



*Where the subject may be perishable
but the insight isn't.*

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Alfalfa Seed Company, FDA, USDA And Supporting Cast Comment On Seed Withdrawal

Jim Prevor's Perishable Pundit, May 12, 2009

The alfalfa sprout industry is operating under an FDA [recommendation not to consume](#) since April 26, 2009. We discussed this issue in a piece titled [Insights On The Alfalfa Sprout Advisory](#).

Then the FDA issued as "[Alert](#)," identifying an epidemiological link between a specific seed supplier and the outbreak. We asked Pundit Investigator and Special Projects Editor Mira Slott to find out more:



Lyle Orwig
spokesperson
[Caudill Seed Company](#)
Louisville, Kentucky

Q: FDA says the preliminary epidemiology ties the alfalfa salmonella outbreak to Caudill seeds. What can you tell us?

A: The seeds have been implicated but there is no proof. While the seeds are said to be epidemiologically linked, FDA hasn't been able to conclusively tie the source of the salmonella in the sprouts back to where it actually occurred. FDA would need an exact fingerprint serotype match, but it has no confirmed test.

From the seed company perspective, we encourage all sprouters to follow FDA food safety guidance. Back in '99, they did all that work to establish best practices. If the seeds are treated with recommended soaking chemical and the sprouters do that and test and hold, we wouldn't be talking about this problem now. Not everyone tests and holds.

Q: Are food safety measures conducted at the seed level? Does the seed company hold some

responsibility here? On your website, it says all of the alfalfa sprouting seed provided by Caudill has been tested for germination, purity and absence of salmonella and E coli. How does that work?

*A: We sell a raw agricultural product. What that means is that the alfalfa seed is either put into the ground to grow, or the sprouter will use it to produce edible product. It can be the same seed. Part of the seed industry law, in and of itself, is that when we sell, there's a **seed tag** that shows what the germination is of that bag of seed, as well as the purity and process it has gone through. This is part of the federal law we follow that has to go on every bag we send out. When we buy seed, it's sorted, tested and bagged and when it's bagged and the tag goes on it, we've followed our legal duty. Then it's the sprouter's responsibility.*

Q: What percentage of the alfalfa sprouting seeds is actually tested? Is the testing you're doing statistically adequate to ascertain whether salmonella is in these seeds?

A: When we buy alfalfa sprouting seed, we take samples for a control lot, we grow alfalfa sprouting seed for 48 hours, but instead of following FDA guidance — say 25 million parts of chlorine to kill pathogens — we don't do that, we just use water because if there is a pathogen we want to find it. If the seed is contaminated we don't use it for commerce.

There is no such thing as pathogen-free anything. It's like saying I washed my hands so why did I get a cold? Like growers that are doing things correctly, we're testing the water, so if a pathogen is in that seed lot, it should come out in the irrigation water, tested and found, but there is no perfection in seeds or in finding salmonella in testing.

It's a fact of life; you'll never have the certainty of 100 percent pathogen-free seeds.

A sprouter would grow in a different medium than feed for animals where the seed goes in the ground to grow as hay to feed to cows. If I'm a sprouter, I'm sprouting in a medium to get the sprouts, washing that medium away and keeping the sprouts. These are two completely different processes.

The problem is you grow sprouts in a water-based media, usually a cold water base, which is the same grade for growing bacteria. That is why you need chlorine washing. At the same time you have to be careful because you're dealing with a delicate product, and food safety measures can negatively impact the quality.

Q: If the salmonella contamination was isolated to an individual sprouter, the source of salmonella could have come from the plant, or from not following proper guidelines and testing. The reason FDA got involved was because there were different sprouters in various parts of the country connected to the outbreak, with the common link traced back to an Italian seed lot.

A: Look at the hundreds and hundreds of tests we did when FDA found this. FDA came to the Caudill property and went through seed lots, took thousands of samples, going through all the equipment, and couldn't find Salmonella Saintpaul in any of our facilities, product, or seed — nowhere.

Q: If numerous sprouters in different states weren't able to kill the pathogen through their food safety measures, what does this signify?

