



Season 3 Episode 7 – Nutrients from Poultry Litter

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Announcer:

The Alabama Crops Report Podcast, your trusted information source for Alabama agriculture.

Amanda Strayer-Scherer:

Hello everyone, and welcome in to the Alabama Crops Report podcast. I'm Dr. Amanda Scherer, an extension plant pathologist, one of your hosts today. And our other host is Dr. Scott Graham. An extension entomologist. How are you doing, Scott?

Scott Graham:

I'm good, Amanda. How are you doing?

Amanda Strayer-Scherer:

Doing good. Enjoying some of this nice weather. You know, it's May 1st as we're recording today, planting seasons in full swing really for a lot of crops and is already in the ground. So today we actually have our A guess for the first time. Kent Stanford, he is an associate extension professor and extension specialist focused on nutrient management. He's actually located at the Sand Mountain Research and Extension Center in Crossville, Alabama.

Amanda Strayer-Scherer:

How are you doing today, Kent?

Kent Stanford:

I'm doing great. Happy to be on with.

Amanda Strayer-Scherer:

And as I mentioned, since you're a first-time guest, we kind of put you in the hot seat a little bit and let our listeners kind of get to know you and we ask you to kind of provide a fun fact about yourself.

Kent Stanford:

Sure. Well, I'm originally from Pineapple, Alabama, down in south Alabama, East Wilcox County. And I guess the fun fact about me today would be that I'm an auctioneer also on the side. And I say on the side, I do benefit options help out some youth programs, benefit options, things like that as part of my community service. So I'm happy to be on today and look forward.

Amanda Strayer-Scherer:

We're happy to have you and hopefully you don't talk too fast with your auctioneer background there, but I think you'll do just fine. I don't know how much you've listened to our podcasts so far over the last couple seasons, but we've actually had Dr. Rishi Prasad on previously to talk about some of his research on how real crop producers can use poultry litter and grow crops. And I know that's your main topic that you want to discuss today, but for some of our new listeners that may not really be aware of some of that previous research, can you just first give us some general background information on what exactly is poultry litter, poultry litter?

Kent Stanford:

And primarily, we would be talking about broader litter coming out of the the houses where they're raised in these birds for consumption. That litters typically go on to be about a 33 to nutrient content. That's kind of the book value that we go with. And over the last several years and when I say savvy is probably the last ten years, we've seen a dramatic increase and maybe shift in the use of litter with much more litter going on to grow crop production fields where in the past, traditionally the vast majority of it would be going on pastures and hayfield on forage crops.

And so over the course of time, a lot of these growers that have used litter have seen the long term benefits of its use. And that combined with high fertilizer prices have really driven up demand on litter. So as we talk through things today, I'll try to address some of the practical consideration options for folks to be aware of, especially for those that are maybe considering its use for the first time.

Amanda Strayer-Scherer:

So kind of following up on that last statement, there, you just want to give us a general update on poultry litter as a fertilizer option for this spring and for producers using it the first time.

Kent Stanford:

There's there's a lot of advantages to using litter. I mean, obviously, they're buying it primarily for the nutrient content. And we get focus there and it's easy to put dollar values on that from a nutrient content. But I think over the course of time, we probably don't talk enough about all these additional benefits that we receive. Obviously, we're applying organic matter, so we see an increase in soil organic matter content, an increase in microbial activity that higher organic matter content helps with water holding capacity and availability on these cells.

So all these other benefits are harder to put a dollar figure on but for those guys that are in the business longer term, they certainly start to reap the benefits, especially in year three, four and five after that initial application. But a lot of people don't realize that even though we've got lots of poultry production in our state and really in the vast majority of our state, there's a lot of litter in houses, but that doesn't mean it's available always the week that the guys need it.

So one of the big headaches then this is actually logistics. Having a supplier lined up, knowing where it's coming from, knowing when it will be available, trying to coordinate that crop needs. And that's probably one of the most significant challenges with it. The other point would be that if you're accustomed to spreading commercial fertilizer, application rates, they're going to be in pounds per acre.

