

February 4, 2022

Mr. Neil Anderson
Deputy Director
Biological and Economic Analysis Division, Office of Pesticide Programs
US EPA (Mail Code 7503P)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Via email: anderson.neil@epa.gov

SUBJECT: Considerations Relevant to the Agricultural Uses of Rodenticides and Answers to EPA Questions Related to their Use

Dear Mr. Anderson;

The undersigned national agricultural organizations appreciate very much the opportunity that the US EPA Office of Pesticides, Biological and Economic Analysis Division (BEAD) has afforded us to provide answers to questions it has posed about the agricultural uses of the rodenticides. Our answers are below in Appendix B. We also appreciate the efforts of USDA's Office of Pest Management and Policy to respond to the questions posed and that EPA has engaged with them in this process. In addition to our answers we offer in Appendix A background information and observations. We believe the latter provides important and relevant considerations that make clear just how important it is that EPA have reliable and high-quality data and information about the benefits and costs of the use of these products in agriculture before it makes decisions that could further restrict their use or make them more costly.

Our members are committed to the lawful and responsible use of these products, as clearly specified in their current FIFRA labels and related requirements. We also believe that those requirements and current industry practices assure the products will be used wisely by our members while minimizing effects on non-target species.

These products are absolutely critical to attaining multiple objectives important not only to our members' operations but to society as a whole. They help ensure and protect the health and welfare of the animals in our members' care. They help ensure the safety of the food they produce. They help prevent the propagation and spread of human pathogens carried and transmitted by rodents. By greatly reducing the substantial losses of feed to rodent consumption and spoilage, these products contribute directly to reducing agriculture's life cycle environmental footprint and increase its climate smart performance. Restrictions on their availability and any increases in the costs of their acquisition, use and management will directly further the loss of small to mid-size farms and ranches, increasing concentration throughout agriculture at the farm and ranch level including for minority and limited resource farmers (with associated environmental justice implications).

Further label restrictions, by adding more complexity, time, resources and costs to the use of these products, will make it far more difficult to continue attaining these objectives and meeting these needs. As a result, we urge EPA not to place further restrictions on their use that are not supported by

data demonstrating that these measures will result in measurable reductions in the effects of these products' use on non-target species.

We offer detail on these matters in the material we offer below. We are ready to supply you with more information and details if that would be of assistance to you.

Sincerely,

American Farm Bureau Federation

American Feed Industry Association

American Horse Council

National Cattlemen's Beef Association

National Council of Farmer Cooperatives

National Milk Producers Federation

National Pork Producers Council

National Turkey Federation

United Egg Producers

U.S. Poultry & Egg Association

Contents

Appendix A – Important Considerations.....	A-1
1. Commodity producers are price takers; important policy implications	1
2. Changes to FIFRA requirements applicable to rodenticides must consider how such changes affect the role rodenticides play in helping egg, dairy and other producers protect the safety of the food they produce and otherwise meet applicable federal and state food safety requirements.	2
3. Rodents are serious disease vectors and rodenticides are used to increase biosecurity and reduce serious animal and human disease threats	4
4. Rodents on animal operations have a significant, negative environmental and GHG life cycle footprint, and rodenticides are effective tools to reduce and minimize such consequences	7
5. Why EPA cannot presume qualified and suitable Certified Pesticide Applicators are available; California as an exception that proves the rule	8
6. Rodenticides are simply too important to animal agriculture for the EPA to make major policy decisions with incomplete information on rodenticide implications for non-target species.	8
Appendix B – Swine and Poultry Sector Answers (AgProVision) to EPA Questions	B-10
Appendix C -- Egg Sector Answers to EPA Questions Related to the Use of Rodenticides.....	C-1
Appendix D – FDA Egg Safety Rule 21 CFR 118.4.....	D-14
Appendix E – FDA’s Guidance to Egg Sector for Monitoring Rodent Populations.....	E-1

Appendix A – Important Considerations

1. Commodity producers are price takers; important policy implications

Given the work that BEAD does in the agricultural pesticides' policy space, this point and its implications is probably known to you. But it bears repeating and emphasis. The animal agriculture producers using rodenticide products are working in commodity sectors. This means that they are “price takers” in the sense that a single producer cannot unilaterally raise the price of their product in order to pass increased production costs on to their customers. They must sell at whatever price the marketplace is offering at the time of sale. There are important and relevant complications (the role of contracting, futures markets, etc.) but this underlying commodity sector attribute drives how all of these instruments operate.

This has profound policy implications for the structure of agriculture and the concentration of productive capacity in commodity sectors. If costs of production go up enough in a commodity sector, the higher cost farmers or ranchers often get squeezed out of the marketplace; they go out of business, perhaps after being acquired by a lower cost producer. The fact that smaller to mid-sized agricultural operations tend to be higher cost operations means that such cost increases drive concentration in the sector, increasing the average size of the agricultural operations present.

Greater regulatory requirements and complexity increase cost. Often those costs and complexities drive firms to hire staff that specialize in how to meet those requirements and otherwise properly meet the requirement and all the attendant risks. Firms that have the size and economies of scale to justify those staff costs can operate in such a regulatory environment. Small to medium sized farmers often tough it out for as long as they can, work harder, try and work smarter, pinch pennies, because they love what they do even though it may not make economic sense. But in the end, they often face a stark choice; go big or get out of agriculture. It is not just regulatory costs that drive such changes, of course. But they are most certainly a factor, particularly if the potential liabilities of not meeting the regulatory requirements are great. The risks, both real and perceived, and the emotional toll they take, are very real.

For all of the reasons we lay out in the sections below, rodenticides and rodent control are critical to today's animal operations. No regulator intends to be a driving force that leads to the loss of small to medium size farms and ranchers. But regulatory decisions can certainly be a major economic factor in decisions to leave agriculture, with real implications for the affected producers and the resulting greater concentration in the agricultural sectors that also has major implications for other important societal objectives.

These considerations and the effects of increases in regulatory costs and what it means for the loss of small to medium sized operations need also to be considered from an environmental justice perspective. Many of the small and medium sized animal operations in parts of the US are operated by

black and other minority farmers. The negative pressures on them due to the loss of the availability of products, or the increases in costs in their use, or both, are similarly profound and serious and perhaps financially even more so. The agency needs to take these environmental justice considerations into account.

For these reasons, estimates of all the costs involved and their implications for the farming community must be seriously considered and reflected in the agency's FIFRA regulatory decisions, in this case involving rodenticides. We urge you to do so.

2. Changes to FIFRA requirements applicable to rodenticides must consider how such changes affect the role rodenticides play in helping egg, dairy and other producers protect the safety of the food they produce and otherwise meet applicable federal and state food safety requirements.

Rodents are a vector for the transmission of contaminants in animal agricultural operations that can make the foods produced there unsafe for human consumption, including such bacterial contaminants like *Salmonella* and virulent forms of *E.coli*. See for example the findings reported in 2020 about rats carrying zoonotic bacterial pathogens associated with food-borne illnesses. In addition to *E. coli* and *Salmonella*, the bacterial strains included *Pseudomonas oryzihabitans*, strains of *Pseudomonas aeruginosa*, as well as 4 strains of *Staphylococcus aureus*. These strains had high degrees of antimicrobial resistance. (See [An Investigation of Potential Health Risks from Zoonotic Bacterial Pathogens Associated with Farm Rats.](#))

As a result of this risk, rodent control is required by the federal Food and Drug Administration (FDA) as well as state food safety mandatory controls applicable to dairy and table egg production. Rodenticides are in widespread use today on animal agriculture operations as the primary tools utilized to control rodent populations and meet these federal and state on-farm food safety requirements. Any changes to the current pesticide regulatory program applicable to rodenticides must fully consider how such changes will affect farmers' ability to meet these food safety requirements and otherwise protect food safety.

SHELL EGGS – The FDA's egg safety rule applicable to shell eggs being produced for table consumption has been in effect for over 10 years and today applies to operations with 3000 or more laying hens at a farm. In the case of shell eggs the FDA holds that "Egg-associated illness caused by *Salmonella* is a serious public health problem. Infected individuals may suffer mild to severe gastrointestinal illness, short term or chronic arthritis, or even death. Implementing the preventive measures would reduce the number of Salmonella Enteritidis infections from eggs by nearly 60 percent" The rule mandates that egg farmers test at regular intervals for the presence of *Salmonella* in the layer houses and related buildings

and take significant biosecurity and related aggressive measures to avoid the presence of *Salmonella* in the facilities. Should *Salmonella* be detected, either in the layer facilities or on the eggs themselves, significant financial penalties are imposed in the form of denying entry of those shell eggs into the marketplace for high value table egg consumption. Instead, **all** of the eggs from the flock in those facilities **must** be pasteurized or diverted into non-food use. Furthermore, the facility **must** be sanitized so as to eliminate detections of *Salmonella* in the layer houses and related building. (See the FDA Fact Sheet “Egg Safety Final Rule” at <https://www.fda.gov/food/eggs-guidance-documents-regulatory-information/egg-safety-final-rule>.)

With respect to rodent control, the FDA requires shell egg producers to monitor for rodents by visual inspection and mechanical traps or glueboards or another appropriate monitoring method, and when monitoring indicates unacceptable rodent activity, producers must use appropriate methods to achieve satisfactory rodent control. In addition, producers must remove debris within their layer houses and vegetation and debris outside the layer houses that may provide harborage for pests like rodents (See (21 CFR 118.4(c)(1), (c)(2) and (c) (3))). See the highlighted language in [Appendix C with an excerpt from the Code of Federal Regulations, 21 CFR 118.4](#)).

The FDA issues guidance to industry about how to meet these requirements. If the number of rodents detected through the producer’s monitoring program exceeds a certain number over a period of time, the farm is deemed as having a food safety issue and the farm must take “appropriate methods to achieve satisfactory rodent control.” (See the associated excerpts from [FDA guidance in Appendix D](#) about how to monitor and index the detections of rodents to determine thresholds triggering need for greater rodent control).