A: There were different sprout processors involved, but only three different ones where the sicknesses were connected, and they all used the same seed that came from us and traced back to that one lot. There were also many, many other processors that received seeds from that same lot that had no illnesses.

Q: Do you concentrate your buying with particular growers? How complex is it to trace back a problem?

A: We buy seeds from around the world, we bring them in, clean them, test them and distribute and sell them to sprouters or other seed companies or farmers wanting to grow alfalfa. We're a major supplier to the sprouting industry.

We purchase primarily from Italy and Canada. These seeds in lot 032 come from Italy. When we sell that lot to any sprouting company, we know who got that seed, so when they sell those seeds

to a retailer or foodservice company they know where the lot came from. The people that ate sprouts and got ill in various states told investigators where they purchased them. Each of those batches at the different places had certain numbers, and the common denominator was that they all came from lot 032, which is our coding for Italy.

Q: Did all the seeds in lot 032 come from one particular grower, or several? Could a grower blend seeds? Do you ever mix seeds from different lots, or growers?

How does this affect traceback capabilities? Do you have a way to narrow down with lot 032 what farm the seeds in question came from, what row?

A: I was able to get in touch with my technical guy. We can trace the seed back to the individual farmers and fields in Italy. There are six digits in the lot numbers. Everything with 032 comes from Italy, and the next numbers say which farms and which fields. What we're looking at is all seeds from Italy.

As far as blending of seed, in order to get a full container of product, some times the production of two or more fields or producers will be combined. But that doesn't alter our ability to trace back to those two or three farms.

Q: To what degree, if any, do you have control over the growers and the conditions under which product will be grown? Are you using any preventive measures to insure good agricultural practices are being followed? Do you test specific fields and conduct regular audits?

A: We do inspections, but I can't tell you how often. We don't do audits.

Q: Have you conducted inspections of the farms connected to this seed lot in Italy?

A: We have not yet visited the production area in Italy associated with this problem; that was planned for this month, but will not happen now because of the time commitment to this issue. However, since our supplier is a well known alfalfa sprout seed grower for the European market, we know they have a good understanding of our criteria for seed production

Q: Has the Italian equivalent of FDA gotten involved?

A: Yes. The Italian authorities have been contacted and are working with our supplier and the FDA.

There are different regulations in every country, but our standards are the same no matter where we buy the seed. We have good relations with all growers that grow alfalfa sprouting seed because it's such a unique need, and yes there are specific guidelines when we work with them.

Q: What are those guidelines? And are they specific to your company, or do you follow the guidelines of GAP and those of other countries such as GlobalGAP?

A: We have our own [criteria](#), which involves among other things a level and well-drained field — we don't want moisture sitting there; no animal manure that can be used on the field, and no grazing six months prior to harvest. Criteria are based on all the work done on GAPs for seed growing. Most of our growers are also certified organic growers, whether in Italy, Australia, Canada or the U.S.

Q: Being certified organic is based on a particular set of requirements, but doesn't necessarily guarantee food safety practices are being followed. You say you don't conduct audits of your growers, so what verification methods do you employ?

A: We ask them to certify the processes we ask for. It's self-compliance. We have a [contract](#) that we sign with our sprouting alfalfa growers and processors. The different standards between seed for food consumption and seed for feed production or non-human uses is in the areas of purity, cleaning out trucks, harvesters, etc.

In order to have certified USDA seed you need to follow GAPs. Any seed that is grown, whether growing corn for use with cattle or for human consumption, still has to be certified with a seed tag. If I grow alfalfa sprouting seed to sell to a sprouter, it has to be grown using GAP. If I grow alfalfa seed to sell to grow alfalfa for cattle feed, if I want it USDA-certified with that tag, I have to follow the rules for USDA certification.

[EDITOR'S NOTE: Despite strenuous effort we have been unable to identify a USDA "Certified Seed" program that had anything to do with alfalfa or food safety. Despite repeated requests Caudill Seed Company was unable to provide any website or other evidence that such a program exists. See interviews with USDA officials below to learn more].

