

**LESSONS FROM MICHIGAN:  
STRATEGIES FOR REGULATING INTENSIVE LIVESTOCK OPERATIONS-  
RIGHT TO FARM AND THE ROLE OF THE STATE**

by

**Wayne Caldwell, Ph.D., MCIP, RPP,  
Jennifer Ball, M.Sc. &  
Melanie Williams, B.A.**

Caldwell is Associate Professor in Rural Planning and Development, University of Guelph,  
and Senior Planner, Huron County  
Ball is a PhD Candidate in Rural Studies at the University of Guelph and Planner, Huron County  
Williams is a M.Sc. candidate in Rural Planning at the University of Guelph

The authors may be reached at the University of Guelph, Rural Planning and Development,  
School of Environmental Design and Rural Development, Guelph, Ontario, N1G 2W1  
Related materials may be found at [www.waynecaldwell.ca](http://www.waynecaldwell.ca)

This paper was presented at the National Conference:  
“Integrated Solutions to Manure Management”  
London, Ontario, Canada  
September, 2002

*The opinions expressed within this paper are those of the authors and do not necessarily  
represent those of the University of Guelph or the County of Huron.*

© W. J. Caldwell, J. Ball and Melanie Williams

**LESSONS FROM MICHIGAN:  
STRATEGIES FOR REGULATING INTENSIVE LIVESTOCK FACILITIES -  
RIGHT TO FARM AND THE ROLE OF THE STATE**

Concerns associated with livestock production have contributed to conflict in communities across rural North America (Grey, 2000; Caldwell, 2001). Real and perceived environmental, social, and economic issues related to the intensification of livestock production have led governments at the municipal, provincial/state and federal level to respond (Edelman et.al., 1998; Henderson, 1998; Caldwell and Toombs, 1999). In the United States large scale livestock operations tend to be referred to as CAFO's (Confined Animal Feeding Operation's) and in Canada they are known by a variety of names including Intensive Livestock Operations (ILO's) or Confined Feeding Operations (CFO's). The debate associated with the establishment of these facilities has led to an equal amount of debate concerning the nature of government response.

From an environmental perspective the focus of attention has been on issues related to odour and water quality. In many jurisdictions including Ontario, Alberta and Manitoba municipalities have attempted to regulate the industry through a variety of strategies including nutrient management plans, conditional use permits (including public meetings), restrictive zoning, and caps limiting the size of these facilities (Caldwell and Toombs, 1999). In some respects, however, municipal involvement has led to what has been referred to as a "patchwork quilt" of differing regulations across the province or state. Moreover, municipalities have often been challenged by issues of enforcement, fairness and local politics. The result is that issues have often been lost in the ferocity of

the local debate. Sometimes legitimate environmental issues have not received appropriate attention and sometimes legitimate proposals for new and expanding livestock barns have been inappropriately curtailed. In response, a number of states and provinces have asserted their authority to deal with this issue by introducing or amending legislation - in Alberta, the Agricultural Operations Protection Act was amended on January 1, 2002; in Ontario, the Nutrient Management Act was adopted in June, 2002 and in Michigan, the Right to Farm Act was amended in 1999. The one thing that all of this legislation holds in common is that it significantly curtails the opportunities for municipalities to regulate an expanding livestock industry. This paper focuses on one of the approaches- the use of Right to Farm in Michigan.

### **Context- Livestock Intensification in the United States and Michigan**

In a 1998 study conducted by the Animal Confinement Policy National Task Force (Edelman, et.al.) it was observed that of 48 survey responses, 38 states indicated that Confined Animal Feeding Operations (CAFOs) are controversial. Moreover, in 22 states new legislation was proposed in 1997, court action involving CAFO's had occurred in 19 states and in 16 states local jurisdictions had passed new ordinances or policies. In ranking which species were the most controversial swine were selected in 27 states, dairy cattle in 10, hens and pullets in 3 and chicken broilers in 2. Beef cattle and turkeys were not viewed as the most controversial species in any state and in 5 states no livestock species were considered controversial.

