

Trends, Technology, and Challenges for Large-Scale Animal Agriculture

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Large-scale animal agriculture has changed dramatically in the last twenty years. It has increased at an impressive (or alarming, depending on your point of view) rate, with concomitant increases in efficiency of production. This increase in efficiency has been accompanied by more uniformity in products, at least in pork and poultry. Beef is still struggling with the problems of an inconsistent product.

In spite of the fact that we in animal agriculture produce uniform, delicious food, all is not happy in the agricultural arena. For one thing, prices are terrible. For another, the public less and less is inclined to view us as protectors of our natural resources, and more and more view us as polluters or as potential polluters. So, we need some help. Here are some modest proposals:

Odor – The hot button issue with pork production is odor. Please research the products and/or management techniques that will reduce the odor from pork production.

Sludge – Cattle feedlots have retention ponds in which sludge accumulates. These ponds are, in many instances, not designed to operate as anaerobic digestors. The sludge simply accumulates over the years. Any research on mechanical/biological sludge reduction would be of immense benefit to cattle feeders.

Dust – Dust is a problem of differing but recurring intensity to cattle feeders. What is the cost in terms of animal performance? What is the effect on employee health? And what can be done to reduce the dust from feedyard pens?

Lagoon Seepage – All clay lined lagoons seep. What happens to that seepage rate over time? Does it increase or decrease? What happens to the nutrients in the lagoon water as it seeps through the liner? Are they caught up in the soil and held there?

River Contamination – All agriculture is being held liable for excess nutrients in our Nation's rivers and streams. I'd like to know what the nutrients are and where they came from. Some possible sources are: Golf courses, municipal sewage plants, urban lawns, crop farming, animal agriculture, natural decomposition of vegetative matter, and septic systems. There may be others. We desperately need research to determine the source of the nutrients and the conditions that lead to their arrival in the river (excess rainfall, excess rainfall following drought, winter, summer, etc.) You cannot fix a problem until you know what the problem is. My concern is that agriculture, in general, and animal agriculture, in particular, is being blamed for excess nutrients in the rivers and streams. I don't believe the science exists to justify this position. I'd like to see the science done.

Antibiotic-resistant bacteria – There are a number of people who believe that the use of antibiotics in animal agriculture is contributing to the problems of resistant bacteria in humans. So far as I know, no scientific study has proven that this is the case. Unfortunately, no study has disproven it either. We need some science done in the area of antibiotic use in animal production and its effect on human health. In the absence of facts, emotions drive decisions. This is not good.

Efficiency of effluent application – Some States are considering mandating that effluent be knifed into the soil, with the supposition that this is more environmentally friendly. There may be some odor reduction in this application, but I don't believe it has been quantified. How do you balance that against the costs (and pollution) of running the tractor to incorporate the effluent into the soil? How does that compare to applications through a center pivot sprinkler in terms of energy used? These questions need answers. Inquiring minds want to know!

I'm sure I have not exhausted the list of things that we in animal agriculture need to know more about. I've tried to stick to those topics that have impacts on environmental or human health. When you have completed these assignments, contact me and I'll have more.

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