Q: I didn't think there was a USDA requirement, legal or otherwise for seed growers to follow GAPs, especially related to food safety.

A: There certainly is this kind of monitoring going on with us for alfalfa sprouting seed growers and processors. They have particular cleaning procedures they must follow, and there can be no feed lots adjacent to seed fields. When delivering seed to the processor, they must clean out any contamination in the trucks, and then there is a whole list of FDA guidelines to follow for processing, rodent control, etc.

There are USDA general agriculture practices for any seed company, food or non-food. There is a whole list of GAPs for producing seed for food consumption separate from producing for corn, or feeding alfalfa to animals. USDA has different requirements for farm animals and food consumption. Our criteria are what we do as a company for seed grown for human food. I can't speak for other alfalfa seed sellers on their protocol.

[EDITOR'S NOTE: Once again, despite many attempts on our part we have not been able to identify any regulations from FDA or USDA, much less both agencies that would be relevant to food safety standards for this Italian-grown alfalfa seed. We also find no distinction in the laws or regulations requiring only specially grown seeds to be used for human consumption. Despite numerous requests, Caudill Seed Company was unable to provide us with websites or other references substantiating these claims. See interviews with USDA officials below].

Q: FDA says Caudill made the decision to voluntarily withdraw from the market all the alfalfa seeds bearing six digit lot numbers that start with 032. Why a withdrawal and not a recall? What is the difference? Does a recall have a greater legal obligation, where Caudill would be agreeing to pay for companies to ship back and dispose of product, etc.?

A: The biggest difference between a recall and withdrawal is that a recall is a request from FDA because they have discovered an adulterated product. A market withdrawal is voluntary, as this one is because there is no proof, only suspicion. It is a significant difference. There is no proof; there are only problems and suspicion.

They have to have scientific proof to have a recall. There has to be an exact match. There are multiple strains of salmonella. In this instance, the only way you should have a recall is if it traces back the exact fingerprint of Salmonella Saintpaul. To justify a recall you have to have an exact match from the sick person to the seeds or product, otherwise it's just suspicion.

Q: But a recall is also voluntary. FDA has certain limitations in what it can mandate. In this case, FDA **alerted** retailers, restaurateurs and personnel at other foodservice facilities that they should ask their suppliers to verify that the alfalfa sprouts or seeds being provided do not come from an affected lot before buying or serving them. Is it just FDA saying this? Caudill is withdrawing all seed in the lot, but not advising all customers to send it back?

A: I am not an attorney, but I can tell you that we do follow FDA recommendations, so we would be saying the same things. Our attorney responded to the question this way:

"Recall" is defined at 21 CFR 7.3(g) as a firm's removal or collection of a marketed product that FDA considers to be in violation of law. The definition makes perfectly clear that a "recall does not include a market withdrawal"

The regulations go on to define "market withdrawal" (21 CFR 7.3(j)) as a firm's removal or correction of a distributed product that (1) involves a "minor violation" that would not be subject to legal action by FDA or (2) that involves no violation and constitutes a normal practice, e.g., a stock rotation. In the case at hand, FDA has not concluded that Caudill Seed's seeds constitute a violative product under the FDC Act. Nevertheless, because of the sprout outbreak and because sprouters may have failed to adequately disinfect Caudill Seed's seed (a raw agricultural

product), Caudill Seed felt that it was in the public interest to remove seed from the market that had been used to grow the sprout products implicated in the Salmonella outbreak. This was an entirely voluntary action on the part of Caudill Seed and was not requested by FDA and was not based on a conclusion by FDA that the seed was “violative” of FDA’s laws.

In sum, to be clear, the difference between a recall and a market withdrawal is clearly spelled out in FDA’s regulations and depends on whether FDA has concluded that the product at issue constitutes a serious violation of law. In the case at hand, FDA has made no such decision with respect to Caudill Seed’s seed.