Within Michigan, agriculture and livestock production has continued to intensify with significant local opposition to livestock production occurring across the state. In

1998, swine were identified as the species causing the greatest concern (Edelman, et.al., 1998). The concern over hog production in Michigan has, however, existed for a number of years and has resulted in a number of local protests and nuisance suits (DeLind, 1995). More recently, growth in the dairy sector has also created considerable local controversy (Linderman, 2002). This intensification of the agricultural industry comes at a time when Michigan is seeing an increase in its total population. Comprised of approximately 10 million people living in 83 counties, Michigan is the eighth most populated state in the U.S. (Government of Michigan, 2002). This demographic change is creating a platform for agricultural conflict. Michigan has had to take measures to regulate the agricultural industry to ensure the livelihood of the industry in the state and mediate agricultural based conflicts. A key component of Michigan's approach is Right to Farm.

#### **HISTORY OF THE RIGHT-TO-FARM LEGISLATION**

Right to Farm has been used for a number of years throughout the United States and Canada as a means to protect farmers from nuisance suits and complaints if the farmer uses standard farming practices that do not violate provincial/state or federal laws (Lapping et.al., 1983 and Daniels, 1999).

In 1981, Michigan implemented its first Right-to-Farm Act to protect farm operators from nuisance based complaints in relation to normal farm practices. Under this Act, GAAMPs (Generally Accepted Agricultural and Management Practices) were developed, creating a voluntary platform where any farm operator who followed the GAAMPs was protected by the state from nuisance complaints and lawsuits.

Prior to 1999 local government was able to maintain local control over zoning and requirements for the siting of all agricultural based operations. A local government power reflective of Michigan's 'home rule state' designation.

In the 1990's, Michigan's food and agricultural industry grew to almost \$40 billion in annual sales, making agricultural one of the prime economic sectors in the State. With this economic growth came a corresponding growth in the size and structure of the agricultural industry itself. Farm numbers began to decrease and fewer farmers began to produce an every increasing amount of Michigan's agricultural commodities. However, Michigan's agricultural land base was also affected as non-farm rural development encroached on prime agricultural land. This forced operators to produce more on a diminishing land base and placed expanding operations closer to neighbours.

Local government, in an attempt to maintain control over the changing dynamics of agriculture, began to implement individual, locally based ordinances to guide the agricultural industry (Norris, 1999). This approach led to a diversity of agricultural land use planning based on established or changing identified zones for animal agriculture and separation distance requirements for agricultural land. Individual local governments in certain areas sought to regulate the intensification of the agricultural industry by establishing size thresholds based on the number of animal units permitted per site, acreage requirements, separation distances based on the farms forecasted production of odour and comprehensive manure management plans. In some jurisdictions, ordinances were passed by local government restricting permits for operations that they deemed as intensive within their boundaries.

This patchwork approach to agricultural based planning became a source of conflict for farm operators, local government and the rural residents.

Operators were met with a continuum of restraints that changed from area to area. In some cases, moratoriums were placed on development, limiting their ability to site and expand. Operators felt that the outcome of these ordinances impacted their ability to economically compete with other farmers in Michigan and globally.

Local government was met with conflict from two directions. On one side was the agricultural stakeholders who felt constrained by the ordinances and on the other, the rural stakeholders who felt that the issue of agricultural intensification in their community was not being adequately addressed or dealt with.

For the local community, the issue of agricultural expansion became one based on social, economic and environmental concerns. People objected to the changing production style of agriculture as farms moved away from the perceived traditional family farm to what are perceived as highly mechanized ‘corporate’ farms. Rural residents called on their local government to bring in regulations that would address their concerns about water quality, odour and impacts to their property values and overall well-being (Norris & Batie, 2000).

With these concerns and issues integrated into each other, local government was faced with the difficulty of having to pass new ordinances that would continue to encompass all of their constituents’ needs and demands. The inconsistencies in the planning approach across the state became increasingly apparent. It became challenging to “adequately address public concern while recognizing the role of animal production in

the agricultural sector,” (Norris & Batie, 2000, p. 7). This controversy led the state to step in.

### **THE AMENDED RIGHT-TO-FARM ACT**

In 1999, the state pre-empted the local right to implement siting ordinances based on animal agriculture by amending Michigan’s Right-to-Farm Act. Only the animal industry was targeted at this time as livestock production was deemed as having the greatest impact in the public image versus practices involved with crop production (Wilford, 2002).

