129

MR. CARLIN: Okay. Do we have a Dr. Lusby?

MR. LUSBY: That's me. My name is Keith Lusby. I'm the head of the animal science department and I have a cold today. I apologize for that. A little background. I am a native of southwest Arkansas and I was around here when the poultry industry did move in and I'm a graduate of your fine land grant college in Kansas.

MR. CARLIN: We'll take special note of that.

MR. LUSBY: I appreciate that. I thought you would. That's why I mentioned it. The animal science department here covers everything from poultry -- I think you talked to Dr. Bottje yesterday, the head of our poultry science department. What I want to talk about even

130

though you're here to talk principally about the poultry industry is the cattle industry and really what I'm going to talk about would, I think, be relevant to generally the area from east Texas all the way to the Atlantic coast.

You saw some maps where the poultry industry is located and I think what you probably already understand is that there's a strong relationship where the cattle industry in the southeast is located and where the poultry industry is located.

Now, just a little bit of background on what the cattle industry is in Arkansas in the southeast. It's pretty much an industry of cow and grass. If you look at what we have, we have about two million cattle in Arkansas, about a million of those are cows. They're on 27,000 farms, so it's pretty much a small herd industry. We average about 37 cows per farm and actually if you look at the cattle industry across the U.S., that's very typical. A few large ranches get a lot of publicity, but by and large, it's a small farm business.

We pretty much raise two kinds of cattle that we sell in Arkansas. The calves that we wean

131

off these cows at about 550 pounds and we a lot of times take these cattle past the stocker stage, 750 pounds, and then they all go to the feedlot. If we look at what's happening with the corn prices, I think it's fair to likely we're going to raise more

cattle in Arkansas and take them to even larger weight and that's going to become more important.

You've already seen a map of where the poultry industry is located in Arkansas. If you notice those hatched areas, that's where the largest concentration of cattle are. And if your memory is good where the poultry industry is, they're the same counties and for the same reason.

I talked to the Department of Agriculture of Natural Resources last week and according to their estimates we apply litter to the 773,000 acres in Arkansas, about 4,000 farms. And actually if you look at that picture, that's not far atypical of what a lot of the cattle industry and poultry industry in Arkansas looks like, pastures surrounding chicken houses, averaging about a little over three chicken houses per farm.

Okay. Do a little math on that, the average stocking rates and we calculated it about 350,000 cows in Arkansas graze littered fertilized

pasture. So where is the synergy between these two industries? Some of this has already been discussed.

Well, with poultry, because of the fertilizer, you have a lot more cattle, and like I say, from my perspective I saw the poultry industry move into Nevada County down around Hope, which is Hempstead County, but everybody knows where Hope is and not where Prescott is where I grew up. But when that industry moved in, I was about ten years old.

I remember when my father got the first load of poultry from our neighbors, poultry litter, and, you know, not really being trained in animal science or agronomy I could still understand very quickly what that was doing, you know, for our farm is that very poor soil that had been farmed in cotton and misused for a lot years all of a sudden turned into very good pasture.

Litter is an excellent soil amendment, as you well know. It replaces man-made fertilizer. It is a -- matter of fact, in most cattle operations in Arkansas, I think if we had to buy man-made fertilizer today we probably would not do it because of the cost. It's good enough fertilizer

that if you look at pastures that are fertilized with poultry litter, if there's enough forage there, if it's harvested at the right maturity, there's literally

nothing required to add to that other than selenium in a few select areas.

With the cattle, the litter has value. We brought up what the income is from those poultry houses and if you did some arithmetic you'd probably thought, you know, that's not a whole lot of money, but if you make that about equal in value to the poultry litter as a fertilizer and look at the income off cattle, all of a sudden that's made both of those industries viable across the southeast.

Now, the other thing is that this is primarily a secondary income to most families. I think if you look at most of the folks raising chickens and cattle in Arkansas that's not the only thing they do. Someone works off the farm, but this is a large enough business on the farm to allow someone to stay on the farm making income without having to take a job in town and allows them to stay on the farm.

If you look at the age of our producers, it's been pointed out that they are an aging

population. Poultry and particularly cattle are a large source of retirement income in the southeast because a lot of these folks have never had large 401(k) programs. They don't have anything other than social security and, you know, the income for 40, 50 or 100 cows doesn't look like much, but when you figure what the alternatives are, it becomes very significant to them. It lets people live on the farm and it is essential to our rural economy.