MILK FOR INTERSTATE SHIPMENT – The interstate shipment of milk is regulated under the Grade A Pasteurized Milk Ordinance (PMO). The PMO is a collaboration between the Food and Drug Administration (FDA), the states, and industry to ensure the highest level of milk sanitation practices and food safety for Grade A dairy products. The PMO has been around for over 75 years driving the decrease of milk-borne illness down from 25% of all disease outbreaks in 1938 to less than 1% in the most recent data. The PMO regulates the entire journey of grade A milk from the cow to the processing plant.

Rodents can be a vector for disease on dairy farms and as such are both a biosecurity and public health concern. The PMO suggests rodenticides as a possible tool to use for the control of rodents- “anticoagulant poisons, Warfarin, Fumarin, etc. have offered improved means of controlling rodents on the farm. Used according to directions, and with due precaution against their consumption by domestic animals, these chemicals should keep the rodent population in check while additional preventive programs are instituted.” Given the amount of accessible feed on dairies which often attracts rodents, rodenticides, when used properly and following EPA’s guidelines, are an important tool to protecting herd biosecurity and public health. (See: [Grade “A” Pasteurized Milk Ordinance](#), 2019, pages 60-61, and 166-167.).

3. Rodents are serious disease vectors and rodenticides are used to increase biosecurity and reduce serious animal and human disease threats

Rodents are a vector for the transmission of serious animal diseases on animal operations that hurt farm animals' health and welfare and can lead to their deaths. Even if the rodents themselves do not carry an animal pathogen, rodent control personnel travelling from farm to farm could easily do so if disease is present in the area and great care must be diligently exercised. ("Farm visitors can pose a risk, particularly if they have been on other farms...Farm equipment that has been in contact with livestock or manure can be a source of infection. Equipment should not be shared with other farms unless it has been thoroughly cleaned and disinfected before it reaches your property." See USDA-APHIS' [Fact Sheet on Biosecurity: Protecting Your Livestock and Poultry](#).) Animal agricultural producers are actively seeking to reduce the potentially catastrophic biosecurity risks associated with bringing new, outside service personnel onto their farms, particularly if they are going to be traveling from farm to farm as part of their business. It is not a decision an animal ag producer can make lightly and many will not be in a position to take that risk unless they are forced to do so.

Rodents can be carriers of numerous pig pathogens including "*Salmonella* serovars, *Leptospira*, *Yersinia pseudotuberculosis*, *Toxoplasma gondii*, *Campylobacter* spp., *Brachyspira* spp, *Lawsonia intracellularis* or the encephalomyocarditis virus." While mice travel relatively short distances in an evening (150 meters) and therefore are more of a threat to biosecurity within a facility, rats can be vectors for transmission off-farm and to neighboring farms. Rats can travel up to 3 km in an evening. (See [Biosecurity in pig farms: a review](#).)

The swine diseases that rodents can carry and transmit include the following:

Disease	Agent	Rodents implicated
Bordetellosis	bacteria	rats
Encephalomyocarditis	virus	rats, mice
Leptospirosis	bacteria	rats, mice
Pseudorabies	virus	rats*
Salmonellosis	bacteria	rats, mice
Swine Dysentery	bacteria	rats, mice
Swine Erysipelas	bacteria	rats
Toxoplasmosis	protozoan	various rodents
Trichinosis	nematode	rats

(See [Controlling Rats and Mice in Swine Facilities](#), August, 2019.)

With respect to potential human diseases, trichinosis was once a serious issue associated with farm raised pork that has been addressed by the US swine sector. Trichinosis results from ingestion of the parasite *Trichinella*, a nematode parasite in pigs that could infect humans if the pork wasn't fully cooked. Today, trichinosis is very rare and all but eliminated in farm raised pork, although human infections do

occur from eating wild game like feral hogs. Yet *Trichinella* remains an ongoing risk on swine operations that producers continue to address, and the “rat is considered to be the most common vector for the *Trichinella* parasite. The population of rats living on pig farms can play an important role in maintaining or spreading the parasite to other animals.” (See [Occurrence of *Trichinella* spp. in rats on pig farms](#), November 2018.) See also Table 1 in [Rodents on pig and chicken farms – a potential threat to human and animal health](#) for a summary of the results of a 2016 worldwide review of the animal and human pathogens that are commonly carried by rodents on swine and chicken farms around the world.

With respect to the potential for animal diseases that can be spread by rodents and related biosecurity breaches, animal farmers face every day the catastrophic risk of an animal disease on their farm that could lead to the deaths of their entire herds or flocks. Once such a disease reaches one farm, the risk of spread to other farms is very great and these incidents can lead to the loss of literally millions of animals and their owners’ livelihoods. For example:

- African Swine Fever in 2018 wiped out up to a third of the entire swine herd of China, the equivalent of the entire US swine herd. (“African swine fever (ASF) is classified by the World Organization for Animal Health as a List A disease, with a mortality of up to 100%. The latest large outbreak of ASF was reported in China, the world’s biggest producer and consumer of pork, in August 2018 and has killed millions of pigs. Due to the absence of effective vaccines and treatment and proper sanitary and hygiene practices, eradication of the disease presents a major challenge. Particularly in China, a large proportion of pigs are kept on small-sized farms which lack the capacity to prevent infection and to control pig diseases. This makes eradication of ASF very difficult in China. Since the onset of the latest outbreak, huge efforts have been made to prevent and control the rapid spread of the disease, including a strict stamping-out policy that involves delineating quarantine zones for infected areas and the rigorous culling of infected herds. These measures inevitably cause large economic losses and affect many people and related industries.” See Nature Food, [African swine fever outbreaks in China led to gross domestic product and economic losses](#).) While ASF has not yet been detected in North America, it was recently found in Haiti. The US and Canadian swine farmers and the animal health agencies are on high alert.
- Highly Pathogenic Avian Influenza swept across the US in 2014 and 2015, leading to the deaths of more than 50 million birds, mostly egg laying hens and turkeys. (“Between December 2014 and June 2015, more than 50 million chickens and turkeys in the United States died of highly pathogenic avian influenza (HPAI) or were destroyed to stop the spread of the disease. These birds accounted for about 12 percent of the U.S. table-egg laying population and 8 percent of the estimated inventory of turkeys grown for meat. In response to this historic animal-disease event, many destination markets for U.S. poultry commodities levied trade restrictions on U.S. poultry exports, distorting markets and exacerbating economic losses.” See USDA ERS Report [Impacts of the 2014-2015 Highly Pathogenic Avian Influenza Outbreak on the U.S. Poultry Sector](#).)
- Today HPAI is recurring extensively in both Asia and Europe; more than 40 countries around the world had reported outbreaks of bird flu in poultry between October and the end of December 2021, and millions of poultry have been lost as a result. (“Various subtypes of high pathogenicity

avian influenza have been reported by more than 40 countries over the last six months. During the high-risk period of this disease, October to April, countries need to scale up surveillance efforts, implement strict biosecurity measures and ensure a timely reporting of outbreaks to curb its spread. See: [The World Organization for Animal Health \(OIE\) calls for increased surveillance](#). November 2021.) There have now been dozens of HPAI cases now found in wild birds from Eastern Canada all the way to Southern Florida. All are similar strains to the version causing the major outbreaks throughout Europe and Asia. USDA/APHIS and poultry trade associations are reminding members that strong biosecurity is of the upmost importance in order to prevent outbreaks in commercial flocks. Losing any tool to protect against this threat at this critical moment of time could be devastating.

The risks are not just to the animals alone. While still exceedingly rare, animal diseases can sometime be passed to humans. Rodents also carry major human pathogens. As a result, Monica Eloit of the World Organization for Animal Health recently raised the alarm for potential risks, noting that “Eventually the risk is that it mutates, or that it mixes with a human flu virus that can be transmitted between humans; then suddenly it takes on a new dimension.” (See [Fears about higher risk of bird flu spreading to humans](#), January, 2022).

Research in Europe reported in 2016 found that rats (and shrews) carried various forms of novel alphacoronaviruses, some of them newly found distinct species of the alphacoronaviruses. (See [Discovery of Novel Alphacoronaviruses in European Rodents and Shrews](#), March, 2016.)

The *New York Times* reported on February 3, 2022 ([In New York City Sewage, a Mysterious Coronavirus Signal](#)) that for over a year researchers monitoring for coronavirus in New York City’s wastewater have persistently found unique mutations of the coronavirus in fragments, and that these mutations have never been reported before in human patients despite a diligent effort to find them. The source of these fragments remains a mystery, but among the leading hypotheses is that these fragments “...may be coming from virus-infected animals, possibly the city’s enormous population of rats — a potential sign of a new, previously undetected variant.” These findings and the work to uncover the source of these fragments were reported yesterday in *Nature Communications* ([Tracking cryptic SARS-CoV-2 lineages detected in NYC wastewater](#)).

It is worth noting that, analogous to agriculture’s concerns with ensuring pest control service professionals are able to fully comply with farms’ biosecurity protocols to minimize disease transmission, US EPA’s Office of Enforcement and Compliance has taken steps to address such risks as well. It issued guidance in 2016 ([Biosecurity Procedures for Visits to Livestock and Poultry Facilities](#), April, 2016) that created standard operating procedures to minimize “the risk of EPA personnel and those acting on their behalf (e.g., contractors, grantees, and senior environmental employment staff), here after called “EPA personnel,” transmitting animal diseases from livestock or poultry facilities, to livestock or poultry at another location.” Even when EPA is planning to enter a facility in an area where there are no known disease outbreaks and therefore no extraordinary disease prevention measures officially required by state veterinarians, EPA’s SOPs direct personnel to take measured and sensible steps prior to entry. In particular they call for EPA personnel to “discuss appropriate biosecurity measures with the owner/operator and are encouraged to adopt more stringent measures, as appropriate, into the procedures for that specific facility.” (Page 9). US animal agriculture appreciates

greatly EPA's Office of Enforcement and Compliance taking these steps to reduce the risk of staff transmitting diseases to livestock and poultry.

