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COMMON COMPONENTS OF SWINE POLICIES

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- *"Coloradoans must consider the necessity, sufficiency and efficacy of the current policy environment to determine the appropriate course of action."*
- *"State level swine policies commonly include siting and construction, set-backs, effluent management, financial assurance, size and management structure, training and education, liability and nuisance suit provisions."*

"For every complex question there is a simple answer…and it is usually wrong." Lhao

Introduction

As Colorado considers new legislation for the Confined Animal Feeding Operations (CAFO), particularly swine, voters must consider the necessity, sufficiency and efficacy of the current and proposed policy environment to determine the appropriate course of action (Table 1). Coloradoans are not alone in making this determination. Due to recent changes and challenges in the swine industry, a number of states have adopted new legislation to guide the industry. In addition, the federal Environmental Protection Agency (EPA) is working in conjunction with the United States Department of Agriculture (USDA) to craft a new policy framework for confined animal feeding operations based on the provisions of the 1972 Clean Water Act. State level swine policies commonly include provisions for siting and construction standards, set-back requirements, effluent management plans, financial assurance, size and management structure requirements, training or educational requirements, the assignment of ownership or liability, and "nuisance" civil suit protection. These typical features of swine policies will be discussed here.

Size and management structure

Livestock policies commonly specify a minimum size requirement below which the policy does not apply unless specific problematic operations are identified. The justification for size discrimination stems from the perception that larger operations create a greater environmental risk due to the volume and concentration of their waste. It is also commonly argued that smaller operations cannot afford current effluent management

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[2] This document was originally released as a working paper in the Colorado State University-Cooperative Extension series entitled CAFO Info, September, 1998.

technologies. Current research does not provide evidence in support of or in refutation of these positions.

An animal feeding operation (AFO), as defined by the Colorado Water Quality Control Commission, feeds livestock at one place for 45 days or longer in any 12 month period, and forage growth is not maintained in the confinement area. A CAFO is an AFO with 1,000 or more animal units (AU) confined in that area. An AU equates different types of livestock into the same units so that regulations can be developed for many types of animals at once. In Colorado, 0.2 market hogs are equal to one beef cow. A mature dairy cow is equivalent to 1.4 beef cattle, or one dairy cow is equivalent to seven feeder hogs. The Colorado swine conversion is one half as strict as the Federal definition; a Colorado CAFO has at least 5,000 feeder pigs (50 lbs. and greater) whereas 2,500 is the federal standard.

Several states have adopted legislation regarding the acceptable management structure of a CAFO. In some locations, corporate ownership is outlawed in favor of individual family businesses, family corporations, and/or cooperative structures. In some locations, packing houses cannot own CAFOs ("captive supply" provisions) and in some cases contracting arrangements are legally limited.

The justifications for regulatory preferences for certain management types stem from the contention that corporations are less accountable to rural communities and that they tend to purchase fewer inputs locally, diminishing the positive "multiplier effects" on the community. Vertical integration regulations are justified on free access to markets and price discovery criteria. Anecdotal evidence does appear to point to challenges facing smaller producer regarding price discovery and free access to markets. However, it is their size and not their structure that appears to create the barriers to market access and information. While small farms tend to purchase a greater proportion of their inputs locally (about 80% within 20 miles of the operation) than larger operations (about 50%), current research does not support or refute the contention that management structure rather than either sheer size or type of operation differentially influence community economic impacts of CAFOs.

Siting and construction standards

Standards for siting CAFOs commonly address odor and water quality concerns. Some of these concerns are dealt with via set-back requirements which are covered in the next section. In addition, the location of a CAFO should consider the type of soil on which the operation is being built and the rights to water available to the operation for effluent management. Because only a few states are attempting to require that a farm producing hogs must own or lease land on which to apply the effluent as fertilizer, the preferred storage method is to build a storage facility that can last 10, 20 or 25 years. The likelihood of a leak causing serious damage to the local water quality is reduced when the soil a CAFO is built on will filter and slow the effluent from reaching groundwater sources. This suggests that effective regulation will account for soil type in addition to water quality, quantity and odor. General provisions of Colorado's construction standards are found in Table 1.

Set-back requirements

Set-backs are distances established to protect vulnerable water supplies from nutrient contamination and/or neighbors of CAFOs from the odors produced by the facility. Odors from CAFOs have been reported as far as 15 miles from a facility, but in other cases may not be detectable as close as a few yards away. No federal set-back standards exist. State and local set-back distances vary from about 200 ft to about 2 miles depending upon the operation size, but not generally according to production practices. Proposed Amendment 14 carries a 1 mile set-back provision. Due to the difficulty in determining the amount, type, frequency and impact of swine odors considered a nuisance or health hazard to a sufficient number of people, odor oriented set back distances are commonly subjectively determined or couched in terms of water quality protection standards.