But with a litter application, the application rate is going to be much higher. We're talking about tons per acre. Typically two to three times might be a right that we would say in row crop production. So we've got to move a lot more of it. It's more time consuming because of the higher rates. So that requires a whole lot more coordination for those growers.

Scott Graham:

How does it vary from year to year in terms of how much nutrients you're getting out of it?

Kent Stanford:

All right. So that's a great question. And I guess the way I would describe it and this kind of follows up with the research that Dr. Prasad is doing that we see coming out of his lab. The P and K is going to be available that first year, and it will certainly build in the soil. What we typically would see or what we would encourage guys to think about would be on the nitrogen side of things, because we have so many people that are doing a fantastic job with notill.

They're making a broadcast application on the surface. We're not incorporating this into into the soil. So we do have more nitrogen loss to evolve civilization. I would typically tell guys to count on about 50% of that available nitrogen in the first year and then a smaller percentage moving forward. I think it's critical that these guys understand nutrient management, that they've got a solid nutrient management plan, and they talk through that they understand where they are as far as, you know, their soil at a current soil test report to understand what they need. But it's certainly a very very valid option for many growers across the state.

Scott Graham:

And you said 50% the first year and then last after that. Now, does that mean we apply that every year that correct?

Kent Stanford:

Right. So if you were working through your nutrient management plan and let's just say that based on your timing if you're not an early season planning kind of guy, if you're planning later and the soil temperatures have warmed up and then you've got, you know, hour, hour and bit temperatures are much warmer. We're going to see an increase involved, analyzation.

Right. And so if we if we lost 50% of it excuse me, if we had 50% of it available in that first year, and then we had a loss there and we will have some amount of loss, it's highly variable depending upon lots of different reasons there. But in year two, three and four where we would say very small percentages or amounts, but you would have some that would become available over time as mineralization occurs.

You really have to get down to the steel level almost at that point, I think to do a very accurate job of trying to understand exactly how much might be available long term. And along those same lines. One of the biggest challenges with litter is that the nutrient availability and through some adaptive facades restarts and the work that he's done.

We've seen a wide range of of nutrient content as we evaluate litter. So we might be using a book value of 3 3 2 on N, P, and K, but in actuality it could vary quite a bit from there. So we certainly would recommend that people get any litter that they are considering purchasing and get it tested, get a sample run so you can determine exactly what you're buying and get the correct application rate.

Scott Graham:

And you can, you can send those samples to us, or our extension, correct?

Kent Stanford:

That's right. We would like to get those samples whenever possible. That can be run through Dr. Prasad's lab, a study, a high tech lab that he runs things through. And also you can send that to the soil test and lab and get a manure analysis or fertilizer content or fertilizer analysis run through the lab there at Alpha Services Building as well.

Scott Graham:

Or there any particular crops that respond better or worse to poultry litter or they all pretty much the same or.

Kent Stanford:

It's a great question in the way I would what answer it would be like this. It's so dependent upon the field and the soil and what you're starting out with. That's one of the discussions that I have with these growers. Sometimes as know it might mean more work to a grower that's got some low, lowly fertile soil that has some pretty sorry ground that are trying to work on.

Kent Stanford:

It might be higher value to him because he might see a greater increase, yield increase versus a grower that's doing a really good job or he's got some really good ground that that the fertility is pretty high down. So it's a tough question to ask. It's hard to make a generalization on that. Frequently, what we are seeing, especially in north Alabama, are some of the folks that are going out and use and litter and no commercial fertilizer on soybeans, you know, used to work pretty well in that system.

And they're getting by with with no additional fertilizer, commercial fertilizer, or in some cases. So it's highly dependent, I think, Dr. Graham, upon the field and and the crop to be able to really decide what's the best for you.

Amanda Strayer-Scherer:

Is there any specific, like best management practices in terms of tillage practices and other issues that may or cover crops that may affect, you know, the ability of poultry litter to really be a good option?

Kent Stanford:

Yeah. So I guess I would address the question this way. That the best management practices that that I see are most critical. We'll start with with transportation and storage maybe before it's applied So because of the consideration of being able to get it when you can, sourcing it when you can. Some people may need to do temporary sale storage, and that is an approved best management practice.