If you talk to the bankers, their big fear if we ever lose the poultry industry, we'll lose the cattle business and we'll lose the equity in the farms and these local economies will be severely damaged. If you look at the picture here, the fellow on the left is the father of the young man on the right. The guy in the middle is the county agent. They're a classic example. There's a large enough industry or business between these folks' chicken business and cattle business that it's allowed that young man to stay on the farm and manage the livestock and poultry operation. If it weren't for that, then he would be in Little Rock or Fayetteville or somewhere doing something else and what else would we do in that area in north

Arkansas.

The question is, is it sustainable? We've had about 50 years of experience in Arkansas with these two businesses running together. We've learned a lot. It's been pointed out the technology has changed, the soil has changed. It's come from when it was so poor that any kind of fertilizer was beneficial to in some cases we don't want any more phosphorus on it, but I think we're getting much better at being able to estimate it to be able to understand what our situation is and design management plans.

And I'd point out also that if we look at -- I think even Washington and Benton County up here are good examples, but if you'll look at the impact on watersheds that the poultry and the cattle business are only one part. We have 375,000 people in these two counties which is a lot more than we had 10, 15, 20 years ago, look at the impact on the construction business, municipal influence, how much nitrogen comes out of Home Depot that goes on the lawns and the chemicals. There are a lot more things impacting the watershed around here than just the poultry and livestock.

Now, it's always a question of when do you apply it, where do you apply it and how much. I think that's the key to anything whether it's a drug, a fertilizer or a food. Okay. The keys to sustainability, we have to maximize the value of that litter, protect the environment. I think in the case of the industry it's been pointed out that not only do we have to protect it, but we have to be able to prove to a lot of people that we are protecting it because there are a lot of people looking at what we're doing in this industry and we have to be able to document with good science what the real impact is. We have to have good relations with our neighbors.

We have poultry farms at the University of Arkansas. We have swine farms and we pay a great deal of attention to what days we apply any kind of a effluent because what used to be a rural area about ten miles west of here is now some very nice $355,000 homes around there and they did not move out there to smell some of the odors that you heard about. So we have to manage that.

I've told our swine professor that if he wants to win the Nobel Prize that he will figure out a way to make swine manure not smell. And it

probably is, you know, one of the major priorities that we have in the livestock industry today is, are those things that impact relations with our neighbors who are very different folks than they used to be.

So the other thing I would point out is it's interesting how things change. The impact of ethanol was brought up. I've read that in Iowa and places like that now the swine may be a more beneficial business in some cases because they need the phosphorus to put on the corn, all the acres that they're going to have to do to raise corn to make the ethanol. The impact on us in Arkansas is we're going to produce a lot more cattle off of grass because now it's much more economical or it's much more valuable to produce it on grass because of the increased cost of the feedlot. All these things change.

So with that, I appreciate the chance to visit with you and I'll try to answer any questions you might have.

MR. CARLIN: Take us through a little bit in understanding in terms of, I mean, the chicken industry has grown over this period of time obviously producing more chicken litter.

MR. LUSBY: Yes.

MR. CARLIN: The need for that typical land, does the need for that chicken litter go down once you've kind of suddenly got that soil shaped up and producing and you've got great grass or does it need about the same or even more?

MR. LUSBY: Long-term it's going to need the same because long-term you're going to need to fertilize with the amount that grows the grass and does not increase those nutrients beyond the amount that really you need to grow the forage, so you can tolerate putting more in in early years because you can build up phosphorus if the soil had essentially none in it, but at some point it has to equilibrate with what you're going to move off that land in terms of either hay or cattle.

MR. CARLIN: Now, you talked about the typical farmer was 37 cows and that would be three chicken houses?

MR. LUSBY: A typical farm is 37 cows. Probably the guy with three chicken houses I would say maybe has closer to 100 cows or 150 cows, but he may -- if he doesn't own those, he's going to sell that litter to neighbors who have

more, so the ratio of cows to chicken houses will

139

be more than -- I guess it would be about 37 cows to a chicken house, though.

MR. CARLIN: Okay. Okay. But in terms of acres, a typical farmer with one house, 37 cows, et cetera, has to get rid of some of their litter somewhere else?

MR. LUSBY: Eventually, yes, sir.