Through this amendment, in March 2000 the Michigan Department of Agriculture (MDA) took control over the local authority to create zoning ordinances, site criteria and approvals in relation to all operations including those defined as *confined animal feeding operations (CAFO’s)*,<sup>1</sup> by adopting a new section within its pre-standing GAAMPs. The new “GAAMPs for Site Selection and Odour Control for New and Expanding Livestock Production Facilities” provide environmental, social and economic criteria that must be addressed by the state and voluntarily by farm operators to alleviate concerns and conflict about the changing agricultural industry.

The objectives of the new siting GAAMPs are three fold. In order to achieve agricultural sustainability and address agricultural related conflict, the MDA seeks to approach the issues of: 1) Environmental protection, 2) Social considerations (neighbour relations) and 3) Economic viability of the industry (MDA, 2001, p.1). It is the prediction of the MDA that the state control of siting, through the direction and objectives of the

---

<sup>1</sup>Michigan's GAAMPs apply to operations that have 50 animal units or more. A CAFO is defined as an operation with greater than 1000 animal units. These animal units are based on criteria such as animal weight and amount of manure produced.

new GAAMPs for site selection and odour, will alleviate conflict concerning land use planning around all agricultural operations but particularly CAFO's.

### **NEW ROLE OF LOCAL GOVERNMENT UNDER GAAMPs**

As stated, the new siting GAAMPs have given the state authority in what was traditionally a local level governance issue. This is a decision that crosses the State's home rule designation and is, itself, a source of conflict between the two levels of government (Michigan, 2002). Within a home rule state, local government is given the authority to meet state and federal level legislation and pass local ordinances that can be more rigid than that conveyed at a higher governmental level. The new GAAMPs crossed this designation as it pre-empted local government's power to enforce ordinances that existed prior to the amendment in relation to CAFO's as well as the ability to place additional ordinances to the amendment. However, the ability and opportunity does still exist for local level planning and ordinances in relation to agricultural practices.

Local government still holds authority over operations that fall under the 50 animal unit threshold and may pass agricultural ordinances in relation to these operations as deemed necessary. As well, Master Plans (comparable to Ontario's Official Plan) can create a defensible plan based on zoning which can be used as a recommendation guideline for state officials when reviewing applications that fall under the siting GAAMPs (Brummel, 2002).

### **GAAMPs FOR SITE SELECTION AND ODOUR CONTROL FOR NEW AND EXPANDING LIVESTOCK PRODUCTION FACILITIES**



The new GAAMPs for site selection and odour control for new and expanding livestock production facilities are heavily based on the notion of a good neighbour policy. The goal is to create a production area for the farm operation that is respectful of the environment, respectful of the neighbouring landowners, and respectful of the operator's right to an economically viable future. To clarify, the new siting GAAMPs incorporate any operation with greater than 50 animal units. For the purpose of this paper, operations with 1000 animal units or greater will be the main focus when exploring the next three objectives.

### ***Environmental Protection***

In today's modern age, more and more people are becoming environmentally aware of the world around them and the impacts that their and other's actions have on their social and physical well being. "A wealthier, more educated population is focusing more and more attention on how their quality of life is affected by their physical environment," (Norris & Batie, 2000, p. 2). Professors Patricia Norris and Sandra Batie from Michigan State University believe that with this high level of environmental awareness comes a lower tolerance for reductions in environmental quality - reductions that might at one time have been acceptable or overlooked in relation to the agricultural industry. The professors believe that this tolerance for environmental degradation in any form will continue to decrease as rural, non-farm development increases in its current trend. "With more and more rural landowners who aren't involved in agriculture, the presumed rights of agricultural producers to create externalities (i.e. to pollute) are being called into question," (Ibid, p. 3).