The problem is that we are producing raw agricultural product that will have pathogens in it. We know that going in and we are trying to minimize it to zero the best we can. Most seed is grown with irrigation of some kind. If growing with irrigation -- same as anything else — if a coyote goes through and does business through your field, and you comb through that product and it breaks into a million pieces and goes into a seed lot, and that feces has salmonella, it’s infested that whole seed lot.

By the steps we take, we hope to mitigate these problems, but sometimes they happen. On our product labels, no one goes as far as we do to say here is our raw product and these are the things you should know.

Lyle Orwig genuinely tried to help us and we appreciate it. However, he works for a prominent PR agency, [Charleston/Orwig](#), and it is difficult to be both an expert on public relations and an expert on seed and food safety. We are all in favor of hiring professionals but we consistently find it a mistake to simply abandon the job of representing your company to PR professionals. Far more effective is utilizing outside agencies to coordinate interviews and to arrange for your own people, genuine experts in what they do, to talk to the press.

As a result of this “knowledge gap” there are several points made in the interview we question. We noted a couple with editor’s notes and left a few for readers to draw what conclusions they will. We did find seven points especially worth discussing:

1) Innuendo or Accusation?

If the seeds are treated with a recommended soaking chemical and the sprouters do that and test and hold, we wouldn’t be talking about this problem now. Not everyone tests and holds.

This is left to hang as a kind of innuendo. Are there specific customers that Caudill Seed knows are not following FDA recommendations? Why do they continue selling them? And if Caudill Seed doesn’t know of any customers not following FDA recommended procedure, why would it make statements of this nature, implicitly condemning members of its own customer base?

2) A Law or a Wish?

When we buy seed, it’s sorted, tested and bagged and when it’s bagged and the tag goes on it, we’ve followed our legal duty. Then it’s the sprouter’s responsibility.

Although we are not aware of a court case in which this claim has been tested, we doubt it is true as a matter of law. Products generally carry a warranty of suitability for the purpose intended. If a seed company sells to a sprouter, it knows this food is intended for human consumption. One day some sprouter put out of business due to an outbreak will sue the seed supplier and we will see what the outcome is.

3) Beware of Non-Quantified Testing

Q: What percentage of the alfalfa sprouting seeds is actually tested? Is the testing you’re doing statistically adequate to ascertain whether salmonella is in these seeds?

A: When we buy alfalfa sprouting seed, we take samples for a control lot, we grow alfalfa sprouting seed for 48 hours, but instead of following FDA guidance — say 25 million parts of chlorine to kill pathogens — we don’t do that, we just use water because if there is a pathogen

we want to find it. If the seed is contaminated we don't use it for commerce.

We find this often. Lots of people do testing, but when asked exactly how much, they grow silent. We did a substantial piece on finished product testing [here](#). One of the key insights is that testing must be done with great frequency to be statistically meaningful. To publically talk about one's testing regimen but not quantify it borders on being deceptive.

4) Equal Opportunity Pathogens

There is no such thing as pathogen-free anything. It's like saying I washed my hands so why did I get a cold? Like growers that are doing things correctly, we're testing the water, so if a pathogen is in that seed lot, it should come out in the irrigation water, tested and found, but there is no perfection in seeds or in finding salmonella in testing.

It's a fact of life; you'll never have the certainty of 100 percent pathogen-free seeds.

We found this interesting, mostly because just a few paragraphs earlier Mr. Orwig was less generous to the sprouters. In relationship to them, he said this:

If the seeds are treated with a recommended soaking chemical and the sprouters do that and test and hold, we wouldn't be talking about this problem now. Not everyone tests and holds.

It seems that just as 100% pathogen-free seeds can't be guaranteed, the same goes for sprouts — which is why we would think that a concerted effort to minimize pathogens at every stage of the process would be useful and advisable.

5) Food Safety and The Black Swan

Q: If the salmonella contamination was isolated to an individual sprouter, the source of salmonella could have come from the plant, or from not following proper guidelines and testing. The reason FDA got involved was because there were different sprouters in various parts of the country connected to the outbreak, with the common link traced back to an Italian seed lot.

