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Addressing Wildlife Risks in Produce Production in the Central California Coast: A Grower’s Perspective

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ABSTRACT: I provide thoughts about the current situation regarding concern about wildlife contamination of leafy green crops and other agricultural products, potentially leading to food safety risks, from a grower’s perspective. I discuss development of the Leafy Green Marketing Agreement, as well as how buyers are interpreting and reacting to evidence of animals of any kind in growers’ fields. The high economic cost and added risk to growers are important factors, and scientific data to support developing regulations is often lacking.

KEY WORDS: California, E. coli, exclusion fencing, food safety, fresh produce, growers, leafy green crops, zero tolerance

INTRODUCTION
I was asked to give a grower’s perspective regarding the impact of food safety provisions on our operations and the often unintended consequences on the environment. Look up the term “caught between a rock and a hard spot” in Wikipedia and you will see “Farmers and Food Safety” as the definition!

Even though the produce industry was already well into the final stages of developing a comprehensive food safety document, the spinach outbreak in 2006 kicked the importance of that document into high gear. I volunteered to be on the committee with several food safety employees and Ph.D.s, doing my best to keep the ultimate document from overreacting to public sentiment. A grower’s perspective was essential to maintain a level of reality in the newly-unintended document that was soon to be the “covenant” of all leafy greens growing and harvesting in the State of California (a very serious and onerous responsibility that I didn’t take lightly).

Enter the Leafy Greens Marketing Agreement (LGMA), a group of handlers (first receivers of harvested product), who all signed up to accept the requirements set forth in the soon-to-be-developed food safety standards. These standards cover issues such as applied water quality, soil amendments, harvesting equipment and personnel, flooding, environmental issues, and of course the encroachment by animals and urban expansion. Remember that these standards (which were voted on by the “handlers”) are currently in place and paid for by farmers.

Although we felt that the LGMA’s ultimate document, “Commodity Specific Food Safety Guidelines for the Production and Harvest of Lettuce and Leafy Greens”, was developed using all available science and expertise at the time, there was still some hesitancy regarding acceptance on the part of both growers and buyers combined. We even hired Intertox (Intertox Inc., Seattle, WA) to research all of the scientific data that was available at the time. Intertox is a firm that has access to a multitude of research data and brought all that data to our attention. Unfortunately, a large portion of the document specifically regarding environmental assessments is based on hypothetical and possible cross-contamination theories.

Farmers were at a serious disadvantage, because we were being told (for instance) that white-tailed deer (Odocoileus virginianus) in Nebraska were known to have carried E. coli 0157:H7 in their guts, so that kept black-tailed deer (O. hemionus columbianus) in the Central Coast on the list of animals of significant risk. Was it proven that there was a remote or significant possibility of deer creating that problem in our fields? No, and more and more farmers felt that it was unfair to base a rule on “remote” possibilities. (Animals included on that list are cattle, sheep, goats, wild and domestic pigs, and deer.)

Here’s a question for you: What do these animals all have in common? They’re hoofed, and are probably the only hoofed animals besides donkeys and horses that may be in California. I say this because when animal tracks were found in our fields, food safety people would either cordon off a huge area or abandon a field because they couldn’t identify the tracks. I would point out that the track was not that of a hooved animal, but it was more than likely that of a fox or coyote. As farmers, we are forced to become detectives to salvage our crops.

What exacerbated the situation was the interjection of major buyers and their food safety personnel. It was their opinion that many of the LGMA standards didn’t go far enough, so suddenly growers were saddled with multiple levels of food safety requirements. Now, put yourselves in our shoes: you have, as a large grower, five or six differing levels of compliance. Which set do you adhere to? Obviously it has to be the strictest one, or a combination of the strictest rules. That was a difficult task to manage. Demands were being made by these buyers because they felt that “zero tolerance” was the only level of compliance that was acceptable.

Now, you and I all know that this is a mathematical impossibility, but Bill Marler of Seattle and his associates were frothing at the mouth, realizing the hundreds of millions of dollars that were easily accessible in today’s sympathetic courtrooms (especially at the cost of huge corporate restaurants and retailers, who could afford any settlement demanded upon them, right?).

OK, so now the rules are set into place, based on remote possibilities and theory. As a grower, I haven’t a
leg to stand on. Either I play the game or get off the field. It is a game of “low probability and high consequence.” In order to continue growing leafy greens on much of our farmland, we were compelled to erect 9 miles of deer fence that would also keep feral pigs and other nasty critters in the Salinas River riparian area and out of our fields. It was sad, not just because of the quarter-million-dollar price tag, but also because it drew a line in the sand for us. We were officially at war with the animal kingdom!

Other costs dealing with food safety issues tend to pale in comparison to this critter war: irrigation water testing at about $11 a pop per month per well, hair nets for harvest crews, building and installing racks close to the portable restrooms to hold the crews’ aprons and knives while they use the facility, harvesters equipped with blowers and other scare tactics to chase off mice before mechanical harvesting, etc., etc., etc.

