

Animal Agriculture in South Carolina: A Fact Book

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Introduction

Hal Harris

In 1996 the South Carolina General Assembly debated and passed the so-called “Hog Bill.” The debate generated a great deal of heat and very little light. Events in North Carolina, not South Carolina, appeared to tilt public opinion toward passage of the bill. The Department of Health and Environmental Control has now incorporated the law into its regulatory framework. The new regulations went into effect in June 1998.

The controversy over animal agriculture continues. In response, a team of Clemson University scientists conceived a project to study economic and social forces affecting animal agriculture in the Palmetto State. This project was funded under the 1997 General Assembly Agricultural Productivity and Profitability initiative.

The specific purposes of the project were:

- 1) to improve the knowledge base of both interest groups and the general public about animal agriculture issues;
- 2) to ascertain South Carolinians’ attitudes and opinions about animal agriculture; and
- 3) to create the environment for an improved dialogue between the industry, concerned citizens, and government on animal agriculture.

This *Fact Book* is the culmination of the team’s work.

Concerns and Tradeoffs

Formulating public policy involves tradeoffs and compromises among affected citizens. The animal agriculture issue involves a particularly broad array of socioeconomic, health, and environmental concerns (Figure 1). The evidence used in arguments about these issues is often anecdotal, at best. For some issues, peoples’ perceptions may be as important as the facts. A major purpose of this study was to ascertain the importance of some of these issues to South Carolinians based on a random survey as reported in a later section. Another purpose is to provide factual documentation for some of the concerns raised by proponents and opponents of animal agriculture.

Figure 1. Concerns/Tradeoffs

◆ Engine of Economic Growth	◆ Environmental Quality, Health Questions
◆ Viability of Ag Without Subsidies	◆ Nuisances
◆ Replacement for Tobacco	◆ Job Quality
◆ Consumers Benefit	◆ Big is Bad
◆ Property Rights	◆ Role of Government
	◆ Who Controls the Sector

Trends in Animal Agriculture

While there are considerable differences in current trends within the hog, beef cattle, dairy, and poultry sectors, there are a number of common directions (Figure 2). Farms and processing operations are becoming fewer, much larger, and increasingly specialized. Vertical coordination through contract or ownership through the system is increasing. The industry is relocating from historic production regions. There are more confinement operations. Farms tend to “cluster” in relatively small geographic areas. Each of these trends raises contentious issues.

Figure 2. Trends in Animal Agriculture

- ◆ Growing Scale of Operations
- ◆ Increasing Specialization
- ◆ Increasing Vertical Coordination
- ◆ Spatial Relocation
- ◆ More Confinement Operations
- ◆ Clustering

Growing Scale of Operations

Just a few years ago, a dairy operation with 200 cows would have been large by national average standards. Today, herds of 1,000 cows or larger are the norm for areas rapidly expanding in milk production such as California, Idaho, and New Mexico. Half the nation's milk supply now comes from herds of over 200 cows.

Large animal operations mean greater concentrations of waste at a particular site, attracting more public scrutiny. Bigness per se is an issue. Much of the furor over animal agriculture is fed by particular farm interests. Allied with environmental groups, their main concern is that large farms (terms used in the press include megafarms, factory farms, corporate farms) are driving "family" farms out of business. Indeed, today's large animal operations rely on hired rather than family labor.

Increasing Specialization

Historically, meat and animal product producers raised crops and fed those crops to animals as a value added marketing strategy. Size was limited by acreage of cropland. Today, they tend to produce just meat, milk, or eggs. Crop-raising is often done only as a means of nutrient (manure) disposal. Raising of replacement animals is another production stage that is commonly being spun off. Hog production seems to be moving to a three tier system of production, with large specialized units handling farrowing, nursery, and finishing, respectively.

Increased Vertical Coordination

Terms applied to the strengthening links between input supply, production, and marketing phases include vertical integration, agricultural industrialization, and contract farming. The broiler industry has been vertically integrated for over 40 years. Some of the main names associated with the industry include ConAgra, GoldKist, Tysons, and Purdue. Such corporations own and operate feed mills and processing plants. Since they own the chickens and the feed, it can be argued that technically they are the farmers. Broiler producers own the production facilities and, significantly, the manure and any birds that may die during the production process. They are paid a fee, as specified in a contract with the integrator. Usually the contract contains efficiency incentives. The swine industry is now moving toward the broiler model. Some observers note that this trend is not dissimilar to the movement toward franchising in the fast food and other industries. Like the McDonald's clerk who presses the key with the Big Mac picture, the farmer pushes the buttons according to the integrator's specifications.

Spatial Relocation

Separation of growing feed and raising animals means that the local availability of feed no longer determines where animals will be produced. Thus, North Carolina, which is not a large grain-growing area, was able to jump from sixth to second in hog production in the past decade. It made a similar jump in turkey production in the previous decade. California passed Wisconsin as the number one dairy state several years ago. Animal agriculture is growing rapidly in such states as Colorado, Idaho, New Mexico, Oklahoma, and Utah. Geographic relocation, among other things, means that millions of people unaccustomed to the sights, sounds, and smells of animal agriculture now face those issues on a daily basis.