The most commonly reported complaint concerning the negative environmental impact of an intensive operation is the issue related to water quality and the risk of non-point source contamination. Therefore, the issue has become a primary target in the siting GAAMPs, in order to resolve water quality issues before they have the opportunity to evolve. Environmental factors that have been incorporated into the siting GAAMPs are as such:

- Preserving water quality by selecting a site where the potential risk for surface or ground water pollution is minimized (based on soil type, topography, hydrology, etc.).
- Areas such as wetlands, flood plains and wellhead protection zones have been deemed as not appropriate up front and no applications will be accepted in these zones, no matter what technology is utilized.
- The promotion of on-site technologies to minimize the possible environmental degradation to meet site criteria.

### *Social Consideration*

As stated previously, there has been a change in the rural demography of the countryside as a flux of rural development has pitted agricultural producers next to non-farm rural residents - residents who often have been removed from an agricultural connection for generations. This creates an arena for conflict, as the countryside often does not reflect the rural ideal of residents. For example, picturesque red, wood planked barns are replaced with mechanized operations that can be seen as obtrusive to the eye and a scar on the landscape. The siting and odour GAAMPs reflect a degree of social consideration as it aims to alleviate the social concerns about the changing rural ideal that creates the agricultural based conflict. The predominant method incorporates odour management.

The goal of odour control within the siting and odour GAAMPs is to reduce “the frequency, intensity, duration and offensiveness of odors that neighbours might experience,” in order to reduce the potential for a social based land use conflict (MDA, 2001, p.3). At the time of siting or expansion, the ‘Michigan Odour Print,’ based upon the ‘Minnesota Odor Estimator Model,’ is used to identify the odour impact that the operation may have on adjacent non-farm residents. The odour print is an index based upon a plot system which represents approximate distances that a person must be from a source of odour to detect a noticeable or stronger odour up to 5% of the time for 16 directions. Daily and additional weather changes, such as wind, are factored into the index (Person, 2000). The operation must have a minimum odour index to be permitted to site. This index is also used in conjunction with technology.

The utilization of technology is incorporated into the odour management requirements allowing for the odour impact to be further reduced to meet site criteria. This technology incorporates changes to manure storage units, manure application systems, use of manure additives, etc.

Other methods for decreasing the social impact of odour produced by the expansion or siting of an intensive operation includes the use of setbacks. Setbacks are used to minimize the potential effects of the operation in high density, based on residential zoning, population or areas of high public use such as schools, churches, etc.

It must be acknowledged that issues concerning manure management and utilization are implemented within a separate GAAMP for manure handling. The manure impact outlined here is based on its relation to odour production. The manure based

GAAMPs include implementing new practices around technology, manure storage systems, manure handling and ventilation.

### ***Economic Viability***

Though the MDA states that maintaining the economic viability of an operation in a selected location is an objective of the siting GAAMPs, there is limited discussion available on this objective. The economic viability of an operation is dependent on a placement that is distanced from non-farm residents, which will allow for contiguous parcels of land for production and has land available for future expansion. As well, a parcel of land or expansion ability that requires low input cost to qualify the development, (i.e. reduce the need to implement technology to meet site criteria), will influence the financial ability to select and develop at a site today and in the future.

### **RIGHT TO FARM & LEGAL PROTECTION AND PROSECUTION**

Conformance with the siting and odour GAAMPs, as well as the pre-existing GAAMPs designated under the Right-to-Farm Act, deems a producer as complying with normal farm practices. As stated in the Right-to-Farm Legislation prior to and continuing into the 2000 amendment, this compliance gives operators protection from nuisance complaints and lawsuits. However, compliance is optional and any operator found acting outside of the GAAMPs is subject to prosecution by the state and public until the operation is brought into compliance.

Currently, the MDA conducts site inspections through Right-to-Farm officials and MDA field agents. Each request brought to the 's attention is responded to immediately, within a business week. Upon an on-site inspection, if the request is evident of an infraction outside of GAAMPs, such as with an environmental or Clean Water Act infraction, the request will be designated to proper environmental and MDA authorities.

Under the Right-to-Farm Legislation, any party has the authority to request a review of a farm operation. As stated, operators acting outside of compliance to GAAMPs can be held accountable to the notifying party and must be brought back into compliance in order to receive protection. However, any party found issuing requests more than three times per operation, with no evidence of an operation infraction upon review by agents, can be charged for the costs of the reviews.