Disease transmission to livestock and poultry or humans is, of course, **not** a problem solely attributable to the presence of rodents on animal operations. But the risk is very real that rodents are playing a serious and substantial role in the chain of transmission of animal and human diseases. Animal agriculture therefore and accordingly takes the business of rodent control on their operations very seriously. Fortunately, the rodenticides and related measures can be used to great effect in achieving the desired population controls. These benefits of the products must be fully considered in any changes in federal rodenticide label policies.

4. Rodents on animal operations have a significant, negative environmental and GHG life cycle footprint, and rodenticides are effective tools to reduce and minimize such consequences

The average mouse will eat approximately 2.25 lbs of food a year, about 10-15% of its body weight a day. A rat can eat about 22.5 lbs a year, also at about 10-15% of its bodyweight each day. (See [Rats and Mice, Indiana's Epidemiology Resource Center](#).) Estimates of the amount of feed spoiled by rodents as they eat the feed range up to 10 times the amount consumed (See [The Hidden Costs of Rodents on Poultry Livestock Farms](#) and [Role of rodents in poultry environs and their management](#).) Working from those estimates, an uncontrolled population of 9000 mice on an animal operation would therefore consume approximately 10 tons of animal feed a year, and spoil about 100 tons. A population of 3000 rats will eat about 34 tons of feed a year and spoil another 340. Such feed losses are of economic importance to an animal producer.

They are also important because feed in general plays a large role in the life cycle environmental footprint of that animal operation. Life cycle analyses of the environmental performance of the major US animal agricultural sectors routinely find that feed use is a major if not largest contributor to the important elements of their footprints, including Greenhouse Gas Emissions (GHGs). (See for example the discussions and graphs of the role of feed use in [Do We Know the Carbon Footprint of the Pork Industry?](#), [Landmark 50-Year Study Documents U.S. Egg Industry Reduced Environmental Footprint](#), [U.S. Dairy's Environmental Footprint](#), [Sustainability Assessment of U.S. Beef Production Systems](#), and [Broiler Production System Life Cycle Assessment: 2020 Update](#).)

Rodent control programs, and the critical role that the rodenticides play in them, therefore would have a net positive and meaningful benefit in reducing the environmental and the GHG footprint of animal operations. These benefits of the products must be fully considered in any changes in federal rodenticide label policies.

5. Why EPA cannot presume qualified and suitable Certified Pesticide Applicators are available; California as an exception that proves the rule

The 2nd Generation anticoagulant rodenticides (ARs) have been classified as restricted materials in California since 2014. We understand that animal operations in the state have responded and worked within these requirements in a variety of ways. Some producers have attempted to instead rely exclusively on the non-RUP 1st Generation ARs as a result, reportedly with disappointing degrees of success in terms of rodent population control and some resulting higher incidence of animal disease such as poultry cholera. Others have attempted to train and certify a portion of their own farm staff, but have been hampered by challenges with retaining employees in general including those trained and certified as an applicator. They sought to have certified applicators on staff as a way to ensure the rodent control program was conducted by applicators with a high degree of familiarity with animal operations and also as a way to reduce biosecurity breaches and the risk of spreading disease. Others have successfully used outside certified applicators who have applied products or supervised on-farm staff in doing so.

In those latter instances, the operations were large enough to be able to afford such services and there were companies available to provide that service that were knowledgeable enough with rodent control on animal operations with biosecurity constraints to be successful. This will be more likely the case where there is a significant enough concentration of animal operations in a geographical area to provide enough business for an outside custom service to succeed financially. Without question, there will be other locations in the country where the use of contract certified applicators exclusively or in conjunction with in-house farm staff can work, for similar reasons. But those circumstances are not going to be universally common across the country, and the experience of those California producers in these circumstances should not be assumed to be possible in other parts of the US with animal operations.

6. Rodenticides are simply too important to animal agriculture for the EPA to make major policy decisions with incomplete information on rodenticide implications for non-target species.

Discussed above are the considerable benefits to farmers and ranchers as well as to society that are being derived from the use of the rodenticides, including the anticoagulants. The costs to farmers, ranchers and society are or can be similarly as great if the uses of these products are made more costly or restrictive. In the case of individual agricultural producers, those costs can't be passed on to their customers. Unfortunately, the supply adjustments in these agricultural commodity sectors corresponding to these increases in costs often involves smaller and medium sized operations going out of business and where their production is picked up by larger, lower cost operations. Farmers go out of business, plain and simple. There are many forces contributing to this, of course, but the cost of

regulation is certainly one of them and one we therefore seek to reduce where appropriate and possible.

As a result, we encourage the agency not to make decisions about these products that will increase the costs of their use without sound and sufficient information as to the undesirable consequences to wildlife from the uses of these products in agricultural settings, if any. In particular, this means that EPA should have strong and complete information about the effects from the use of these products on wildlife species of concern, how the exposure is occurring, and supporting evidence that the proposed changes will contribute to sustaining their healthy populations.

There is no question that anticoagulant rodenticides have been detected in many species of wildlife worldwide, including in animals that have died, possibly from any number of causes. What is not known, however, is what were the origins of rodenticides found in these species, what was the manner of the exposures to these products when used, as well as what are the actual effects of these exposures? We do not know what proportion of the wildlife populations of concern are being exposed, what proportion of the exposed individuals are affected, and in what ways they are affected. In addition, the relationship between the anticoagulant rodenticide concentrations found in the animals and the rate of mortality also is still not known. Residue levels in body tissues vary considerably and there are certainly healthy individuals without any symptoms that have rodenticide levels in their bodies as high as those also found in mortalities. This is backed up by laboratory studies that show great variability in the amounts of rodenticides that could cause illness or death among the same species of animal and across species.

A related and critical set of missing information involves those wildlife species for which we are concerned due to their small or declining populations. We simply do not know whether rodenticide exposures in these populations limit the population growth or are contributing to their decline.

Given that this information is essential to the regulatory agencies that must weigh the risks and benefits of rodenticide uses and identify restrictions that are effective in reducing risks to wildlife, we urge the agency to engage with agriculture and the research community to develop the needed body of information before decisions are made to further change how the rodenticides are addressed under federal pesticide laws and regulations.

Appendix B – Swine and Poultry Sector Answers (AgProVision) to EPA Questions



February 4, 2022

Mr. Neil Anderson
Biological and Economic Analysis Division, Office of Pesticide Programs
US EPA (Mail Code 7503P)
1200 Pennsylvania Ave., NW.

Washington, DC 20460

Dear Mr. Anderson:

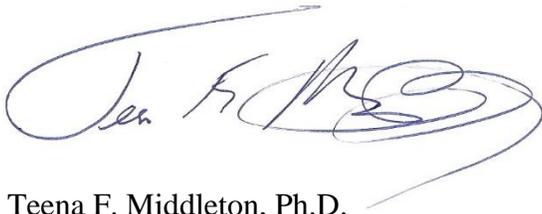
Ag ProVision, LLC (Ag ProVision) would like to take the opportunity to provide responses to the detailed questions posed by the US EPA Office of Pesticides, Biological and Economic Analysis Division. We are aware that a number of organizations are providing data in support of the benefits of rodenticides to the health and safety of poultry and livestock. It is our intent to provide information that clarifies the current manner of usage of rodenticides within the poultry and swine industry. We hope that the usage information provided herein offers an animal agricultural perspective to your agency as it considers potential mitigation options for rodenticides in the Proposed Interim Decisions (PIDs).

Ag ProVision is uniquely qualified to offer this perspective to your agency. Ag ProVision operates as a purchasing, logistics, and distribution division for a number of major integrated swine and poultry companies who are jointly responsible for the care of over 1.6 million sows, 26 million market hogs, 190 million broilers, and 100 million turkeys. Ag ProVision obtains animal health and animal production products as directed by its owner companies. Ag ProVision then distributes these products via various channels to the approximately 4,200 company and contract grower farms affiliated with its owner companies throughout the continental United States. This distribution network includes corporate feed mills, hatcheries, and warehouses. Production

*277 Faison McGowan Road • Kenansville, NC 28349
Phone: (910) 296-0302 • Fax: (910) 296-1159*

personnel with technical expertise from each owner company serve on product qualification advisory panels that review research results, technical literature, product usage, and product performance histories to approve or reject products based on their ability to provide appropriate solutions. One such category of animal production products qualified by production personnel, obtained and distributed by Ag ProVision, and utilized by the farms, warehouses, hatcheries, and feed mills is rodenticides. The rodenticide products currently used by Ag Provision member companies have been selected because they have been demonstrated to be the most appropriate and cost-effective choices for use in each organization's integrated pest management strategy.

As the Director of Technical and Regulatory Affairs for Ag ProVision, I submit the following responses to the questions proposed.

A handwritten signature in blue ink, appearing to read "Teena F. Middleton". The signature is stylized and cursive, with a large loop at the end.

Teena F. Middleton, Ph.D.
Director of Technical and Regulatory Affairs
Ag ProVision, LLC.

EPA Questions Relating to the General Use of Rodenticides.