Set-backs to protect water supplies generally specify the minimum distance that a CAFO can be located and/or spread effluent from a surface water source, well head, or flood plain. Set back distances can also be based upon the amount of land needed to agronomically spread the effluent generated by the operation. Under these provisions, the CAFO must own or lease adequate land or must arrange to obtain the rights to spread its effluent on neighboring land. The amount of land needed depends upon the soil and crop type, available water and the size of the operation. Clearly, such provisions confound the distinction between an adequate effluent management plan and set-back distances.

Table 1: Current & Proposed Colorado CAFO Legislation

Topic	Confined Animal Feeding Operations Control Regulation 5 CCR 1002-19	Proposed Amendment #14 (1997-98)
CAFO Size	1,000 AU	800,000 pounds of swine
Seepage	Not to exceed 1/32 inches per day	Seepage must be minimized
Lagoon Liner	Natural or Plastic	See seepage requirements
Capacity	If 50% of runoff storage is exceeded then dewatering to full runoff storage capacity required within 15 days	Permit must be received from the Colorado Department of Health. Must minimize runoff.
Rainfall Capacity	Lagoon must withstand 24 hr period of maximum recorded rainfall over past 25 yr.	Water Quality Control Commission must adopt rules regarding construction, operation and management of effluent.
Earthen Liner	Minimum of 12 inches in thickness	Not specified, but would fall under permitting.
Grandfathering	Lagoons completed August 30, 1992 exempt from 1992 CWA regulations	Must get permit if currently "commercial", under construction or expanding.
Effluent Application	Not to exceed agronomic rates.	Not to exceed nutritional requirements of the plants on the land. Must not degrade public or state trust lands.
Monitoring	Not required, unless by the request of the Water Quality Control Commission	Land applied wastes monitored by farms and reported to the state health department
Reporting	No self reporting required	Immediate reporting to state and county health departments of spills
Costs of Monitoring	Complaint driven. Normal Dept. of Health budget covers	Assessment of permit fees from owners and operators up to $0.20/AU
Setbacks	Not Required	Must be established between new land waste application sites and occupied dwellings, schools and municipal boundaries
Bonding	Not Required	Financial assurance required to return site to state before development of the facility
Covered Waste Storage Sites	Not Required	Required
Odor Mgmt	Suggests that management practices promote odor control	Odorous gases must me managed from covered lagoons. Minimize odor emissions from operation.
County Govt	Not precluded from passing more stringent regulations	Not precluded from passing more stringent regulations

Note: In addition, Amendment 13 is a proposed constitutional amendment mandating that all livestock species fall under the same regulations on an AU basis. This amendment is targeted to CAFOs over 1,000

Set-backs to mitigate the effect of odor can specify the minimum distance from a road, neighbor, or public building (e.g., school or church). Distances can be measured from and/or to the property line or from and/or to buildings. Homes of neighboring agriculturists may be exempted. Commonly, exemptions can also be obtained by the written permission of affected individuals.

Unfortunately, most set-back provisions do not encourage technological or managerial innovation to mitigate odors. Odor can be controlled to some extent by having clean barns, altering the feed ration, and building covered lagoons. Further, once the manure is applied to the soil as a fertilizer, incorporating it into the soil quickly reduces the amount of odor it produces. Covering lagoons and effluent incorporation can reduce

odors by as much as 50 to 80%. Landscaping and creative siting can also reduce off-site odors or reduce nuisance complaints.

Effluent management plans

Traditionally, effluent management plan requirements addressed the risk of ground and surface water pollution resulting from system failures/flaws or inappropriate effluent application. Effluent management plans recognize that effluent is a valuable fertilizer if used at agronomic rates of application and an environmental hazard otherwise. Effluent management plans increasingly consider odor in recommending or mandating management technologies or best management practices (BMPs). These standards are dependent upon the sort of soil (to determine seepage rates and nutrient content), crop (to determine nutrient uptake rates and application timing), effluent (to estimate nutrient content), land (gradient and ownership), weather (spreading on frozen soil is often prohibited), and available technology (e.g. broadcasting versus incorporation, lagoons versus pits). Currently, Colorado statutes do not demand a nutrient management plan (Proposed Amendment 14 does). Other states mandate manure management plans and administration varies across states, and many concentrated farms already provide a plant and readily absorb the costs of this preventative action. The general rules for an effluent storage system in Colorado are summarized in Table 1.