### **MICHIGAN AGRICULTURE ENVIRONMENTAL ASSURANCE PROGRAM**

In 1998, Michigan adopted the Michigan Agriculture Environmental Assurance Program (MAEAP). Created out of the Michigan Agricultural Pollution Prevention Strategy, MAEAP is a proactive voluntary program that works hand-in-hand with the MDA's Right-to-Farm GAAMPs. MAEAP's goal is to educate operators of all sizes of operations to implement economical, effective and environmentally sound pollution prevention practices. Compliance with MAEAP indicates that a producer's livestock system operation meets or exceeds state and federal requirements and that all sources of potential agricultural pollution related to the livestock system have been addressed (Wilford, 2002).

The MAEAP program takes a three-part approach to reviewing an operation in order to account for possible environmental degradation in system areas of crops, livestock and risks around the farmstead. A main component of the analysis of the three systems calls for an accountable, comprehensive nutrient management plan in order to prevent environmental pollution through discharges. Education, on-farm assessments and verification of compliance are steps that are utilized by MAEAP officials to ensure that agricultural based environmental risks are properly assessed and addressed.

The MAEAP program has seen much success within the greater community. Compliance has benefited the public with on-farm environmental accountability and has benefited farm operators financially. Compliance under MAEAP has led to financial

incentives from insurance companies as well as farm assistance programs to provide cost-share funds to make necessary changes.

### **MAEAP & GENERAL PERMITS**

In January 2002, the MAEAP program was given a vote of confidence from the federal Environmental Protection Agency (EPA) when the EPA made changes to its agricultural permitting for Michigan. Throughout the United States, producers must operate through a permit as issued under the federal Clean Water Act. This is required of all industries. The EPA's vote of confidence came when it decided to relinquish authority for CAFO permitting to the Michigan Department of Environmental Quality (DEQ) and to MAEAP. This has given MAEAP "opportunity to demonstrate that we can assure environmentally sound farming operations," (MAEAP, 2002).

Under this change, permitting for CAFO's will be shared between the DEQ and MAEAP. The DEQ will be responsible for issuing permits to CAFO's that have had a verified environmental discharge. However, CAFO operators who have not had a discharge can gain their permit and coverage through compliance with the MAEAP program. Due to its rigorous environmental assessments, inspections and required comprehensive nutrient management plans, MAEAP was seen by the EPA as an "exemplary voluntary program" to allow for certification of environmental compliance in relation to permitting. This change made by the EPA is seen as a "fair and comprehensive approach to addressing environmental concerns on livestock farms," in Michigan (MAEAP, 2002).

## **PUTTING IT ALL TOGETHER**

Now that the Right to Farm, GAAMPs and MAEAP have been introduced, it is imperative to see how these programs and legislation work together in relation to the regulation of intensive livestock operations. An example of the process that an operator of a CAFO would follow to expand their operation in Michigan is outlined below:

Farm operators Stan and Deborah Holstein have decided to expand their dairy operation to a full 2000 animal unit (AU) capacity. During their last expansion, the Holsteins were required to apply for building and siting permits at their local planning office. At the time, the Township had an ordinance restricting the number of animal units permitted per farm site to 1000 AU. This restricted the Holsteins ability to expand to the capacity that they desired.

Today, as the Holsteins operation has reached the 1000 AU capacity, their operation is classified as a CAFO and exceeds the maximum number of AU's required to meet local level agricultural planning and ordinances. Thus, the Holsteins are applying to the Michigan Department of Agriculture (MDA) to have their expansion site plan reviewed under the state's Right-to-Farm Act using the Generally Accepted Agricultural Management Practices (GAAMPs) for 'Site Selection and Odour Control for New and Expanding Livestock Production Facilities'.

The MDA receives the Holsteins application and notifies the Holsteins Township that a plan has been submitted and is under review. The MDA performs on-site inspections of the proposed expansion site to verify site compliance with pre-standing GAAMPs and an assessment concerning environmental risks. Though the MDA only needs to consider the recommendations of the Township's Master Plan, the MDA confers with the Plan to help determine applicability to standing land uses and availability of

adjacent agricultural land. The Master Plan indicates that the farm expansion will be in an agricultural zone and the site will not be adjacent to a residential or commercial development. An odour print index assessment is conducted of the surrounding area. A satisfactory odour index indicates that any odour would be apparent to neighbours less than 5% of the time. Upon completion of the review, the MDA acknowledges that all economic, environmental and social issues are properly addressed by the operator under the siting and odour GAAMPs. The Holsteins site plan and application for expansion has been accepted. The Township is notified of the MDA's decision.