Background statement: The term “contract grower” will appear often in the responses below. Many not currently affiliated with animal agriculture might be unfamiliar with the meaning of this term. A high percentage of poultry and swine in the United States are raised in integrated systems. What this means is that a company that processes animals to make them available to consumers at the grocery counter owns, but may not raise, the animals they process from the moment they are conceived until they are processed. Such companies are commonly referred to as “integrators.” While these integrators can and commonly do own farms where their animals are raised, the majority of the animals they own are raised by independent farmers under a contract with the integrator. These independent or “contract” growers house and care for the integrators’ animals on the contract growers’ own properties. A contract grower provides the facilities and the labor, while the integrator supplies the animals, feed, medications, and technical support. Reimbursement rates to the contract grower are specified in the contracts and the income to the grower is directly related to how well the animals perform under the grower’s care. Contract growers that raise healthy animals that grow well and thrive under their care will be reimbursed at a higher rate than will growers whose animals do not perform as well, have higher morbidity and mortality rates, and for which more feed and medication is utilized to rear a given number of animals. As rodent control is essential to animal health and to prevent feed spoilage and wastage, having effective rodent control measures available to these independent contract growers directly impacts their livelihood and that of their families. Recent USDA estimates state that the actual costs of rats’ feed wastage and damage is as high as \$25/rat/year. Further, rodents often kill and eat young poultry. Poultry farms with poor rodent control often have thousands of unaccounted for losses at the conclusion of the grow out cycle. Investigations often recover these thousands of partially eaten carcasses in burrows, crevices, and other areas of rodent harborage. We offer this statement to demonstrate that while we speak on behalf of our owner companies, their success is tied directly to the success of their contract growers to raise healthy, happy animals. We ask that as any mitigation efforts are considered, that the impact of those efforts on the family farmers, the ones directly responsible for the day-to-day care of the animals, be considered.

Question One: For which site(s) (e.g. commercial, institutional, agricultural, residential) are you providing answers?

Position: Agricultural

Question Two: Which rodent pests are most commonly requested for control? Does this differ depending on the site (e.g. urban vs rural)?

Position: House mice (*Mus musculus*), Norway rats (*Rattus norvegicus*), and roof rats (*Rattus rattus*) are the rodents most commonly requested for control on poultry and swine operations and in

industry affiliated infrastructures such as warehouses, feedmills, and grain storage areas. All Agricultural operations for which this response pertains are located in rural areas.

Position Support Information: Documentation in support of these as the major pests of interest on swine operations is provided by the Pork Information Gateway Factsheet: [Controlling Rats and Mice in Swine Facilities](#). Similar information on rodent pests present at poultry operations can be found in [Controlling Rodents on the Poultry Farm](#). These two handouts provide some of the most concise, useful information available on the identification of pests and the measures used for their control. We encourage your agency to obtain and review this information. Hotlinks to the on-line versions of these documents are provided.

Question Three: Are you and/or your employees certified pesticide applicators? If answering on behalf of a trade organization, can you provide information on certification rates in your organization?

Position: We estimate that less than 1% of the employees of our owner companies that are currently trained and authorized to apply rodenticides are certified pesticide applicators. It is estimated that approximately 30% of independent contract growers affiliated with our owner companies maintain some form of pesticide application certification. These certifications were generally obtained because those growers also are involved in raising crops, trees, or nursery plants onto which pesticides are applied. These certificates and their applicability to buy and apply Restricted Use Pesticides varies from state to state.

Position Support Information: Many producers of poultry and livestock also raise row crops or other agricultural commodities and would therefore have some sort of agricultural pest control certification. However, the realities of current poultry and livestock production have resulted in a high percentage of producers who raise animals on a contractual basis, with no associated crop production and therefore no need for pest control certification. Furthermore, the chemical classifications permitted for use by certified pest control applicators varies state-to-state, with many states requiring different forms of certification for rodent control than for agricultural insecticide application. Poultry and livestock producers are specialists in their field, familiar with the importance of following label directions for the use of a wide variety of chemicals including not only rodenticides, but also medications, cleaners, and disinfectants. They understand that only through the proper use of these compounds can they ensure that meats from the animals they market will be wholesome and free from any chemical residues that might result in product rejection.

Two of our owner companies provided detailed illustrations of their current applicator certification status in response to our request. These two entities represent 78% of the farm locations affiliated with Ag ProVision. We feel that their perspective is representative of their respective industries.

Company One (Swine) has somewhere in the vicinity of 15-20 licensed applicators across the company. They have roughly 2000 employees who are currently trained and authorized to apply rodenticides on corporate farms that would require certification if all rodenticides became classified as Restricted Use Pesticides. Corporate farms only comprise approximately 15% of all farm operations for Company One. Therefore, one could extrapolate that 13,000 individuals would require certification to perform these same functions on independent contract grower facilities affiliated with the company if currently used rodenticides became reclassified as restricted use.

Company Two (Poultry) has 10 certified pesticide applicators working for their company in the five states in which they do business. This is to service 68 corporate farms on which rodent control programs are implemented by on-farm employees. None have their certification solely for corporate use and are mainly licensed for their personal private use. It is estimated that approximately 50% of the independent contract growers affiliated with this company hold some form of pesticide certification. Again, the applicability of their current certification status to the application of rodenticides varies from state to state. If current over-the-counter rodenticides became classified as restricted use, at least 600 additional contract growers and approximately 70 company employees would have to be certified to apply rodenticides in order to maintain their current level of rodent control without sacrificing other areas of biosecurity (professional contract applicators traveling to multiple farms per day for rodent control presents an unacceptable risk for the spread of disease).

Question Four: After first treating the site, how often and under what circumstances does the applicator return to the site?

Position: Farm employees are on the farm daily for routine farm operations. Rodent carcasses are removed when identified, typically once or twice daily for biosecurity and sanitation purposes. Growers understand that hogs and poultry will feed on rodent carcasses and that care must be taken to prevent exposure of these carcasses to the animals being raised on the farms. Growers, as stewards of the land, also understand the importance of not exposing non-target species to the rodent carcasses. Outside applicators are not performing rodent control services on farms. This task is performed by farm owners or farm employees that understand the importance of rodent control as part of an integrated pest management system.

Corporate feed mills, hatcheries, and warehouses typically hire outside professional applicators to perform rodent control services. In general, these contractors visit these facilities monthly to inspect and rebait bait stations (outside applications) and to inspect and replenish inside non-chemical traps. Having an effective pest control program is an essential requirement for facilities that manufacture and store food for animals. Rodent carcasses are typically collected by corporate grounds employees while performing their routine duties in feed mills and warehouses.

Position Support Information: Corporate policies and grower contracts require adherence to corporate rodent control plans as part of comprehensive pest control programs in place for biosecurity and food safety. Feed mills and warehouses that store feed products are required by the Food Safety Modernization Act to exclude pests to protect animal feed from contamination by pests (21 CFR 507.19(e)). The Center for Veterinary Medicine has created a guidance document that represents the agency's thinking on the current Good Manufacturing Practices (cGMP) for handling food for animals as is codified in 21 CFR 507. This guidance document (Current Good Manufacturing Requirements for Food for Animals, Guidance for Industry #235) can be downloaded at: <https://www.fda.gov/media/97464/download>. We urge your agency to download and review this guidance as you consider mitigation options and their impact on the Food Safety Modernization Act requirements already incumbent on our industry. Note in particular the thinking of the Agency on the meaning of the requirements in 21 CFR 507.19(e) pertaining to the exclusion of pests as part of a proper sanitation program (in section VI.C.3. of the guidance document, page 20).

Question Five: What affects the cost of rodent control services (e.g., initial vs subsequent visits, a threshold level of pests, multiple different pests, labor, cost of equipment, etc.)? Is there a "base" level of service? If so, what is included? For example, are subsequent visits to the site for carcass removal and checking bait stations included in the initial treatment costs?

Position: Currently, the primary drivers of costs in an on-farm rodent control program are the cost of rodenticides, the types of bait stations used, and the required frequency of bait replacement (labor costs). On farm labor is currently used for the implementation of integrated pest control programs, which of course includes control of rodents. Should the changes identified to us in the upcoming Proposed Interim Decision (PID) of 1) transitioning all rodenticides to Restricted Use Pesticides (RUP) and 2) requiring the use of respirators when handling loose formulations of rodenticides, the costs of implementing current integrated pest management programs will increase.

It cannot be over emphasized that rodenticides are currently being managed responsibly and safely on commercial swine and poultry operations as part of integrated pest control programs. The increased costs associated with the proposed changes will be incurred with no foreseeable benefits either to the environment, exposure to non-target species, or to worker safety. As prices for animal agricultural products are market driven and cannot simply be increased when costs increase, the increased costs of these two proposed changes would be born primarily by the farmers themselves.

Position Support Information: *Transition of all Rodenticides to RUP*

The two primary drivers of the increased costs associated with transitioning all currently used rodenticides to RUP would include the additional fees and costs associated with certification but would primarily be increased labor costs. Fees and requirements for certification to apply RUPs vary from state to state. Recent conversations with John Feagans, the Licensing, Certification, and Outreach Manager for the NC Department of Agriculture and Consumer Services (NCDA&CS) Structural Pest Control and Pesticide Division provided that in this state, only a Private Applicator certification would be required for an individual to apply RUPs on a farm owned by their employer. This certification requires that the

applicate study the [NC State - Purchase Pesticide Applicator Core Manual](#) for a cost of \$26, pass a 50 question exam based on the information in the manual, then pay a \$10 fee once every three (3) years for certification. Again, the type of certification required would vary from state to state, with additional costs for in-person training classes being required in some states. As Ag ProVision provides rodenticide products directly or indirectly to farms in over 22 states, we can at the agency's request, compile exact costs per state for certification if that would be helpful.

However, these certification costs are minor compared to the increased labor costs associated with this transition to RUP. First, employees must be afforded time by their employer to study the core manual, take any required training classes (if applicable), and to take the exam. The amount of time required will vary depending on the employee's knowledge and educational background. Some on-farm employees that currently are successfully implementing rodent control programs may lack the educational background to be able to pass the exams. Once certification is achieved, additional time will be required for the recordkeeping that will now be required for use of what would become RUPs. Record keeping requirements are codified in 7 CFR 110.3; records must be maintained for a minimum of two years from the date of the application and "be maintained in a manner that is accessible by authorized representatives." While the form/manner in which records are to be kept can vary from state-to-state, any additional record keeping will also require that the farm owner or manager devote time and attention to the proper archiving of these records. As on-farm application of rodenticides can occur quite often due to the size of the operations and the level of infestation on a given farm, the time required for fulfillment of these record keeping requirements is not trivial.