MR. CARLIN: When you say eventually --

MR. LUSBY: Well, I think we've reached eventually in a lot of counties. In some places we haven't, but when those levels of phosphorus, nitrogen and those things build up to a point that you're building up past a certain level, then you've got to find another place to put it. And I think if you look at the level you can put out, yeah, they're going to have to spread that to other areas. At some point maybe you can do that when you're in close proximity of the farm. This has been brought out in other cases. We may have to put it on a truck and ship it to Oklahoma or down in the areas where they use it for crops. It just depends on where you are geographically and time wise.

MR. CARLIN: Your pictures are very inviting to me in terms of soil conservation. You see that grass and I compare that with the abused

140

soil and the run-off that can take place. Are you saying that we could almost go to any farm and that's what we would see or is that sort of atypical?

MR. LUSBY: No. I think really if you drive around Arkansas and you look at farms that -- and their saying is that everybody who has cattle doesn't have chickens, most everybody that has chicken has cattle. I dare say that 90 percent or more would look much like those pictures I showed you.

MR. CARLIN: John?

MR. HATCH: Yeah. I'm wondering if you saw grass fed cattle as a -- perhaps marketing that as a superior product?

MR. LUSBY: I don't -- the question is, is marketing grass fed cattle a superior product, I assume you mean from feedlot cattle today?

MR. HATCH: In terms of money.

MR. LUSBY: I think nutritionally, I don't really think there's much difference, but if in the perception of people that they like that product,

they deem it's healthy, then it's a product that we would try to teach people how to produce. I think the reason we're going to produce more pounds in

Arkansas is simply because the economics now favor that compared to the feedlot because of the high price of corn.

MR. CARLIN: Fred?

MR. KIRSCHENMANN: I think you may have answered part of my question. I was having -- I mean, I've been very concerned, as I gather you are, about the next generation and other people, the next generation of farmers. You know, nationally now only six percent of our farmers are under age 35 and so we need to do something about that, so I was really intrigued by your comment that this system was enabling next generation of farmers to come in and I was trying to figure out -- because we had heard earlier that net profit from chicken houses is about $9,000 and then you add 37 cows, that doesn't really add up to the kind of income that enables the next generation to come in and then I gather you're saying that 37 cows aren't adequate and it's not all of these farms that are --

MR. LUSBY: I think if you take the three, three and a half chickens and you've got 100 or 150 cows, then you have the chance to have -- I mean, not the kind of income that's going to allow

you to put your kids through college, but it's enough to allow someone to stay on the farm and with another income usually in town teaching school or working at the bank then all of a sudden that becomes a viable income to, you know, to put your kids through college and take vacations and these things and build some equity to pass to other generations on the farm.

MR. KIRSCHENMANN: So the statistic that I'm missing here is that it might be more helpful what the mean number of cows are on the farm so that we have a better idea of how many farms are actually enabling the next generation to stay on?

MR. LUSBY: I can't give you that off the top of my head. I really can't, but I would say it's probably more like the picture of the two gentlemen I showed which is probably six chicken houses and 250 or 300 cows. This business is growing in somewhat of a scale, I mean, for the

reasons that others are, but that's one that does give you a pretty good chance to make a decent income and grow equity.

MR. KIRSCHENMANN: Okay. That helps, thank you.

143

MR. CARLIN: Were you here earlier when we had our friend from the UK?

MR. LUSBY: Yes, sir.

MR. CARLIN: Any reaction or comment?

MR. LUSBY: I think it would be a grand thing if we could generate electrical power from manure -- I mean, from poultry litter and swine litter in places where we have too much of it where it's economically viable. To me, that's a grand thing. That solves our problem. It doesn't create one in my mind.

MR. CARLIN: On the swine manure issue, can you give us any encouragement as to whether you see real progress coming in terms of how to deal with that volume as well as the smell?

MR. LUSBY: I think to me where that fits better is probably in states like Iowa where those are built around farming country where you grow corn, you grow other crops and you have a high phosphorus requirement and you can till that right into the ground. That helps solve the odor issue right away and those crops are much more conducive to using swine litter or even poultry litter than grass is because they require more phosphorus. And again, you can incorporate that

144

directly into the ground because you're farming it. It's probably going to be more problematic in areas where we, you know, would have to rely totally on pasture systems as a way to utilize it.