During the period of the MDA review, the Township approaches the Holsteins and asks if a public forum can also be held. This forum is above the requirements of the siting and odour GAAMPs and the operators are not obligated to comply with the request. However, the Holsteins voluntarily participate in the forum with a reviewing MDA official in order to build a positive relationship with community as well as to address concerns and issues.

Upon completion of the forum, it is evident that the community is concerned with the Holsteins expansion. The Holsteins are worried that the strong protest to the operation will put the farm under scrutiny from the community. The operators want to assure the public that the farm is utilizing the best practices, technologies and environmental protection beyond their current system so as to alleviate undue risks and concerns. Under guidance from field agents, the operator complies with all GAAMPs in relation to manure management and utilization, nutrient utilization and pesticide utilization. This full compliance with the GAAMPs allows the Holsteins to receive state protection from nuisance complaints and lawsuits in relation to their normal farm practices.



The Holstein family has been given the go ahead from the MDA to expand their CAFO at the site designated in their site plan. However, due to federal regulations under the Clean Water Act, the operators needs a general permit indicating compliance to water quality standards in order for the operation to be licensed to produce.

The Holsteins have had a positive environmental track record previously with no discharges into watercourses. This enables them to receive a general permit for production through a certification with the Michigan Agriculture Environmental Assurance Program (MAEAP). Through MAEAP, the Holsteins assess environmental risks around the existing and proposed farmstead. As a main part of their program, the operator's produce a certified nutrient management plan to account for all nutrients and discharges from the operation. Upon completion of MAEAP, the Holsteins gain their CAFO permit. Compliance with GAAMPs and MAEAP will not, however, protect the Holsteins from prosecution if there is a discharge or documented pollution event.

The Holsteins are now subject to verification and on-site reviews from state field officials. Their plans must continually be reviewed and updated to ensure that their operation remains in compliance with the GAAMPs and MAEAP. With continued compliance, there is environmental assurance for both the public and the operator, as well as additional benefits for the farm operators. As noted, the Holsteins will continue to receive state protection from lawsuits and complaints. However, for their completion of both GAAMPs and MAEAP, their insurance company has lowered the Holsteins payments.

## CONCLUDING THOUGHTS

Though the MDA has created the structure to implement the Right-to-Farm Legislation and enforces the regulation, the final outcome of the Right-to-Farm GAAMPs and MAEAP lies in the hands of the agricultural industry.

An incentive of the GAAMPs and MAEAP is that any livestock operator with a farm with greater than 50 animal units is protected by the state from complaints and lawsuits upon compliance to GAAMPs and MAEAP. By not pinpointing intensive operations exclusively in GAAMPs and MAEAP, Michigan has created an equal platform for protection, an approach that protects the existence of both sizes and types of operations. However, after the difficulty in the past to develop and expand at a location due to local ordinances and planning, many operators are increasing their number of animal units so as to qualify for GAAMPs protection and dodge local ordinances concerning agricultural siting. This is an underlying force pressuring the livestock industry to expand.

Challenges in Michigan's approach also rise in the area of local level stakeholders. With only a regard for local plans and ordinances, there is concern that the power of local level government in a home rule state is being extinguished. As well, concerns over the elimination of the local voice extend to the public sector where the decrease in public participation and consultation has limited the community involvement in the decision-making process.

## SUMMARY

The issue of regulating an industry that is in the stages of a dynamic flux is a challenge across North America. The State of Michigan has approached the changes in the agricultural arena by governing intensifying livestock facilities through environmental regulations, best management practices, and with a strong regard for the social impacts that the agricultural industry has on the state. The use of Right to Farm in this context is of particular interest. Though the state still faces challenges in its approach, it has taken decisive action that attempts to protect the environment while creating a framework for agricultural growth and expansion.