Table 1 provides a conservative estimate of the additional cost drivers to be borne by the owner companies and affiliated farms of Ag ProVision for performing the exact same rodent control functions that are currently being performed today based on feedback from corporate representatives that up to 14,770 individuals will require certification for only the farms associated with Ag Provision's ownership. These figures are then extrapolated to the entire poultry and swine industry based on the assumption that Ag ProVision represents 25% of the poultry and swine raised in the United States. Based on these estimates, the key cost driver is recordkeeping.

Position Support Information: *Use of Respirators during Application of Rodenticides*

Should loose formulations of rodenticides not currently labeled to require the use of respirator be relabeled requiring their use, a number of processes and procedures would have to be put in place prior to those relabeled rodenticides being used in commercial agricultural facilities. The US Department of Labor, Occupational Safety and Health Administration (OSHA) provides many resources on the use of respirators in the workplace that should guide your agency's understanding of the ramifications of this sort of proposed change. OSHA Respiratory Protection Standards pertaining to the use of respirators can be found in 29 CFR 1910.134 and 29 CFR 1926.103.

All respirators in the workplace must be utilized in accordance with a respiratory protection program administered by a safety official. Key components of these programs are hazard identification, exposure assessment, medical evaluations, respirator and cartridge selections, respirator fit testing, respirator training, record keeping, and cleaning, repair, and maintenance standards. These programs and their required training must be in place before employees can be assigned to use a respirator. Further, not everyone can wear a respirator. Employees **MUST BE MEDICALLY EVALUATED** before being assigned to wear a respirator. Some employees can be initially medically cleared through on-line

questionnaires and/or template procedures based on answers to important questions about their respiratory health. Others will require referral to an occupational health physician for further evaluation before their use of a respirator can be authorized or denied. Ag ProVision asserts that while the administration of a respiratory program might be achievable for its owner companies pertaining to the use of respirators by its employees on corporate farms, the requirements for the development and administration of a respiratory program are beyond the capabilities of the individual private contract farm owner. This makes this type of requirement for the use of rodenticides discriminatory to the ability of private farm owners to raise poultry or swine.

Table 2 provides a conservative estimate of the additional costs drivers to be borne by the owner companies and affiliated farms of Ag ProVision for implementing respiratory programs in order for their employees to perform the exact same rodent control functions that are currently being performed today based on feedback from corporate representatives that approximately 14,700 individuals would be required to wear respirators for the application of rodenticides on poultry and swine operations in the Ag ProVision affiliated family. These figures are then extrapolated based on the assumption that Ag ProVision represents 25% of the poultry and swine raised in the United States. These figures do not take into account the potential need to hire additional employees due to current employees not being medically qualified to wear respirators. Those additional costs are difficult to estimate at this time.

Questions Six: Which chemical rodenticide active ingredients are mostly used when treating for rodent pests? Please specify the active ingredient(s) along with the target pest.

Position: As stated in response to Question One, House mice (*Mus musculus*), Norway rats (*Rattus norvegicus*), and roof rats (*Rattus rattus*) are the rodents most commonly requested for control on poultry and swine operations and in industry affiliated infrastructures such as warehouses, feedmills, and grain storage areas. The active ingredients most utilized by Ag ProVision owner companies and affiliated growers are Bromadiolone, Brodifacoum, and Bromethalin, in a 4-month rotational program developed in cooperation with industry pest control authorities and owner company representatives. However, during times of severe infestation, when bait shyness arises in certain rodent populations, and when resistance is identified, other active ingredients may be utilized.

Position Support Information: While the percent active ingredient varies among the various rodenticide products available, the table below illustrates the percentages by total weight of rodenticides utilized by Ag Provision corporate and contract farms in 2019, 2020, and 2021.

Active Ingredient	Percent Total Weight of Rodenticide Products Used		
	2019	2020	2021
<i>Brodifacoum</i>	43.6%	26.1%	29.7%
<i>Bromadiolone</i>	21.7%	31.8%	30.0%
<i>Bromethalin</i>	16.7%	19.5%	20.6%
<i>Difenacoum</i>	0.2%	0%	0%
<i>Difethialone</i>	5.0%	5.5%	3.6%
<i>Diphacinone</i>	0.4%	0.5%	7.0%
<i>Zinc Phosphide</i>	12.4%	16.6%	9.0%

Question Seven: What measures are taken in order to prevent people, pets and non-target animals to come in contact with rodenticide baits?

Position: Placed baits are contained in safety locked (tamper-resistant), purpose designed rodent bait stations which require a key for access and have pegs inside to hold the bait within the stations. Bait stations are weighted to prevent them from being moved by non-target species from their placed location. All old or unused baits are removed from the stations during cleaning and are properly disposed of.

Baits are stored to keep them out of the reach of children, domestic animals and non-target species, typically in locked cabinets with appropriate warnings on cabinet doors.

Question Eight: What rodent control treatments or methods (including non-chemical methods) does your organization employ?

Position: Successful rodent control, as part of an integrated pest management program, requires proper sanitation, rodent proof construction of facilities, and population reduction with baits, traps, and/or fumigation. Poultry and swine housing provides an ideal environment for rodents to thrive. These facilities offer a ready supply of food, water, and shelter from which the rodents cannot easily be denied access. The first two measures will not eliminate rodents, but they will assist in controlling their numbers. Using cats or other animals as a method of pest exclusion is not acceptable because their presence can also lead to the contamination of animal food. Baiting programs have been previously described in this letter.

Position Support Information: Modern production facilities employ “rodent-proof” construction techniques whenever possible by eliminating all openings through which rodents can enter a structure.

Industry standards call for the use of a minimum of 2" thick reinforced concrete (3.75" if not reinforced), 24 gauge or heavier sheet metal, 19 gauge 0.5 x 0.5 inch hardware cloth, and from 18 to 22 gauge aluminum for flashings and guards. Once constructed, blocking possible pest entry points (e.g., using screens, keeping doors and windows secured, and caulking holes) can also be a deterrent to entry.

Removing shelter outside of the facilities where rodents can hide, breed, and thrive also assists with control. Removal of any debris and control of weeds and grass around structures can be very helpful. Many modern structures are designed with a 3-foot vegetation free perimeter around the structures so that rodents are more exposed and rodent activity is more easily detected. Rats can be discouraged from burrowing near foundations by placing a perimeter of coarse (≥ 1 " diameter) gravel at least 3' wide by 0.5' deep around the building perimeter. Burrowing under concrete walls can be discouraged by burying 0.5 inch hardware cloth downward 12 – 18" with the bottom lip extending outward 12".

Trapping is generally ineffective in live animal operations where alternative food and water are readily available. However, trapping can be effective in warehouses and other areas where alternative food sources are not so readily available. Glue boards quickly lose their effectiveness in the dusty environments of animal production.

EPA Questions Relating to the Use of Rodenticides in Agricultural Fields.

Note: The majority of these questions have been addressed previously.

Question One: Which rodent pests are most common in agricultural areas, including fields, barns, and outbuildings?

Position: House mice (*Mus musculus*), Norway rats (*Rattus norvegicus*), and roof rats (*Rattus rattus*) are the rodents most commonly requested for control on poultry and swine operations and in industry affiliated infrastructures such as warehouses, feedmills, and grain storage areas.

Question Two: Are certain rodenticides preferred for agricultural use? Why?

Position: The active ingredients most utilized by Ag ProVision owner companies and affiliated growers are Bromadiolone, Brodifacoum, and Bromethalin, in a 4-month rotational program developed in cooperation with industry pest control authorities and company representatives. The most effective overall industry control is maintained by alternating these two single feeding anticoagulant baits in rotation with the single feeding non-anticoagulant bait. Other baits are utilized when resistance or bait shyness is identified as contributing to an increase in the rodent population at a location. More information was provided pertaining to this question previously in this letter.

Question Three: How do farmers control rodent pests in your area? Do they control them themselves and/or do they hire professional applicators/pest control companies to perform pest removal??

Position: Growers control rodent pests on their farms as part of an integrated pest control program as previously described. Professional applicators cannot be used for on-farm control due to biosecurity concerns. Professional applicators are, however, often employed as part of an integrated pest management system for feed mills, hatcheries, and warehouses.

Question Four: Do farms frequently have certified applicators on staff? The farmer, or hired hands?

Position: Growers and their employees are responsible for the pest control programs on their farms. Less than 1% of corporate farm employees have pesticide certification. As stated previously, it is estimated that approximately 30% of contract growers have some form of pesticide certification.

However, the applicability of this certification for the application of restricted use pesticides that are rodenticides varies from state to state. Few if any contract farm employees that currently are performing rodent control procedures have pesticide certification.

Table 1. Estimated Increased Costs to the Swine and Poultry Industry Associated with All Rodenticides as RUP¹

Item	Count	Cost Each	Year One Costs	Annual Costs
Training Materials/Manuals	14,770	\$26.00	\$384,020	\$128,007
Certification Costs	14,770	\$15.00	\$221,550	\$73,850
Training/Test Hours	29,540	\$18.00	\$531,720	\$177,240
Annual Record Keeping Hours/Farm	52 hours/farm 4,200 farms	\$18.00	\$3,931,200	\$3,931,200
Estimated Initial Year/Annual Costs for Additional Training and Record Keeping for Ag ProVision Owner Companies (~ 25% of US Swine & Poultry)			\$5,068,200	\$4,310,297
Estimated Annual Costs for Additional Training and Record Keeping for all US Swine & Poultry			\$20,273,960	\$17,241,187

¹Assumes certifications renewed every three years with two hours/person/renewal

Table 2. Estimated Costs to the Swine and Poultry Industry of Respirator Program Associated with All Rodenticides as RUP

Item	Count	Cost Each	Year One Costs	Annual Costs
Half Mask 3-year Life	14,770	\$107.60	\$1,589,252	\$529,751
Cartridges 12 sets/mask/year	177,240	\$7.50	\$1,329,300	\$1,329,300
Respiratory Program Administration	14,770	\$30.00	\$443,100	\$443,100
Medical Testing	14,770	\$100.00	\$1,477,000	\$492,333
Training and Annual Fit Testing (1 hour)	14,770	\$18.00	\$265,860	\$265,860
Estimated Initial Year/Annual Costs for Respirator Program for Ag ProVision Owner Companies (~ 25% of US Swine & Poultry)			\$5,104,512	\$3,060,344
Estimated Annual Costs for Respirator Program for all US Swine & Poultry			\$20,418,048	\$12,241,376

Appendix C -- Egg Sector Answers to EPA Questions Related to the Use of Rodenticides

The answers below involve egg “layer operations.” At a minimum, this means where the hens are housed and the eggs are being laid, but the sites may also include egg washing and packaging facilities.

