654
(800) 344-1101
Basic test is $35.00, includes pH.
Shipping containers?
2 day turnaround

Manure Area of Expertise Team Mission Statement

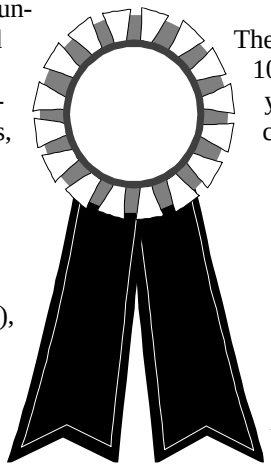
The Michigan State University Manure Area of Expertise Team is a multidisciplinary team providing education and research direction in manure management for citizens of Michigan.

We provide relevant, unbiased, science-based information to increase knowledge and understanding to advance responsible economically and environmentally sustainable use of manure in biological systems.

Michigan Swine Youth Challenge 2001

The MSYC will go another year due to donations by the show pig producers around the state and a possible grant. The first year was a giant success and all youth gained a better understanding of their project and met new youth around the state. The Michigan Swine Youth Challenge is a recognition program for swine exhibitors that have excellence in showing, poster design, knowledge quizzes, swine judging, pig placing, and carcass contests. All these areas are offered at the four events that will be sanctioned for points to be calculated.

The events are Green & White (January 27), Spartan Classic (June 23), Michigan State Fair (August 21-23), and your Local County Fair (June-September). New to 2001, is the option of counting the Green & White or the Michigan State Fair will be a new option this year to make the program more user friendly for fall sports participants and school starting. The ages for eligibility are 9-21. Concessions have been made to accommodate potential participants in the MSYC that are not eligible at the county fair. The points are calculated throughout the show year and the "Top 20" in the state will be announced in October. Top prizes may include a year's use of an Alum-Line, Inc. "Popper" pig transport box, aluminum show boxes, clippers, bags, hats, etc.



The sign up will be a $10 registration fee payable before 10AM on June 23, 2000 at the Spartan Classic earning you membership to the Michigan Swine Youth Association. The MSYC Coordinators are:

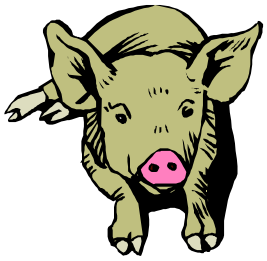
Brian & Donna Hines
1123 E Chicago,
Quincy, MI 49082.
(517) 639-3336,

Or by E-mail:
hinesdb@cbpu.com.

We are accepting dues now until 10AM, June 23. Sign up early by calling for a registration brochure. All county extension offices will receive information by January 1st or call for more information by talking to your local MSU Swine Agent.

Heterosis: A Forgotten Subject?

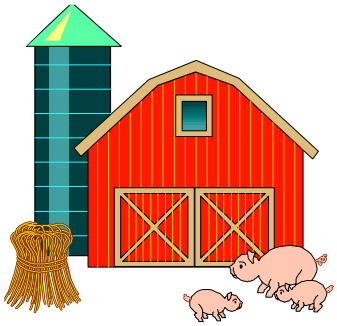
By: Dr. Ronald Bates
State Swine Specialist, Michigan State University



$_1$ female is a very good parent female and should exhibit desirable sow performance and does benefit from maximum heterosis, since its sire and dam would be of different breed ancestry. This female could be mated to a variety of terminal boars and the resulting progeny should excel for postweaning performance and carcass merit. However, it is not unusual to have this female mated to a "White Terminal" boar. These "White Terminal" boars are often the product of crossing a traditional terminal breed (e.g. Hampshire, Duroc, Pietrain, etc) to either Yorkshires or Landrace that may excel for postweaning performance. However, since both the "White Terminal" boar and the Yorkshire-Landrace F_1 female, have some breed ancestry in common, heterosis is reduced.

It is true that the sow is an F_1 and her performance will benefit from heterosis. The boar would also be an F_1 and his performance will benefit from heterosis. However, the resulting progeny are a backcross and they will not benefit from heterosis as much as their parents. Reductions in performance would occur for survival rate, growth rate and feed efficiency. In addition, less uniformity would be expected.

The second item regarding heterosis mismanagement occurs when a breeding system is micromanaged in an effort to overcome some perceived shortcoming of either market progeny or the parent sow. For example, "white on white" sows have often been labeled to be have less longevity than a parent female with "color". In other words, females similar to a Yorkshire-Landrace F_1 are perceived to be less durable than perhaps a female is ¼ "color" (e.g. Duroc or Hampshire) and the other ¾ is made up of Landrace and Yorkshire. It is true than when housing sows in groups these "white on white females" are often not be as durable. However, housing in gestation stalls, or improved selection criteria for feet and leg soundness along with improved nutritional protocols will often reduce the advantage of the female that has "color" in her breed ancestry.



These "color" females can be used effectively; however, it is imperative that the terminal boar is chosen correctly. For example if a ¼ Hampshire sow is used as a parent female, the terminal boar should contain no Hampshire at all. If it does the resulting slaughter pigs will be a backcross and have reduced performance as discussed earlier.