A: Look at the hundreds and hundreds of tests we did when FDA found this. FDA came to the Caudill property and went through seed lots, took thousands of samples, going through all the equipment, and couldn't find Salmonella Saintpaul in any of our facilities, product, or seed — nowhere.

We understand the frustration executives at Caudill must feel in this situation. As was mentioned in a letter from Primus that we featured in a piece [here](#), these are **Black Swan** events. They have enormous impact but are so rare that they go beyond any normal range of expectation. It is only after the fact that we can say that if we can rationalize the event and say that had we followed X and Y procedures, the event wouldn't have happened.

As a result the FDA testing means little. It doesn't mean the Caudill seed wasn't at fault — and, by the way, despite popular assumptions, a positive test result would not have proven that Caudill seed was at fault either. These results just increase or decrease the likelihood of a connection.

6) Seed Blending and Traceability

As far as blending of seed, in order to get a full container of product, some times the production of two or more fields or producers will be combined. But that doesn't alter our ability to trace back to those two or three farms.

Our interview with Michael McCartney regarding traceability, which you can read [here](#), emphasized the importance of starting traceability with the seed. One doesn't have to be a traceability expert to know that if you blend seed you make traceback more complicated. Now one knows that the contaminated seeds came from one of two or three fields or farms as opposed to one. So blending seed is a really bad idea.

7) Self-Compliance for food safety or Liability Reduction?

We ask them to certify the processes we ask for. It's self-compliance. We have a [contract](#) that we sign with our sprouting alfalfa growers and processors.

We really shouldn't pick on Caudill Seed Company specifically, but this attitude is all too common up and down the food chain. Everyone puts things in contracts in hope that it will lessen liability, and food safety often focuses on getting a contract signed and acquiring proof that the counterparty has adequate insurance. If a company is really serious it either staffs up to confirm things itself or it, at least, requires a third-party verification.

Sprouts are a very tiny part of the produce industry, but they are the segment whose food safety problems go back the longest. We need to act now to clean up this segment.

Is Mr. Orwig's accusation that many sprouters are not following FDA recommendations true? If so, who is buying from these vendors? And clearly, we need to find a route by which seed is grown for human consumption with the goal of reducing pathogen contamination.

Is Mr. Orwig's accusation that many sprouters are not following FDA recommendations true? If so, who is buying from these vendors? And clearly, we need to find a route by which seed is grown for human consumption with the goal of reducing pathogen contamination.

Mira contacted FDA to get more clarity:

Sebastian Cianci, FDA spokesperson, provided the following information for our readers:

- A brief explanation of the differences between a market withdrawal and a recall can be found on FDA's website at: http://www.fda.gov/oc/po/firmrecalls/recall_defin.html.
- The references made by Caudill's attorney (21 CFR 7.3(g) and 21 CFR 7.3(j)) can be found at: http://www.access.gpo.gov/nara/cfr/waisidx_04/21cfr7_04.html
- The information in this document may also prove helpful in understanding recalls. <http://vm.cfsan.fda.gov/~lrd/recall2.html>
- Information on the outbreak can be found at <http://www.fda.gov/oc/opacom/hottopics/alfalfasprouts/>

[Editor's note: In a most telling statement, FDA [sent a letter on May 1, 2009](#) to suppliers of seeds, distributors and sprouters, pointing out the following: "As you are aware, seeds are considered the most likely source of contamination in most sprout-associated outbreaks. Therefore, it is important that sprout growers source their seeds from suppliers with an appropriate program to screen their seeds for potential contamination with pathogens."]

Mira also reached the person at USDA charged with seed regulations and testing...

Dr. Richard Payne
Chief of Seed Regulatory and Testing Branch
[Agricultural Marketing Service \(AMS\)](#)
USDA

Q: What are the USDA regulations for alfalfa seeds? What are the requirements for labeling seed, and is there a distinction between alfalfa sprouting seeds grown for human consumption and those grown for animal feed or crop use?