General Use of Rodenticides

- 1. For which site(s) (e.g. commercial, institutional, agricultural, residential) are you providing answers?**

Response 1 – Layer operation in Upper Midwest

Response 2 – Layer operation in Northeast

Response 3 – Layer operations in Central Corn Belt

Response 4– Layer operations in Upper Midwest

Response 5 – Layer operations in Upper Midwest

Response 6 – Layer operation in Mid-Atlantic/Notheast

Response 7 – Layer operation in Pacific Region

Response 8 – Layer operation in Northeast

Response 9 – Layer operation, Western Great Plains

Response 10 – Layer operations in Eastern Corn Belt

Response 11 – Layer operations, Corn Belt

Response 12 – Layer operations, Intermountain West

Response 13 – Layer operations, Southeast

Response 14 – Layer operations in Upper Midwest

2. Which rodent pests are most commonly requested for control? Does this differ depending on the site (e.g. urban vs rural?)

Response 1 – Mice. All rural locations.

Response 2 – Rats & Mice. All rural locations.

Response 3 – Mice. All rural sites.

Response 4– Rats & Mice. All rural locations.

Response 5 – Rats & Mice. All rural locations.

Response 6 – Rats & Mice. All rural locations.

Response 7 – Mice and rats. All rural locations.

Response 8 – Field mice

Response 9 – Mice. All rural locations.

Response 10 – Common mice and deer mice. All rural locations.

Response 11 – Mice and rats. All rural locations.

Response 12 – Mice. All locations rural.

Response 13 – The most encountered rodent pests in our region are the house mouse, roof rat, and the Norway/brown/sewer/common/street rat.

Response 14 – Mice (all species) and rats (Norway)

3. Are you and/or your employees certified pesticide applicators? If answering on behalf of a trade organization, can you provide information on the certification rates in your organization?

Response 1 – No

Response 2 – No

Response 3 – One person on staff is certified.

Response 4– Yes

Response 5 – Site managers are certified

Response 6 – Yes, there are 2 certified applicators within our company. There are 6 hours of Private category and 6 hours of Core category every 2 years for continuing education. All personnel that apply rodenticides are trained and documented on application and safety.

Response 7 – We have two staff employees that are certified pest control applicators. We also use third party applicators for the external areas of the chicken barns. The egg processing plant uses third party applicators for internal and external control and monitoring follow all regulations regarding food processing plants.

Response 8 – We use a certified Pest Control company and have 1 employee who has received training and obtained a certificate to apply rodenticide

Response 9 – 1 person on staff is certified. Outside firm is certified.

Response 10 – Yes

Response 11 – We have multiple certified PCO's within our company who oversee pesticide applications. We also use third party companies with certified applicators in conjunction with our internal PCO's.

Response 12 – No

Response 13 – We have on-site pesticide applicators that either hold a license or work directly under the supervision of a pest consultant or certified pesticide applicator.

Response 14 – Two onsite managers maintain private pesticide applicator license. Certified through state agency. Certification for private license is \$50 (commercial \$75) and good for 3 years before renewal needed.

4. After first treating the site, how often and under what circumstances does the applicator return to the site?

Response 1 – Typically weekly

Response 2 – We maintain our own rodenticide baiting program

Response 3 – A monitoring and control program are setup at the site. These are used as a guideline for how to keep rodent populations under control. Regular control program means a continued use of baits on an ongoing basis. If the monitoring program shows an increase in the number corrective actions are taken to reduce the number back down to satisfactory level.

Response 4 – Weekly

Response 5 – Weekly

Response 6 – Enclosed rodent bait stations are checked at least once a month and more often if there is activity, old and moldy bait is refreshed with new bait.

Response 7 – We treat external areas of the barn weekly. We inspect bait stations and only add bait if needed.

Response 8 – Our contract states that pest control company will monitor, treat and service on a weekly basis at all farm locations.

Response 9 – Check monthly or more often if detect increased activity.

Response 10 – 24-48 hours

Response 11 – Rodenticide applicators follow a routine schedule for monitoring the consumption of the rodenticide (weekly, biweekly, monthly). These are based off of approved pest control programs that fall in line with the FDA shell egg rule and NPIP biosecurity program.

Response 12 – Monthly to check bait stations

Response 13 – To comply with the FDA Egg Safety we established and follow an approved pest management plan which includes frequent monitoring of rodent populations and their consumption of rodenticides.

Response 14 – Internal pest control team handles weekly inspections occur in the hen houses. The processing plants also have a third party contracted pest company who conducts once a month inspection or sooner if a problem is identified

5. What affects the cost of rodent control services (e.g. initial vs subsequent visits, a threshold level of pests, multiple different pests, labor, cost of equipment, etc.)?

Response 1 – Certain all these would be factors, but we do internal pest control. The two biggest factors are level of service and biosecurity. In both cases, external pest control companies have been severely lacking which necessitated going to internal servicing.

Response 2 – All of the above

Response 3 – Rodent control is done within the company with the assistance of professional rodent control product experts/vendors. Control services are not utilized on a regular basis in agriculture as it takes ongoing control to maintain appropriate levels of pests. The main expenses in rodent control are price of products such as baits, traps, glue boards, bait stations and the labor put the products to use.

Response 4– Labor and cost of equipment

Response 5 – Pest populations that reach thresholds calling for treatment

Response 6 – Labor and cost of bait affects the cost the most of rodent control.

Response 7 – The cost is mostly fixed, meaning we do a similar service to each building externally and internally as part of a routine program. In the event there is an increase in activity then more service maybe required increasing the costs.

Response 8 – Cost is determined based on the number of locations, it's an all-inclusive fee. The Pest Control company pays for all herbicide, pesticide, bait boxes, inside monitoring stations, repair of supplies and paperwork and reporting.

Response 9 – Cost for outside firm is per visit. \$300 monthly, checking traps and glue boards. Costs of rodenticides and our labor. We estimate annual costs of \$15,000.

Response 10 – Labor and materials, follow up monitoring, and bait station costs initially and replacements.

Response 11 – Rodent activity levels on site – higher levels require more frequent corrective actions to maintain FDA compliance. Corrective actions could include higher number of traps/devices, more frequent service visits, increase in labor hours, etc. Equipment costs – nonfunctional/damaged equipment is replaced routinely.

Response 12 – Labor, pesticide and equipment costs. We have better records and do a more consistent reliable job by doing this internally than outsourcing to 3rd parties. They do a good job for short periods of time, but don't have skin in the game like we do to make sure it is done correctly.

Response 13 – We follow food safety guidelines which outline certain requirements for the pest control program, including the certification of pest consultants, employee training, and approved materials. The base level costs include labor, materials (i.e., baits and traps), training certifications, and maintenance.

Response 14 – Internal pest team: Pest control cost is a consistent labor cost as the pest team are full time employees. The pest program costs vary with rodent population changes and as the cost of bait and/or equipment fluctuate. Contract Service provider: There is an initial start-up fee for stations but the maintenance cost is the monthly service fee. The service is under contract and includes: Monthly station checks, bait refilling, observations of equipment, investigate reported pest issues. Additional costs occur only occur when equipment must be replaced (cost of new station) and if another service is requested outside of the monthly visits.

6. Is there a “base” level of service? If so, what is included? For example, are subsequent visits to the site for carcass removal and checking bait stations included in the initial treatment costs?

Response 1 – N/A

Response 2 – Again, We maintain our own baiting program and all bait stations and monitoring traps are inspected weekly.

Response 3 – n/a

Response 4– Weekly on interior, monthly for exterior

Response 5 – Stations are monitored weekly, carcasses disposed of immediately

Response 6 – Live traps are checked weekly and more bait is applied in areas where there is more rodent pressure.

Response 7 – The cost is mostly fixed, meaning we do a similar service to each building externally and internally as part of a routine program. In the event there is an increase in activity then more service maybe required increasing the costs.

Response 8 – Our contract states that pest control company will monitor, treat and service on a weekly basis at all farm locations.

Response 9 – n/a

Response 10 – No

Response 11 – Each site varies, but has a routine monitoring schedule (weekly, biweekly, monthly). Additional visits are based off of rodent thresholds and corrective actions and increase costs.

Response 12 – Labor, pesticide and equipment costs. We have better records and do a more consistent reliable job by doing this internally than outsourcing to 3rd parties. They do a good job for short periods of time, but don't have skin in the game like we do to make sure it is done correctly.

Response 13 – We follow food safety guidelines which outline certain requirements for the pest control program, including the certification of pest consultants, employee training, and approved materials. The base level costs include labor, materials (i.e., baits and traps), training certifications, and maintenance.

Response 14 – Contract Service provider: There is an initial start up fee for stations but the maintenance cost is the monthly service fee. The service is under contract and includes: Monthly station checks, bait refilling, observations of equipment, investigate reported pest issues. Additional costs occur only occur when equipment must be replaced (cost of new station) and if another service is requested outside of the monthly visits.