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Another heterosis mishap can occur in an effort to improve market pig performance for a subset of characteristics.

(Comparison...continued from page 5)

Typically this transpires in an attempt to improve meat quality. For example, females that contain a portion of Duroc ancestry may be mated to Duroc boars to produce progeny with very desirable meat quality. However, this is just yet another backcross and will suffer from the aforementioned shortcomings. In fact within this scenario, it is not unusual to find females that are one-half Duroc mated to Duroc boars. These pigs will be ¾ Duroc. It is true that the progeny from this mating should have desirable meat quality. However, their growth, feed efficiency and carcass merit will approach the purebred average and profit potential reduced. Unless these pigs are sold within a value added pork chain and rewarded accordingly for meat quality, these types of mating combinations should be avoided.

Commercial breeding schemes should be managed in an effort to take advantage of all possible heterosis. This occurs when the breed ancestry of the parent female is completely different from that of the terminal boar. Any other breeding scheme should be avoided unless the performance shortcomings are well quantified and opportunity exists to make up these performance losses with premiums or enhancements.

By: Brian Hines

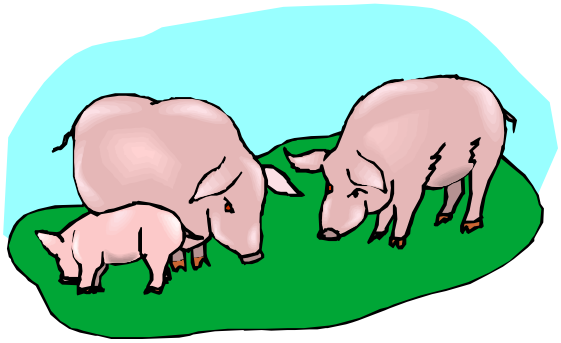
ater is so common we seldom think essential and cheapest nutrient. Deprivation of water reduces feed consumption, limits impact on lactating sows. Water affects many physiological functions like temperature metabolic processes, and milk production. The requirements needed by swine are much as 80% of body weight at birth and declines to 50% in a finished market hog. Water requirement has a relationship to swine will consume 2 to 5 quarts of water pound of dry feed or 7 to 20 quarts of water per 100 pounds of body weight -fed hogs will consume one

Recent research has shown that water flow rate will have little spent at drinkers for poor flow and additional wastage at high recommendations are as follows:

Hot nursery phase:	1 cup/minute
	2 cups/minute
125 Lbs. to Market	1 quart/minute
Sows/Boars:	1 quart/minute

Quality of drinking water can have a direct effect on animal ls most commonly found in ground and surface waters are sulfates, chlorides, bicarbonates, and alcium, magnesium, or sodium. The combined concentrations of these minerals are f special concern because of their laxative effects. Some negative increased water consumption, decreased food intake. A research project at 3000 ppm showed scours but statistically as not effected. The other concern is nitrites that impair the oxygen carrying capacity of the blood. t approximately 100 ppm nitrate nitrogen is generally safe. However, 300 ppm nitrate nitrogen l dissolved solids count may lower the toxicity levels of sulfates and nitrates. m safe level of total dissolved solids in drinking water without the well and flow rates need to be checked on an annual basis.

y;R.



What's With My WEI?

By Dr. Tim Safranski
State Swine Breeding Specialist, University of Missouri - Columbia

Productivity on Missouri sow farms has been good so far in 2000. If there has been a common complaint for reproduction it has been over a perceived prolonged wean-to-estrus interval (WEI). For most farms at least 85% of sows should have expressed estrus by day seven post- weaning. Several factors contribute to variation in WEI, and some of them are easily controlled.

It will be important to keep in mind the complex metabolic and physiological processes going on within the sow. Her primary function once the piglets are born is to provide milk to support growth of those piglets. For long term success she must be able to do so without compromising her ability to begin cycling once the suckling induced inhibition of estrus is eliminated (i.e. at weaning). The best way for this to occur is for the sow to remain in a positive energy balance, or as close as possible to that. We know that sows lose fat during lactation, and this has been considered normal and acceptable. It is only relatively recently, however, that we have come to understand how muscle can also be lost. The use of real-time ultrasound measures of loin eye area pre-farrowing and post-weaning has made that point clearer. It is more efficient to get sows to convert feed to milk rather than convert fat and muscle to milk. Lactation feed intake is critical, and failure of feeding programs has become more evident with shorter lactation lengths and higher expectations of the sow.

The parity of a sow will affect her WEI. This is most evident in the prolonged WEI observed in parity one (P1) sows relative to older sows. This can largely be related back to nutrient intake and requirements. Older sows are eating for maintenance and milk production, while P1 sows must eat for maintenance, milk production and growth. Failure to account for this difference will result in more P1 sows in a deeper catabolic state, and thus a prolonged WEI. Multiple lactation rations are not practical on most farms, but it is possible to top-dress a protein source to P1 sows and thus provide a more nutrient dense ration. Soybean meal and fishmeal are common sources. Some nutritionists prefer fishmeal because of its greater palatability. Another management technique is to account for parity when cross-fostering. We discuss cross-fostering to produce more uniform litters, but more uniform pigs and shortened P1 WEI may result if slightly smaller litters nurse P1 sows. Parity distribution must be considered when evaluating herd WEI.