Financial assurance

A number of states have required that swine operations provide proof of financial assurance sufficient to clean up spills and to return the site of an operation to its state previous to the introduction of a swine operation should that enterprise close. Financial assurance of this kind is required of industries posing substantial risk of environmental damage requiring clean-up or remediation (e.g., mining operations). Operations can be self insured or can be insured through an insurance or bonding company. The bond amount is determined by the estimated cost of returning a site to its previous state plus the estimated risk and impact of a potential spill. Bond amounts vary based upon operation size, perceived risk and impact of spills and site remediation costs and are determined by the regulating authority. The bonding company guarantees payment to the regulating authority and receives an annual payment of 1 to 3% of the bond amount from the insured operation. Payment rates depend upon the financial status of the operator and its historical performance. One example from Iowa set bonding rates of $2.00/lb of swine for operations using lagoons, $0.50/lb for pits, and $0.25/lb for above ground storage containers to insure spill clean-up and about $20,000 per 2,000 hog finishing building for remediation. However, the Iowa State Supreme Court struck down these requirements.

Training or educational requirements

Several states require manure management training for managers of operations greater than a specified size. Size considerations also guide whether managers need to attend training or pass a test. In some cases, managers can "test-out" of the training requirement. Several states are using the National Pork Producers Council's Environmental Assurance Program to guide their educational efforts.

Ownership and liability

Ownership and liability for any damages caused by a swine operations vary across states because of contracting arrangements. In some cases, animal ownership and liability for all damages caused by a swine operation is the responsibility of one individual. In some cases where integration through contracts is in evidence, the owner of the pigs and the individual responsible for manure management are different people. In some cases, the owner of the pigs is still liable for manure management and in other cases, the contracted individual is liable. The argument in favor of animal owner liability stems from the perception that manure management technology is costly and the animal owner is the individual with the most power and financial wherewithal in the contracting relationship. On the other hand, some argue that the contracted manager is in the best position to monitor compliance with on-site regulations and should, therefore, be held responsible.

Civil suit protection

All 50 states have "Right to Farm" legislation. This legislation prevents "nuisance" civil suits of agricultural operations under certain conditions. In most cases the burden of proof is on the individual or community bringing the suit. In some cases, existing agricultural operations are protected, but new or expanding operations are not protected from civil suits from existing residents. It is sometimes argued that lifting protections from nuisance suits may impact smaller producers with fewer resources available for legal costs more than larger operations with greater financial abilities to defend themselves. In Colorado, the "Right to Farm" statute has not been tested with regard to swine CAFOs to our knowledge.

Conclusions

The citizens of Colorado face difficult challenges in creating an appropriate policy environment for swine and other livestock operations to meet the objectives of Coloradoans. Policy decisions made at the state and national level affect the economic security of rural Coloradoans. However, Colorado is neither the first nor the last state to wrestle with these issues. The past, present and future state of swine policy across the nation can help Coloradoans and rural communities to craft a policy environment appropriate to their opportunities, challenges and needs. Here, we have reviewed the common principal components of swine industry policies across the United States in order to facilitate discussion among those whom are likely to be affected by their provisions.

Where You Can Go

1. "Animal Waste Control Programs of Iowa and Eight Other States." By Ubbo Agena the Iowa Department of Natural Resources. Though published in 1994 this paper provides a snapshot of regulations in place in IA, IL, KS, MN, MO, NB, NC, SD, and WI. A chart that summarizes survey responses is included and gives basic information about these states' regulations.

2. CAFO Standards for Pork Production: A Survey of the Major Pork Producing States." By the SIWPCA and published in February of 1998. This article summarizes results in chart form another survey that covers USEPA/NPDE, VA, MI, KS, IA, KY, MO, NB, UT, IL, OK and EPA Region VI.

3. "Odor and Odor Policy Criteria." By David Schmidt and Larry Jacobson of the Missouri Extension Service. Provides a more detailed explanation for the problems of the problems in measuring odor.

4. Confined Animal Feeding Operations Control Regulation, (5 CCR 10002-19). The 1992 amended Colorado Water Quality Act that specifically discusses the topic of CAFOs. This regulation will be subject to change depending on the outcome of the Proposed Amendments 13 and 14.

5. Proposed Amendments 13 and 14. Possible changes that may be voted for by the constituents of the state. Summaries of the proposed amendments have been included in this paper in comparison to the current Colorado regulations.