The biggest threat we have hanging over our heads (besides an actual outbreak) is the possibility of false positives when testing for pathogens, and more and more big buyers are demanding we test for such microbes. Our company is currently paying $35,000 a month for machinery swab and product testing on spinach and spring mix alone! Product recalls without illnesses are considered a success, by many. When these a test comes back positive, and recalls are initiated and your company name is plastered all over the media and internet, you are not considered a hero. Labs can make mistakes and when they do, the cost to producers and handlers can run extremely high, anywhere from thousands to close to a million dollars. Add to that the loss of credibility with your customer base.

I have continually advocated the LGMA doctrine as the best we can move forward with, until we know more that allows us to either remove (or add) some of the animals from the “significant” list, or gives us reasons to alter some of the requirements, based on new science.

Farmers were all chanting “Show me the science, dammit!” So for the last several years, Rob Atwill, Michele Jay-Russell, Andy Gordus, and more in the research field have been on my speed-dial list. I have opened up our entire farming operation to their staff for research purposes, and I have enjoyed working with them. I have an open-door policy when it comes to research. It doesn’t cost me anything or take up much of my time. What better way to get the true answers than to do the research in the field, where cross-contamination can actually occur, as opposed to a controlled lab environment.

Unfortunately, the degree of variability involved with an “outdoor” lab can throw a monkey wrench into the ensuing results of research, resulting (again) in questionable data. The “uncontrolled” environment cannot plug in factors such as weather, rapid changes in irrigation water quality, proximity to areas of concern, passage of animals (especially birds flying over fields), inadvertent cross-contamination of animals not considered as normal vectors, etc. I have always been concerned about animals that aren’t on the list of significant risk being blamed because of inadvertent cross-contamination (e.g., rabbits stepping on cow poop and walking on our lettuce). Currently, our reaction to ANY fecal material in a field, regardless of which animal’s rear end it came out of, is to cordon off and destroy an area defined by a minimum radius of 10 feet. That 20-foot-diameter circle can’t just be taped off; it must be destroyed, to avoid any possibility of accidental or inadvertent harvesting, and the feces must be removed from the field and buried off-site. So much for the definition of “animals of significant risk”.

There is no attempt at identifying which animal’s butt this poop came from. According to the state and federal inspectors doing our field audits for the LGMA, poop is poop, and we will not attempt to classify it as to its danger level.

I have worked hard with California Department of Fish & Game officials and U.C. Davis academics, trying to get deer off the infamous list. Over 300 samples have been taken by Fish & Game alone, with only one “positive”. Then came the Oregon strawberry outbreak that showed deer were the culprit. I am convinced, at this point, that if these buyers were shown definitive negative results on all deer samples, that they would still react the same if deer tracks were present in a lettuce field. The concept of “zero tolerance” in the food safety field will more than likely continue to haunt producers and handlers forever.

One thing that has created some problems in the feral pig arena here in Monterey County is the “sport” tagging of this animal. Feral pigs have always been considered a nuisance animal that can overpopulate and destroy an area in a hurry. When Fish & Game decided to put a price on the taking of this animal for sport, populations immediately increased. Rules for depredation permits are strict and cumbersome, which dissuades farmers from pursuing this avenue. All we can hope for is that our fences hold up, and that pigs don’t enter our property from other areas.

The procurement industry has pretty much taken the bull by the horns and has developed their own criteria, superseding the LGMA metrics, and not just for leafy greens. I often thought (although, quietly to myself), why are we only concerned about leafy greens and food safety? What about other crops that can be consumed in their raw form, such as broccoli, cauliflower, celery, and carrots? I guess they read my mind, because although the LGMA document covers strictly leafy greens, most buyers and handlers are also requiring the same scrutiny on all of those crops now. So again, we play the game by their rules, or we get out of the business.

I recently helped the National Onion Association put the final touches on our food safety document for the growing, harvesting, and handling of dry bulb onions. Although no food safety outbreak has ever been associated with dry bulb onions, we felt that it was necessary to stay one step ahead of the curve. Guess what? The buyers of our fresh processed onions are already demanding the same level of compliance as for leafy greens. So watch out, deer and frogs! We can’t be friends any longer, no matter what the crop is.

We have all heard of the Food Safety Modernization Act, and the LGMA has worked closely with federal officials to integrate our metrics into a document acceptable by the entire food industry. The act became law the first day of this year, but the language in it, at this point, is yet to be defined.

Addendum: The latest “proposed” changes in the LGMA Food Safety document is definitely moving towards removing “animals of significant risk” from the language,
based on recent findings by, and recommendations of, the Western Institute for Food Safety and Security research team. Consideration of buffering and crop destruction is recommended for any fecal material found in or around leafy greens fields.