A: Let me start with a little background. The Federal Seed Act is a truth in labeling law:

...that regulates agriculture and vegetable seed shipped in interstate commerce. An aside is that in the Constitution, one thing the federal government regulates is interstate commerce. There are certain required pieces of information that have to be on the seed label. I'll address alfalfa.

First of all, there is no requirement for information about seed pathogens to be on the label. Some of the information that is required to be on label: Percent pure seed, percent inert matter like broken seed and pods, percent other crop seed, and percent weed seed. These are percentages based on weight. There's a specified quantity of seed to be tested for alfalfa, then physical separation for four compounds and that weighed for percentage.

Also on the label should be percent germination, and percent hard seed, which is something unique to alfalfa and clovers, and so forth. Percentage derived is based on a number, 400 are planted and a percent of normal seedlings is determined. Some product doesn't involve moisture and is called hard seed. Then the date of the test to provide the germination information.

Now for alfalfa and clovers, the tag needs to show the country or state of origin. If seed has some kind of chemical treatment, a fungicide, for example, the name and information about the chemical treatment if present on the seed. Also, the variety name, or option of variety not stated. Somehow you have to deal with designation of variety.

Also, noxious weed seeds, some are federal and some are classified by individual states. If weeds become established, they could cause problems and be expensive to kill. They need to be identified by number per pound.

The tag includes the shipper's name and address, the name of the interstate shipper and their address. There's an option here, if seed is grown in Oregon, cleaned, conditioned and bagged in Oregon, and say it's shipped to Georgia for resale in Georgia, the Oregon company could put the Georgia name provided it puts the AMS number on the label. They get that from our office.

Q: Is there any differentiation on the requirements based on the eventual use of the alfalfa seed?

A: We are just involved with covering seed shipped in interstate commerce; we don't designate or make a difference by potential use. Some states may require this but the Federal Seed Act does not. On occasion, seed of alfalfa and clovers may be inoculated with bacteria to fix nitrogen to help plants grow better. Pursuant to that, the company has to put the year and month to identify when the bacteria would not be effective. I assume something for sprouting wouldn't include this because this is for plants grown in the field.

Q: Are there other tags or regulations for alfalfa seed besides the one for interstate commerce? Is there a USDA seed certification?

A: The individual states have seed certification agencies for varietal purity. And there are certain minimum requirements and standards in the Federal Seed Act regulations that the seed programs have to meet. But this is certification for varietal purity. It usually involves field inspection and field history prior to harvest, and then after a test for purity, germination and weed seed at the state level. Now some may have additional standards and requirements above those in the Federal Seed Act that may be for germination and weed seeds. But that's the only involvement our program has in certified seed. There's also an [Association of Official Seed Certifying Agencies \(AOSCA\)](#).

Q: Caudill Seed Company says USDA has established GAPs for any seed that is grown, and these differ based on use and that these must be followed for seed certification. Is this the case?

A: The only GAPs that are written down that we're involved in would be certifying seed for varietal purity, such as different field requirements and certain isolation distances, and fields have to be inspected. There are requirements about what was grown in that particular field the earlier year, since there could be carry over from dropped seeds. Again, this pertains to varietal purity, not food safety.

Then there's the [Association of American Seed Control Officials \(AASCO\)](#)

RUSSEL, the Recommended Uniform State Seed Law, is almost identical to the Federal Seed Act, to help individual states maintain uniform state seed laws. The state seed control programs are responsible for seed produced and sold in their state, where the Federal Seed Act regulates interstate commerce, and they mesh together.

There are certain requirements that Animal Plant Health Inspection Service (APHIS) has. It is

responsible for enforcing import provisions of the Federal Seed Act, and also the federal noxious weed seed list. It will check for prohibited product. It also deals with phytosanitary certification, in the need to be free of certain pests if being imported.

I'm not familiar with requirements related to testing for pathogens like salmonella or E. coli.

From the point of view of the Federal Seed Act, it doesn't go into the usage; it addresses seed for seeding purposes. There could be states that make distinctions for sprouts. The kind of seed, alfalfa and its origin needs to go on the label, but there is nothing related to food safety at the federal level for the seeds.