## **Bibliography**

- Boersen, Gary. 2002. Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Production Facilities. USA: Michigan Department of Agriculture.
- Brummel, Phil. (2002). Personal Interview. Administrator of Planning & Development in Allendale Charter Township. June 3, 2002.
- Caldwell, Wayne and Michael Toombs. 1999. "Rural Planning, The Community and Large Livestock Facilities: A Cross-Canada Checkup." Plan Canada, Volume 39, Number 5.
- Caldwell, Wayne. 2001. "Risk Management and Agriculture: Coping With Change - A Municipal Perspective." The Great Lakes Geographer. Volume 8, Number 1.
- Daniels, Tom. 1999. When City and Country Collide. Island Press, Washington, D.C.
- DeLind, Laura. 1995. "The State, Hog Hotels and the Right to Farm: A Curious Relationship" Agriculture and Human Values. 12(2), 34-42.
- Edelman, Mark; Harold Harris, Andy Seidl and Mellie Warner. 1998. 1998 National Survey of State Animal Confinement Policies. Report of Animal Confinement Policy National Task Force. Colorado.
- Government, State of Michigan. 2002. Information Concerning State of Michigan. USA: Michigan. Accessed July 1, 2002. Available: [www.michigan.gov](http://www.michigan.gov)
- Grey, Mark A. 2000. "'Those Bastards Can Go to Hell!' Small-Farmer Resistance to Vertical Integration and concentration in the pork Industry." Human Organization. Volume 59, No. 2, pp169-175.
- Henderson, Harold, 1998. "Noxious Neighbors." Planning, November, 1998
- Lapping, M., G. Penfold, and S. Macpherson. 1983. "Right to Farm Laws: Do They Resolve Land Use Conflicts." Journal of Soil and Water Conservation. 38(6).
- Linderman, K . 2002. Personal Communication. Michigan Department of Agriculture, Right to Farm.
- MAEAP. 2002. Michigan Agriculture Environmental Assurance Program News. USA: Michigan.
- MAEAP. 2002. The Michigan Agriculture Environmental Assurance Program. USA: Michigan. Accessed July 1, 2002. Available: [www.maeap.org](http://www.maeap.org)

- Michigan Department of Agriculture. 2000a. Michigan Right-to-Farm Act (Act 93 of 1982, as Amended). USA: Michigan Department of Agriculture.
- Michigan Department of Agriculture. 2000b. Livestock Production Facility Siting Request Application and Information Checklist. USA: Michigan Department of Agriculture
- Michigan Department of Agriculture. 2001a. Generally Accepted Agricultural and Management Practices for Site Selection and Odor Control for New and Expanding Livestock Production Facilities. USA: Michigan Department of Agriculture.
- Michigan Department of Agriculture. 2001b. Fiscal Year 2001 Annual Report: Right-to-Farm Program. USA: Michigan Department of Agriculture.
- Michigan Department of Agriculture. 2002a. Generally Accepted Agriculture and Management Practices for Nutrient Utilization. USA: Michigan Department of Agriculture.
- Michigan Department of Agriculture. 2002b. Generally Accepted Agriculture and Management Practices for Manure Management and Utilization. USA: Michigan Department of Agriculture.
- Michigan Department of Agriculture. 2002c. Information Concerning Right-to-Farm and GAAMPs. USA: Michigan. Accessed July 1, 2002. Available: [www.michigan.gov/mda](http://www.michigan.gov/mda)
- Michigan. 2002. Field Notes and Personal Interviews. Conducted June 3-7, 2002.
- Norris, P. & S. Batie. 2000. Setting the Animal Waste Management Policy Context. Agricultural Outlook Forum. USA: US Department of Agriculture.
- Norris, Patricia. 1999. Townships Can Plan for Animal Agriculture. Michigan Township News, July. USA: Michigan.
- Person, Howard. 2000. Michigan Odor Print. USA: Michigan State University. Accessed July 1, 2002. Available: [www.maeap.org/mich\\_odor\\_print\\_fin.pdf](http://www.maeap.org/mich_odor_print_fin.pdf)
- Wilford, Jan. 2002. Personal Interview. Program Director of MAEAP. Conducted June 5, 2002.