The litter size weaned can dramatically impact WEI. It is often said that long WEI results from nursing either very large or very small litters. Very large litters demand more milk, and thus place a greater demand on the metabolic system of the sow. A greater proportion of sows with large litters, therefore, will be more catabolic, they will be using fat and muscle to make milk. The situation with small litters is essentially the opposite. There is less demand on the sow so she can attain an anabolic state during lactation. With a small litter the suckling induced inhibition of estrus may not be strong enough to prevent a preweaning heat. A long WEI is observed because the sow's first post-farrowing estrus occurred in the farrowing crate rather than post-weaning.

Length of lactation is another primary variable affecting WEI. Increasing lactation length tends to shorten the WEI over common lactation lengths today. Current weaning ages are well below what sows would naturally wean at. A sow has gone through 114 days of gestation and several days or weeks of lactation, and her system needs to reprogram itself to begin cycling again. This involves physical and physiological events. A key factor to consider is that the lactation length and feeding level may inter-

(Continued on page 8)

All comments and suggestions should be directed to:

MICHIGAN STATE UNIVERSITY EXTENSION

1. Jerry May, North Central Swine Agent
Farm Records, Production Systems
(517) 875-5233

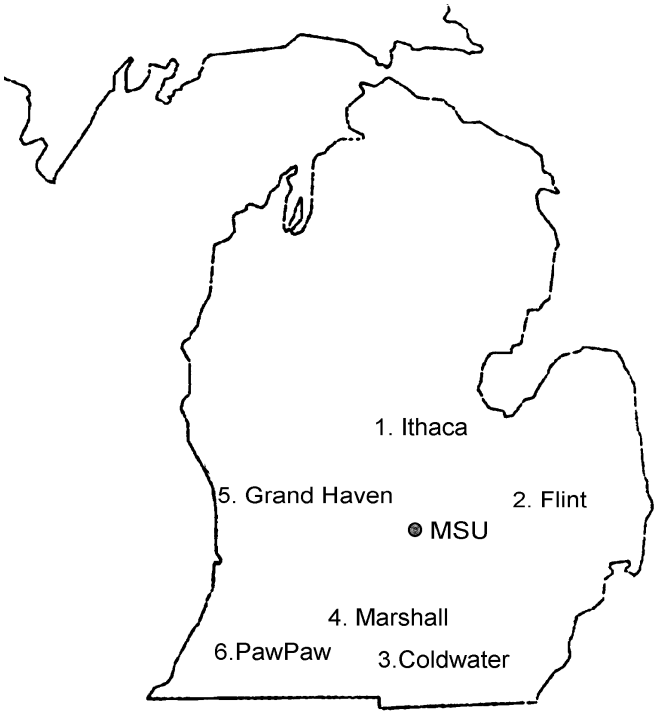
2. Joe Kelpinski, Northeast Swine Agent
Environmental Mgt., Finishing Mgt.
(810) 244-8517

3. Brian Hines, South Central Swine Agent
Genetic Evaluation, AI, Facilities
(517) 279-4311

4. Roger Betz, Southwest District Farm Mgt.
Finance, Cash Flow, Business Analysis
(616) 781-0784

5. Tim Johnson, West Central Swine Agent
Production Records, Software, Confinement
(616) 846-8250

6. Southwest Swine Agent
Nutrition, Nursery Management, AI and Boar collection
(616) 445-8661



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act. Many of our old strategies for feeding sows in farrowing involved slowly ramping up feed intake over several days. With many of our conventional weaning ages these old feeding systems do not allow the sow enough time on full feed. That takes us back to the anabolic/catabolic discussion.

Less dramatic factors affecting WEI include season, boar exposure and post-weaning feeding. Seasonal infertility can include a prolonged WEI. Providing a comfortable farrowing house environment, and the effects of doing so on metabolism and feed intake, may be the best thing we can do to minimize this effect. Most producers are familiar with the ability of boar exposure to induce puberty in gilts. Very few producers, however, recognize or utilize this effect to hasten post-weaning estrus in weaned sows, even though it has been shown to be effective to varying degrees. It may be argued that the time required to provide the boar exposure is greater than the benefit derived from reduced WEI. The opposite may also be argued. Regarding post-weaning feeding, allowing ad libitum feed intake, especially of lactation feed, from weaning to estrus can also reduce the WEI. The degree of this effect depends on all the other factors affecting WEI and their intereactions. For example, a sow that has gone deeply catabolic will show a greater benefit of increased post-weaning feed intake than a sow already in an anabolic state.

What does all this mean? Producers must recognize the impact of management on performance. Treat P1 sows with special care in nutrient intake and suckling intensity. Recognize the impact that season and facilities can have. Be willing to change one aspect (e.g. lactation feeding) to account for other changes (e.g. shortened lactation length). At weaning we typically move the sow to a new location with its sounds, sights and temperatures, take away her piglets, change the amount and type of feed provided, and expect her to show heat within seven days. It is our responsibility to give her the best chance of doing so.