More Confinement Operations

Except for the cow-calf sector of the beef industry, animal agriculture today generally means many animals in a relatively small space—often specialized buildings. This production practice increases the concentration of waste at any particular site. For some, this practice raises questions of humane treatment of animals. A surprisingly large percentage of South Carolina residents in our survey (39 percent) agreed with a statement that animal agriculture raises ethical concerns.

Clustering

Not only is animal agriculture relocating among states, within most states production units tend to cluster together. As an example, two-thirds of South Carolina's milk production occurs in just five counties, three of which are contiguous in the upstate, and two that border one another downstate. Proximity to processing plants is a major factor behind this phenomenon. Achieving economies of size in feed manufacturing plants is another consideration. Clustering also insures that the requisite industry infrastructure exists—access to such things as veterinary services, skilled technicians, and a knowledgeable labor force. Clustering means that statewide statistics such as those given in this report can mask the true picture in given localities.

Clustering raises many questions. Should statewide environmental control regulations be adopted because a few counties have large concentrations of animals? Is local control the answer? Clustering also increases the prospects for different avenues for manure disposal, such as municipalities have for sewage.

Forces of Change

Several key factors are driving the dramatic changes in the meat and animal product industries. The most important are technology, changing consumer demand, changes in processing, economies of scale in production, and instability in input and output prices.

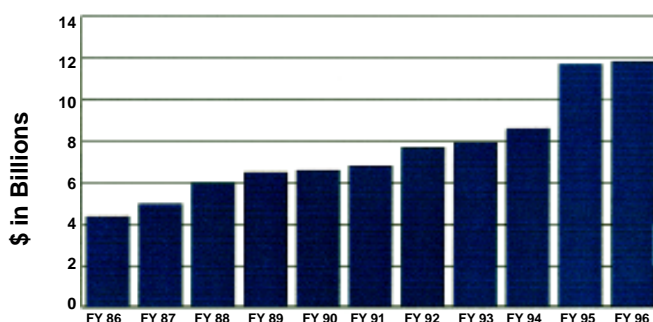
Technology

The animal industries have witnessed amazing growth in productivity in recent years. Since 1988, milk production per cow has jumped 20 percent. The pork and poultry sectors have shown similar gains. Even in the cow-calf sector of the beef industry, which is still characterized mostly by small operations, productivity has doubled in the past 40 years based on the weaning weight of calves. Improved genetics have been a major technological force behind such gains. Not only have improved genetics raised productivity and feed conversion efficiency, they have also resulted in leaner, more uniform animals. Although such technology is not available only to large farms, studies repeatedly demonstrate that large firms have an advantage because they adopt technology earlier than small farms. Note that in the vertically integrated sectors, it is the integrator who controls the genetics and supplies them to producers.

Changing Demand for Food

The restructuring of animal agriculture is in no small measure a response to changing consumer demand. United States consumers are demanding lower fat, easily prepared food. The away-from-home market is becoming increasingly important, now representing 45 percent of food expenditures. In addition, the export market has become a major factor driving growth and change in animal agriculture. United States meat and animal product exports are today highly competitive in the growing world market. Such exports grew from slightly over \$4 billion in FY 1986 to almost \$12 billion in FY 1996 (Figure 3).

Figure 3. Value of Animal and Animal Product Exports, US - Fiscal Years



Changes in Processing

The intermediary sector between consumers and producers has undergone even more dramatic structural change than the production sector. For example, in 1996 there were 28 pork processing plants in the United States with annual capacity of 1.5 million head or greater. These plants accounted for 80 percent of total slaughter. In 1982 there were only six such plants, and they accounted for only 17 percent of processing while smaller plants processed the other 83 percent. Now the fewer and much larger plants produce an incredibly diverse product line of specialty items designed for the ready-to-eat and away-from-home market. They demand high quality, uniform animals and products—and are willing to pay premiums or maintain captive supplies to get them. They also prefer prescheduled delivery of truckload lots.

Economies of Scale in Production

Studies repeatedly show that the largest swine, dairy, beef, and poultry operations have lower production costs. The rapid exit of smaller units and growth in number of larger ones provide the ultimate evidence. The U.S. Department of Agriculture (USDA) reported that over 24,000 farmers left the hog industry in 1996 alone. Half of these had an inventory of less than 100. In contrast the number of farms with 2,000 or more head grew by 80 farms.

Studies also indicate that lower cost per unit of production for larger farms includes the cost of waste disposal. The more elaborate the system used to dispose of manure, the greater is the cost disadvantage to smaller farms. Thus, those who seek to save family farms by requiring more stringent environmental regulations face a serious flaw in their logic.

Price Instability

The 1996 Farm Bill freed farmers to produce commodities other than those that previous farm programs had locked them in to producing. Animals, as well as alternative crops, could now be produced. Most economists believe that “Freedom to Farm” will result in more price volatility. Internalizing feed purchase decisions through vertical integration provides a mechanism to cope with such instability, as does the assured regular check provided from a livestock or poultry production contract.

Summary

Many citizens have expressed dismay about the changing structure of animal agriculture. Many of their concerns center around the five trends outlined in this section. It is important to note that these forces of change show no signs of abating.