And NRC has a practice in place to help with that or to explain the ins and outs of it. But I tell guys to buy it when you can store it properly, which includes covering it up. You want to pick a well drying site so you're not trying to get on any wet or ground. You want to get a well drying site and cover it up.

It takes a little work to do that, but then you've got it staged in that sale, ready to go so you can get your application timing done when you need it, particularly as you approach planning time. So I think the storage bump is very critical there as far as the application goes at that point then. One of the most important things we need to understand is that we do have rules and regulations that that determine where you can apply.

And so buffers and setbacks must be observed when making any application of animal manure. And we want to be sure that we follow those buffers and set backs. That includes 25 feet of property lines, 50 feet on either side of a water source. There are some other buffers and all those are available on our website at ICES Dot Edu, the future search for nature management.

And so it's important that those growers understand what those buffers and setbacks are and what the spreadable acres then are for each field. So they've got those calculated and I make sure they're not applying in the wrong places. Once we get that done. It really comes down to the timing of that application and the nurses management standard. Fabiani says they're that no no nitrogen source issue that should be applied more than 30 days prior to the planned planting date. And that fits right with dot facade research that is showing where most of that nitrogen is going to be available from that litter application. So those would be the main points, I think going to be impacts.

Scott Graham:

You've hit on a couple of columns about, you know, trying to source it, find that that kind of stuff. What's availability looking like so far this year?

Kent Stanford:

Again, I guess I would say it, it depends. So Let me let me answer the question this way. The growers that are in the poultry, the contract poultry business, many of them are on a clean out schedule that may involve several years between clean outs. And so it might seem somewhat random when they would be cleaning out. And so they're primarily concerned, obviously, with growing other birds and secondarily with, you know, trying to clean out houses and deal with litter.

So what I suggest to people is talk to any growers around you. If you're trying to show off directly from a grower, if there is a vendor that is a spreading litter or a vendor that is hauling litter, that is, you know, kind of the Go-Between guy, the middlemen reach out to those folks. Well, in advance, there's a lot of litter that is produced and is available, but unfortunately, everybody kind of wants it at the same time.

And so you need to get on the list early enough that you're closer to the top of the list. Many years ago, we used to think that we couldn't hold it very far. But when fertilizer prices start hit \$1,000 a tonne or so, we realized that we can afford to move it. And especially for those growers that have lower quality, sole and need that, that benefit of the organic matter makes a lot of sense to be able to move.

Amanda Strayer-Scherer:

You mentioned cost there of, you know, the more traditional commercialized fertilizers You know, we've seen, you know, huge price increases, especially the last couple of years. How would poultry litter kind of compare for cost wise? I mean, you mentioned all the additional benefits, but a direct cost to producers.

Kent Stanford:

Yeah, I think we frequently get that question, you know, where someone will say what's what's it worth you know, what's litter worth? And so we can make that comparison very easily between an average book value and commercial fertilizer prices. If you had to go buy those same nutrients as commercial fertilizer. And and when we do that, that's the number that gets everyone's attention.

So right now, that number, you know, those nutrients and that ton of litter, probably just over \$100 a time. There's a couple of different ways to calculate that, but we value all of those those nutrients, all of that impact. You know, let's just say it's worth \$100 a ton for our purposes today. Well, I doubt very seriously anybody's paying \$100 a ton for any litter.

If so, that's a world record and we would get lots of attention. In actuality, they're probably paying more like 50 or \$60 a ton as a spread price. And maybe that is litter. That's been how some distance I mean, obviously that's a field still cost a lot. So there's some added cost or some increased cost on transportation. So if you can buy it for \$50 a tonne and the nutrients are worth \$100 a ton.

There you go. You've just got a 50% savings and then we haven't even talked about the micro nutrients as well as what you might be seeing on the organic matter. Side, so that the financial piece is, is very important. I would say generally speaking litter is, is going to be priced at, at a third to a half of what the nutrient content might be valued at compared to commercial prices.

Scott Graham:

Well that sounds like a especially, you know, in the last couple of years we've experienced that sounds like a pretty good deal.