MR. CARLIN: Bernie?

MR. ROLLIN: How do you envision the future of Arkansas' agriculture economy if the price of grain soars? It sounds like the entire system is built on that little fulcrum.

MR. LUSBY: Well, not really. If you look at that map of Arkansas in the Delta, they grow a lot of cotton, they grow a lot of rice, about a million acres of wheat and nobody knows how much corn we can grow. I think we're about to find out, so in those areas I think they're going to deal with this very well. The cattle industry, again, I think we'll grow more pounds of cattle on grass and get more gain from that way before they

go to the feed yard. With poultry and swine it will be yet to be determined. They don't have any way yet to really offset those impacts. Ultimately, we'll produce enough less to generate enough price to make it feasible for those in the business to stay in the business.

MR. ROLLIN: Thank you.

145

MR. CARLIN: Alan?

MR. GOLDBERG: Our charge is to sort of look at the impact of concentrated animal farming on public health and the environment, rural communities, animal welfare. The kind of presentation that we're beginning to hear is saying that the poultry industry has no problems, our waste is taken care of, not only is it taken care of, it has a useful output. We're creating another industry, the cattle industry. We're feeding people exceptionally cheaply with a high-quality protein. What are the problems?

MR. LUSBY: Well, I think largely what you said, you know, is the case. I think the problems we have to deal with are we have a lot more people in this country every year taking up more land. We're going to have to do this on less land. We're going to have to share the water resources a lot more with those folks. Every one of them that comes up here wants to build around Beaver Lake, and so there's going to be a lot more people watching us and we're going to have to do a much better job.

We're going to have to minimize the impact that we have on the environment, but I

146

think the demand is still going to be there to produce in this case the beef and pork and poultry at a price that most everybody can afford. They are demanding that we pay more attention to how we take care of these animals. They are demanding a greater voice in what we put into them and you see in all these industries, you know, the cattle, multi source age verification, they're demanding and they have a right to know how these animals are raised and what we put into them, so the management is going to be just that much more important.

MR. CARLIN: Earlier we had a couple presenters in terms of the environment as it relates to water quality and so forth. Do you have any comment in regard to that, or suggestions?

MR. LUSBY: Well, I think, again, I talked to friends that I work with that, you know, work in the water quality area, which is one of the reasons I put up the slide that said there are a lot of other things that impact these -- impact water other than just poultry and livestock. But it's going to be incumbent on us to demonstrate what the effects are and to come up with better systems, how we can raise cattle better, to have better

buffer zones, and that's why the university just started -- you may have seen the sign that says watershed research and education center, which is going to be built right in town, so we can not only do research there but educate the urban dwellers, as well.

There are a lot of things, you can find streams, spring fed streams, right around here that have moss in them all summer and the only thing they drained is a subdivision. It might be a little parochial, you know, the department of animal science, for example, but, you know, the cattle industry, the poultry industry need to be able to point out that we're not the only ones doing some things and we need to be good stewards, but we're going to have to make the other folks do it, too. And that may mean that someone goes down to Lowe's, maybe needs a soil test and it tells them how much fertilizer, how much ammonia nitrate that they can put on their front yard.

If they've got grubs, can they go put anything they want in there to kill those grubs? Well, that water, it's going down here in Beaver Lake and, you know, that's where this came from

and I would kind of be interested in that because I drink it, too.

MR. CARLIN: Where did we get this?

MR. LUSBY: Hot Springs, I think.

MR. CARLIN: An earlier speaker made reference to the state of Missouri not exactly managing their water resources very well. How do you feel about the state of Arkansas?

MR. LUSBY: I think the water resources here are managed very well. I think you've got the head of the Arkansas Natural Resources Commission, I think, is due to speak here. And again, I think you look at 50 years of history here, I mean, there's certainly some things we can do

better and things we know to do better, but I think Arkansas has been one of the leaders in developing best management practices for the application of poultry litter, you know, Regulation 5 for application of swine waste. You know, I think if you look at the way things are handled in Arkansas, we've been more in front than we have playing follow the leader.

MR. CARLIN: We had a gentleman from Oklahoma earlier say that something was coming out of Arkansas that wasn't as good as he had

hoped it would be, so we've got a little bit left to work on.

MR. LUSBY: Yes sir.

MR. CARLIN: Thank you very much.

MR. LUSBY: Thank you.