You could contact Rodney Young at APHIS to get his perspective on imports and exports

The [American Seed Trade Association](#) at one time was putting out GAPs for seed companies. From time to time, it tries to come out with various good practices for their members, coming up with something seed companies can provide to retailers to help maintain quality of seed.

Mira touched base with Rodney Young to learn more...

Rodney Young
Botanist

[Animal and Plant Health Inspection Service \(APHIS\), USDA](#)

Q: Do your regulations address food safety in imported seeds?

A: APHIS is involved in the regulation of imported agricultural products. Our requirements are really not about food safety issues. These phytosanitary requirements Richard Payne is talking about would be written to prevent introduction of plant pests into the country through importation. This involves seeds for propagation. It doesn't really apply to foodborne illnesses. The USDA has an agency, the [Food Safety and Inspection Service \(FSIS\)](#), that handles food safety issues. [This is the public health agency of the USDA and deals primarily with meat, poultry and egg products].

On our side with alfalfa seed, I really don't know about distinctions for sprouting for human consumption. For years, I was dealing with imports of alfalfa seeds from Canada. The main thing we required was no noxious seeds, which is part of federal seed requirements; if a company imports alfalfa seed, it has to have a label that says what it is. These import requirements are really not that strict for seeds. When we get into phytosanitary requirements from around world, we may prohibit importation of wheat in a country because of pests, for example. Our policy is related to regulation of disease in plants.

I've looked at regulating weeds for planting purposes. I know there are cleaning procedures for planting purposes that involve mixing metal filings with the seed and running seed over magnets. In this way you could remove weed seeds from alfalfa, but it uses these metal particles for cleaning this alfalfa seed, and you could see the metal on the seeds. You wouldn't use this for sprouting purposes and I would think you would have to distinguish the seeds because they would be unfit for human consumption.

If I was going to grow sprouts in my kitchen, I would never use these seeds. For this reason, I would think there should be regulations for using alfalfa seeds for sprouts.

Finally, Mira sought clarification from the Association of Official Seed Certifying Agencies:



Chet Boruff
CEO

[Association of Official Seed Certifying Agencies \(AOSCA\)](#),

Moline, Illinois

Q: Dr. Richard Payne at the USDA provided information on federal seed regulations for interstate commerce, and what is required on labeling. Could you shed more light on the seed certification process? Does this go beyond federal law for interstate commerce? Are there different types of seed certifications based on whether the seed will be used for human consumption?

A: Dr. Payne is the best authoritative source for accuracy in terms of certifying seed. He is correct when he says it deals with purity of variety. Different seeds have different attributes and characteristics, which you can't tell just by looking at the seed. It has to be planted to ascertain if it produces the traits and outputs you want. All seed certification does is insure that the seed in the bag is the variety the buyer thinks he or she is getting.

Q: Are there any food safety measures involved in the certification process?

A: Seed certification has nothing to do with food safety; especially in the case of alfalfa sprouts where contamination may or may not have been on the seed.

Issues of food safety are just so far out of our authority.

Q: To clarify, the fact that alfalfa seeds are certified does not signify those seeds were grown with any particular food safety measures in place?

A: Yes. That is correct. When discussing the alfalfa salmonella outbreak, seed certification is such a peripheral issue that it could confuse people. The same can be said about organic certification. There are some people who argue just as strongly the other way, that organic is less safe from salmonella or E. coli. It may be that organic growers use different plant nutrients, compost or manure because they can't use certain commercial fertilizers. Some might say in doing so, there is a higher likelihood of food safety problems.

Just because something is organic, does not mean it's any safer. Organic is something to do with the process under how the crop is grown. It may have different internal characteristics because it didn't use pesticides. That doesn't say what is on the outside of that seed isn't carrying some kind of pathogens. Maybe it comes down to perception that organic food is more wholesome. I believe this is a different matter than food safety and disease and pathogen control

Q: So what does seed certification represent to a buyer?