Kent Stanford:

It really is. And again, I think that the guys that use it for multiple years, they start to see after about that third year, they start to see some significant yield increases and frequently will have someone to share with me that after three years or so of using litter, they may be saying ten to 12 bushel increase on soybeans.

Well, you know, that starts to add up obviously very quickly. And so that's why we encourage guys to have a long term plan. Think about the fields that they are farming and especially on rented land, how many years they're going to be farming that and try to try to use that litter where they're going to get the greatest impact.

You know, if that's on some land that they own, obviously, maybe that that would take priority over rented land. And then those fields that are lovely, fertile, that we're trying to build some soil fertility and build organic matter. And that's probably where you'll see the most bang.

Scott Graham:

This may show my lack of of knowledge on the topic, but as far as spreading it or using a similar rig that folks are using, spreading you normal fertilizer, or is it something different or are these farmers doing it themselves or are they contracting it out through their co-ops? Or retail?

Kent Stanford:

Or what you're seeing there is there's probably not a retail farm supply store that's got a poultry litter spreader. So they are it is the same design or similar design. It's got a water track in there. And so they are specifically designed for spreading litter. So you would have to have one for that. What we've seen really over the last ten years is an increase in the number of farmers that have their own spreaders.

Some have built larger spreaders than than what they could get back commercially. But there's some some really good manufacturers out there that put out a quality product. Part of the reason I think many of the farmers are investing in their own spreaders is they've learned that that if they've got it stored onsite and they have their own spread or they can get the application timing down that works for them and they're not dependent upon someone else to come in.

But there are people out there that do this for a living, that clean out houses, that how litter some, that just transport litter, some that just spread litter. So there's a there's a significant number of people out there that offer those services.

Scott Graham:

Sounds like an investment that can pay for itself pretty quick, especially when you consider the logistics of trying to go out and sort to the letter. And then, you know, if everybody's trying to spread the same path, you can spread it yourself. That probably pays for pretty quick.

Kent Stanford:

Absolutely. And for a lot of the guys that are accustomed to having larger equipment, that have large tractors, you know, they can pull spreaders that whole lots of times. So, for instance, maybe the standard spreader truck that most poultry farmers might have would have a 14 or 16 foot bed that would hold five or six times a litter.

Well, the roe crop guys might get a tag along a buggy style spreader that would hold ten tons. So they can increase the size of the spreader because they've got something big enough to pull it. And then they can get across maybe some wetter ground because they've got factors that will handle that better than a truck would.

So I'm seeing an increase, I think, in the number of guys that are handling their own at this point.

Amanda Strayer-Scherer:

It really sounds like if they can get it when it's available and just store it and then spread it themselves, they'll see a really great benefit there. You know, this has been a really great podcast episode. I think our listeners got a lot of good information do you have any final words of wisdom, you know, going into 20, 23?

Kent Stanford:

Well, I think at this point, I mean, obviously we're kind of in the middle of planning, I guess on May, the first soap for those guys that maybe have not been able to get it sourced for this year and they realize it's something they want to do in advance. Go ahead and have those conversations, you know, and be thinking ahead.

This is a, is a great product, lots of it available, but it does require a lot of planning ahead well in advance and then developing those relationships with the suppliers. The final point that that would leave our listeners where there's this it's also important to understand that those rules and regulations are there to protect you as the landowner and the guy that's doing the the spreading as we make every effort to protect water quality.

And so neighborly relations are important. And so thinking about the timing of those applications, I always tell people, avoid those weekends before the neighbor has a wedding in their backyard, for instance. We still want to be good neighbors to those around us. But at the same time, it's an opportunity for us to have discussions with them about the practices that we're doing on our place.

And so anybody has any questions, they're welcome to get on our website at aces.edu and look for Notre Management there's some record keeping forms down there now, so search for me on Kent Stanford and you're welcome to reach out to me and be happy and helping one I can.

Scott Graham:

All right. Well, thank you very much. Appreciate that information. Again, we'd like to thank all of our listeners for listening to every episode. And if you have any topics you'd like to hear us to discuss, please reach out and let us know and care for anything else. Of course. Please don't hesitate to let us know if we can help in any way possible. So be looking for another episode soon.

Announcer:

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