7. Which chemical rodenticide active ingredients are mostly used when treating for rodent pests? Please specify the active ingredient(s) along with the target pest.

Response 1 – We use a rotating basis for rodent control based on time of year, pest prevalence level, and bait acceptance. Currently used actives for control of rodents includes bromethalin, bromadiolone, difethialone, brodifacoum, difenacoum, diphenadoine, and chorophacinone.

Response 2 – Please see the attached for the active ingredients used with the rodenticide bait rotation calendar.

Response 3 – Difethialone, Bromadiolone, Bromethalin, Chlorophacinone, Brodifacoum, Diphacinone, Difenacoum, Cholecalciferol, Warfarin

Response 4– Brodifacoum

Response 5 – Difethialone, Bromadiolone, Bromethalin, Brodifacoum, Zinc phosphide

Response 6 – Primarily we use Diphacinone, Bromethalin, Brodifacoum, and Zinc Phosphide for mice.

- Response 7 – Anticoagulant, for day-to-day use as part of an ongoing management plan. Acute toxicity for barn clean outs or depopulation of chicken barns when all feed water and litter are removed from the barns.
- Response 8 – Difethialone and Bromadiolone
- Response 9 – 2nd gen ARs in a semi-annual rotation of different products.
- Response 10 – Bromadiolone, bromethalin, brodifacoum, difenacoum, difethialone
- Response 11 – Difethialone, Brodifacoum, Bromadiolone, Bromethalin
- Response 12 – Target pest: Mice. Brodifacoum, Bromadiolone, Diethialone, Bromethalin, Zinc Phosphide, Cholecaliferol, Diphacinone, Warfarin, Difenacoum.
- Response 13 – The FDA’s Egg Safety Rule requires the use of rodenticides on a strict rotation schedule, so all available and approved rodenticides are permissible for use undermost plans. Some ingredients/brands may or may not be available at times, so this is necessary to ensure widespread availability and compliance. This is for all the rodent species we encounter.
- Response 14 – Interior (in agriculture and livestock buildings) to target mice, Difethialone, Bromadiolone, Bromethalin. Exterior bait stations is 100% Bromaiolone all-weather block baits to target mice and Norway rats

8. What measures are taken in order to prevent people, pets and non-target animals to come in contact with rodenticide baits?

- Response 1 – Bait is dispensed in tamper-proof and “non-target animal” proof containers. Rodents must enter into containers to feed and bait is secured within the station to prevent bait transfer outside the container. Knowledge of target pest and station placement is also very important and reviewed with staff (and verified on a periodic basis).
- Response 2 – Appropriately sized bait stations are used to prevent people, pets and non—target animals from coming in contact with poisonous baits.
- Response 3 – The use of bait stations is used to prevent non-target animals and people from getting to the bait. People are provided with the appropriate PPE to put to handle baiting activities.
- Response 4– Use bait stations, all tamper resistant
- Response 5 – Farm sites are all gated and situated far from any residences. Bait stations are used for all baits.
- Response 6 – All bait stations are covered and only trained personnel are allowed to inspect and rebait. Outside bait stations are covered as well the opening is small enough for only mice to enter.
- Response 7 – Only EPA approved bait stations are used externally and internally.

- Response 8 – All bait is put into a locked (special key) bait box that is staked into the ground, holes in and out of box are only big enough for small animals. No bait is used inside of any building, only monitoring stations are used inside.
- Response 9 – Commercially purchased bait stations
- Response 10 – Locking/weighted bait stations
- Response 11 – Rodenticides are placed in bait tubes or tamper proof bait stations and handled only by authorized and trained personnel. Barn workers are notified when application is done and do not come in contact with the products.
- Response 12 – All bait is placed in locked & anchored bait stations so only mice or smaller creatures can access it.
- Response 13 – We follow strict bio-security protocols and maintain controlled access to our facilities. All visitors must sign in and be interviewed before access is allowed onto the farm. This is for the safety of our birds as well as our employees. Any employee applying rodenticides are properly trained in the handle and use of each rodenticide according to the manufacturer's label. Rodenticides are applied in tamper-proof bait stations when appropriate or necessary.
- Response 14 – Use tamperproof (lockable) bait stations specifically for rats and mice and put bait in locations not easily accessed by non-target animals. Location of stations are on company property and used in appropriate locations and current maps of the station locations are maintained. In addition, only certain individuals with proper training are allowed access to the baits.

9. What rodent control treatments or methods (including non-chemical methods) does your organization employ?

- Response 1 – Primarily the use of baits. Barn fumigation conducted between flocks.
- Response 2 – Snap traps, bucket lid slip slides, sticky traps and the baiting program mentioned above.
- Response 3 – A wide variety of baits are used to control pests in different environments. Additionally, mechanical traps and glue boards are used to eliminate rodents. Eliminating areas for harborage on rodents is an ongoing task including building maintenance, trash removal, feed spill cleanup, etc.
- Response 4– Multicatch traps plus rodenticides.
- Response 5 – Exclusion, sanitation, traps & rodenticides
- Response 6 – Cleanliness and eliminate harborage for rodents, seal burrows and openings ¼" or greater, live traps, and glue boards. If EPA would limit the use of rodenticides or make it more difficult to administer rodent control the consequences could be very harmful. Rodents can carry Lice, Fowl Cholera, Bordetellosis, Leptospirosis, Salmonellosis, and many more diseases which can affect health and food safety. Rodents are also capable of doing a lot of damage to structures, insulation, and wiring, fire hazard. A female

mouse can produce 6-8 litters a year with 5 to 6 pups, 50% female and can start reproducing in 6 to 10 weeks. One should be able to see the high number of rodents the operation could possibly have in a relative short time.

- Response 7 – Live catch and snap traps are use within the barns as a monitoring method. The numbers are recorded for compliance reasons with the FDA Egg Rule.
- Response 8 – Rodenticides and also non-lethal blocks that just are for monitoring (organic site) are used outside of buildings and monitoring stations are used for inside of buildings.
- Response 9 – Live traps and rodent bait stations
- Response 10 – Rodenticide baiting (blocks, pellets, meal bait), glueborads, building out points of entry, removal of harborage areas, keeping vegetation (grass) short, 36-48” rock border next to houses, no standing water
- Response 11 – Bait stations. Metal traps. Bait rotations - product used is based on active ingredient and utilized on a rotational basis to prevent resistance. Tracking powder. Routine inspection and repair of facility conditions (entry points). Routine inspection and removal of harborage areas. Vegetation free buffer zones around barns and processing buildings. Perimeter buffer areas along interior walls of processing facilities. At minimum annual removal of manure on site. Maintenance of vegetative areas on premise.
- Response 12 – For areas outside, areas where our birds cannot access, or in processing areas , offices, dry or cold storage areas we use rodenticides in bait stations. Some rodenticides blocks can be nailed to the wall at the wall-floor junction in lower level of deep pit houses where manure is stored. In processing, offices, dry or cold storage areas we use snap traps and Tin Cat Traps. By far the most effective control measure is to remove manure at least every three days to minimize breeding areas.
- Response 13 – We utilize a number of non-chemical and chemical methods depending on the facility and situation. These include: snap traps, glue board traps, liquid tox, meal baits, soft baits, block baits, place packs, multi catch devices, pellet baits, and tracking powder. We also strive to eliminate harborage areas, food availability, and habitat through exclusion and sanitation.
- Response 14 – Placing bait inside and outside, sealing doorways, holes, and openings, and reducing rodent harborage areas by keeping items picked up inside and outside. Maintaining grounds, keeping areas mowed, utilizing stones along the exteriors of building to deter rodent activity. Live traps are used to index rodent populations or used in areas sensitive to bait (food processing facilities) to pests.

Rodenticides in Agricultural Fields

EPA would appreciate additional information about use of rodenticides in agricultural production.

1. Which rodent pests are most common in agricultural areas, including fields, barns, and outbuildings

Response 1 – House and field mice.

Response 2 – Rats and Mice

Response 3 – Mice are the predominant pest for our operations.

Response 4– Mice

Response 5 – Rats and Mice

Response 6 – Mice, some rats

Response 7 – n/a

Response 8 – Mice, occasionally Moles, Voles, rarely Rats

Response 9 – n/a

Response 10 – Field mice, deer mice and the occasional Norway rat

Response 11 – House mice

Response 12 – Mice.

Response 13 – The most encountered rodent pests in the poultry industry are the house mouse, roof rat, and the Norway/brown/sewer/common/street rat. Occasionally, several species of field mice are found as well.

Response 14 – Mice (of all species), and Norway Rats (shrews, voles and moles are common in the fields but not specifically targeted in our pest program)

2. Are certain rodenticides preferred for agricultural use? Why?

Response 1 – Extruded block baits are the most preferred as they are very durable; weather resistant; resistant to mold/ degradation; are very easy to secure into bait stations; allow mice the ability to gnaw; do not serve as strong attractants to non-target pests; and come in a wide range of textures, flavors, and active ingredients. They lend themselves well to a bait rotation schedule. Soft baits also have good utility depending upon circumstances, including usage in areas like attics. Are excellent for population spikes or targeted areas of activity.

Response 2 – N.R.