A: Seed certification is intended to make sure the variety's purity is maintained throughout the process. That is the underlying reason. We work very closely with Dr. Payne's agency at USDA. The way it works is that for the U.S. and most developing countries around the world, seed certification is accepted business, with overall arching standards. We have representatives working in the U.S., Canada, Australia, New Zealand, Chile, and Argentina to cover counter-seasonal production. A company in Iowa that harvests in the fall can ship south and plant crop and have it back in Iowa for the spring, allowing for two seasons out of one year. That's why we have members around the globe.

Q: Is your organization paralleling the Federal Seed Act requirements in certifying seed?

A: Seed certification started back in the early 1900's. We had several companies doing certification. Then in 1919, 13 states and Canada saw the need for a standard way of doing business and got together to form this organization. We pre-date the federal seed law in the U.S., which was written in the 1930's, and the most common international seed certification program initiated after World War II.

When the government started putting together standards, it turned to AOSCA, which became a baseline for the Federal Seed Act and international certification. Over time, there have been changes and amendments, but the core standards remain the same.

Q: Has there ever been any talk about integrating food safety standards into the certification process?

A: I've been here five years now, and discussions have come up for food safety, but our focus and responsibility continues simply on insuring the right variety. Our goal is not to duplicate efforts, and there are other agencies that deal with food safety.

Q: But is the issue of food safety in the growing of alfalfa seeds being addressed? We are seeing FDA food safety guidelines for sprouting and processing operations but what about in the fields when growing alfalfa seed for human consumption? That's the crux of the issue we're trying to determine.

A: When looking at growing seeds, there is a notable distinction regarding alfalfa seed for sprouting that should be taken into account. If talking about soybeans, it probably doesn't make any difference how the seed itself is grown because it will be planted in a soil medium with other contaminants that could come about.

The issue with alfalfa seed for human consumption is that the seed itself never comes in contact with the soil. They're just sprouted in some type of growing medium, so the consumer comes into contact with the initial seed coat itself. That's the issue you're dealing with.

Q: Couldn't there be a significantly increased risk of alfalfa seed contamination in the fields from wandering animals, for example, without designating strict GAP measures for growing alfalfa sprouting seed?

A: Picturing most alfalfa seed fields, these are typically not grazed by livestock. Back to my animal science days, cows typically don't digest pure alfalfa out of the field. In this case, the plant would be cut for hay, it typically dries, and is put into a bale, or into a silage process to improve digestibility. In order to get the optimum seed for alfalfa, most of these production fields will be intensively managed as seed fields rather than used for a dual purpose, where a farmer would allow cows to graze on the field. In growing alfalfa for seed, they just wouldn't do that. I can't speak for other countries, but it would be extremely unlikely for that dual purpose approach to happen.

With our process to insure purity of variety, it begins some two years earlier. We need to know the land history so there is no contamination from one variety to the next. But as far as contamination for food safety, we have no responsibility, outside the responsibility of our given task.

Q: To clarify, buyers can be assured of the variety's purity, but the purity doesn't have anything to do with a safer end product? Does the responsibility for food safety start only after the seed is purchased then?

A: What I believe happens is the alfalfa is grown for seed, the producer has the seed available for sale and someone buys it, but the seed salesman has no idea what process it has been grown under. I don't know if one variety makes sprouting better than another; my knowledge is that there are no specific alfalfa sprouting varieties.

After the alfalfa seed is grown, we come to a fork in the road; a large amount of that seed is sold for animal feed and crop use, and a smaller percentage is used for sprouting. When we reach the fork in the road, whose responsibility is it to make sure the seed is free of any pathogens? I believe it's the purchaser growing the alfalfa sprouts. Once it leaves the seed company's custody, it is out of their control. If alfalfa sprouts do show positive proof of a pathogen, who is to say it originated from the seed or in the processing or somewhere else in the distribution chain?

Many thanks to Lyle Orwig, spokesperson for Caudill Seed Company, Sebastian Cianci, FDA spokesperson, Richard Payne, the Chief of Seed Regulatory and Testing Branch for AMS at USDA, Rodney Young at APHIS and Chet Boruff of the Association of Official Seed Certifying Agencies.