- Response 3 – It is important to have a variety of rodenticides to be able to use as rodents will develop a resistance quickly. Rodent programs are set up to rotate between products with active ingredients to reduce the risk of resistance buildup. Rotating between active ingredients is important but also must be done with products that the rodents will eat. Eliminating rodents in agricultural settings can be challenging as the rodents are eating the feed the livestock are eating as well. Some products take multiple feedings before a rodent is killed. Products that have a higher kill rate with less feedings are preferred; however, some of these products are not eaten as well by the rodents. For example, block bait is eaten by rodents in the attic of a poultry barn but not on the level where the birds are as there is access to feed there. Typically, meal baits and soft baits are preferred on this level. When the birds and thus feed are taken out of the building rodents are forced to eat the bait, stronger baits with more bitter taste can be used at this time as the rodents have no other option. Eliminating any active ingredient could be detrimental to our programs as we need to be able to rotate between products on a timely manner to reduce resistance buildup and to accommodate the preference of the rodents in different environments.
- Response 4– Only organic certified products on our crop fields
- Response 5 – Yes, depending on time of year and availability
- Response 6 – There are many but mostly would be anticoagulants. Zinc Phosphide works best when rodents are bait shy. Rats tend to be more bait shy than mice.
- Response 7 – n/a
- Response 8 – We hire a Pest Control company who purchases products, they use these products in agricultural and other commercial settings
- Response 9 – n/a
- Response 10 – Block baits or soft packet baits are preferred for longevity and ease of placement.
- Response 11 – Yes, product used is based on active ingredient and utilized on a rotational basis to prevent resistance.
- Response 12 – Not particularly. We use what seems to work best and do a rotation of different rodenticides per manufactures recommendations.
- Response 13 – No. Preference is given to rodenticide formulations that are shown to have the highest palatability to a particular rodent population at that time. This can change season to season, species to species, and location to location.
- Response 14 – Most rodenticides have applicable qualities to the agriculture industry, we most commonly use soft and block baits, but throw packs and meal baits can be successfully used when addressing a pest challenge.

3. **How do farmers control rodent pests in your area? Do they control them themselves and/or do they hire professional applicators/pest control companies to perform pest removal? As mentioned above we maintain our own rodent program.**

- Response 1 – Most farmers control pests themselves in our area. The level of service and knowledge of private applicators is severely limited as it relates to larger scale agricultural operations. They may know pests, but they severely lack understanding of the underpinnings of the larger agricultural operation and pest control as it relates to those activities. Further, private application of most rodenticides does not require a license with application based on following manufacturer’s directions so long as employee’s conducting the activities are on the company’s health care program.
- Response 2 – We must maintain a program that provides documentation for our FDA “ Egg Safety Program”.
- Response 3 – Rodent control is an ongoing/routine task for farmers; therefor, control is done by farmers with the advice from pest control companies. Monitoring programs are setup to see how well our control program is doing and show us where we need to focus our attention. Baiting is a regular job done by employees to mitigate pests.
- Response 4– n/a
- Response 5 – Generally conduct own rodent control programs
- Response 6 – Farms usually do not have certified applicators
- Response 7 – n/a
- Response 8 – In our state, pesticides must be **registered** before they can be sold, distributed, or used in the state. Pesticide applicators must be **certified** before they can apply pesticides commercially. Businesses must be **registered** with the pesticide agency before they can apply pesticides or offer services.
- Response 9 – n/a
- Response 10 – They do it themselves
- Response 11 – Control measures listed in question 9 above, utilize both internal and professional applicators.
- Response 12 – We have an internal rodent program. On a very rare occasion, we might hire a pest control consultant to look at our program.
- Response 13 – Small contract farmers usually attempt to handle rodent problems themselves. However, in our large facilities, we have dedicated pest control employees that monitor and treat for pests, including rodents.
- Response 14 – It is a common practice in our state to have someone on site with a current Pesticide Applicator license.

4. Do farms frequently have certified applicators on staff?

- Response 1 – Most do not. It is simply too expensive and there is extreme ambiguity related to what license is the “correct” license to have based on purpose. Further, at least for us, vendors provide a wide range of counselling and suggestions. A number of rodenticide manufacture service reps (not salespeople, but technical service/ subject matter experts) have also come out on site to assist with and advise on pest control program.
- Response 2 – To the best of my knowledge, most farmers and farmers employees maintain their own pest control program. I think this may be dependent on the size of the operation and the severity of the rodent control situation.
- Response 3 – Having a certified applicator on staff might be the case for larger operations. Smaller operations may not have one on staff, instead they may utilize the expertise of the suppliers of their bait to accommodate their needs and give recommendations.
- Response 4– n/a
- Response 5 – One certified applicator on staff at each farm
- Response 6 – n/a
- Response 7 – n/a
- Response 8 – Some farms do have someone on staff that has their Pesticide Applicator license, some hire a company to come on-site to complete the work for them. We have an employee that has received training through our Pest Control company and has a certificate to use pesticide, he works under the direction of the Pest Control company but is a farm employee.
- Response 9 – n/a
- Response 10 – We have three certified on staff because of the size of our company.
- Response 11 – A mix of farms that have a PCO on staff and those that don't, which use third party PCO's or individuals trained by PCO's. Any employee that handles pesticides/rodenticides are trained servicepersons.
- Response 12 – No. Restricted Use pesticides all require more training and paperwork. I would estimate 20% additional for each, but the more important factor would be for us not to have the flexibility of more than one applicator to quickly address the needed corrective actions.
- Response 13 – Our facilities either utilize certified pesticide applicators or trained individuals working under the supervision of a certified pest control company.
- Response 14 – In our state, requirements are as follows: require individuals to be either a certified pesticide applicator or registered applicator to apply a pesticide for a commercial purpose or in the course of his or her employment. A private agricultural applicator, who plans to use a restricted-use pesticide product, may apply for a private pesticide applicator certification credential. A person may apply a general use pesticide for a private agricultural purpose without being a certified applicator or registered applicator

Appendix D – FDA Egg Safety Rule 21 CFR 118.4

5/20/2019

CFR - Code of Federal Regulations Title 21

Poultry house means a building, other structure, or separate section within a structure used to house poultry. For structures comprising more than one section containing poultry, each section that is separated from the other sections is considered a separate house.

Producer means a person who owns and/or operates a poultry house containing laying hens which produce shell eggs for human consumption.

Shell egg (or egg) means the egg of the domesticated chicken.

Shell egg processing facility means a facility that processes (e.g., washes, grades, packs) shell eggs for the table egg market.

Treatment (or treated) means a technology or process that achieves at least a 5-log destruction of SE for shell eggs, or the processing of egg products in accordance with the Egg Products Inspection Act.

Sec. 118.4 Salmonella Enteritidis (SE) prevention measures.

You must follow the SE prevention measures set forth in this section. In addition, you must have and implement a written SE prevention plan that is specific to each farm where you produce eggs and that includes, at a minimum, the following SE prevention measures:

(a) *Pullets*. You must procure pullets that are SE monitored or raise pullets under SE monitored conditions. "SE monitored" means the pullets are raised under SE control conditions that prevent SE, including:

(1) *Procurement of chicks*. Chicks are procured from SE-monitored breeder flocks that meet the National Poultry Improvement Plan's standards for "U.S. S. Enteritidis Clean" status (9 CFR 145.23(d)) or equivalent standard;

(2) *Environmental testing*. (i) The pullet environment is tested for SE when pullets are 14 to 16 weeks of age;

(ii) If the environmental test required in paragraph (a)(2)(i) of this section is negative, you do not need to perform any additional testing of those birds or their environment until the environmental test at 40 to 45 weeks of age specified in 118.5(a); and

(iii) If the environmental test required in paragraph (a)(2)(i) of this section is positive, you must begin egg testing, as specified in 118.6, within 2 weeks of the start of egg laying.

(3) *Cleaning and disinfection*. If the environmental test required in paragraph (a)(2) of this section is positive, the pullet environment is cleaned and disinfected, to include:

(i) Removal of all visible manure;

(ii) Dry cleaning the positive pullet house to remove dust, feathers, and old feed; and

(iii) Following cleaning, disinfection of the positive pullet house with spray, aerosol, fumigation, or another appropriate disinfection method.

(b) *Biosecurity*. As part of this program, you must take steps to ensure that there is no introduction or transfer of SE into or among poultry houses. Among such biosecurity measures you must, at a minimum:

(1) Limit visitors on the farm and in the poultry houses;

(2) Maintain practices that will protect against cross contamination when equipment is moved among poultry houses;

(3) Maintain practices that will protect against cross contamination when persons move between poultry houses;

(4) Prevent stray poultry, wild birds, cats, and other animals from entering poultry houses; and

(5) Not allow employees to keep birds at home.

(c) *Rodents, flies, and other pest control*. As part of this program, you must:

(1) Monitor for rodents by visual inspection and mechanical traps or glueboards or another appropriate monitoring method and, when monitoring indicates unacceptable rodent activity within a poultry house, use appropriate methods to achieve satisfactory rodent control;

(2) Monitor for flies by spot cards, Scudder grills, or sticky traps or another appropriate monitoring method and, when monitoring indicates unacceptable fly activity within a poultry house, use appropriate methods to achieve satisfactory fly control.

(3) Remove debris within a poultry house and vegetation and debris outside a poultry house that may provide harborage for pests.

(d) *Cleaning and disinfection*. You must clean and disinfect the poultry house according to these procedures before new laying hens are added to the house, if you have had an environmental test or an egg test that was positive for SE at any point during the life of a flock that was housed in the poultry house prior to depopulation. As part of the cleaning and disinfection procedures, you must:

(1) Remove all visible manure;

(2) Dry clean the positive poultry house to remove dust, feathers, and old feed; and

(3) Following cleaning, disinfect the positive poultry house with spray, aerosol, fumigation, or another appropriate disinfection method.

(e) *Refrigeration*. You must hold and transport eggs at or below 45 deg. F ambient temperature beginning 36 hours after time of lay. If the eggs are to be processed as table eggs and are not processed for the

Appendix E – FDA’s Guidance to Egg Sector for Monitoring Rodent Populations.

Contains Nonbinding Recommendations

Activities at each farm can be divided into “dirty” and “clean” ones. Manure handling, dead bird disposal, disposal of trapped pests, and removal of breeding areas for pests are examples of dirty activities. Examples of clean activities are egg handling, chick handling, movement of birds, and other activities involving contact with live birds. When working with or in the presence of live birds, workers should always move from the youngest birds to the oldest. Personnel and equipment used in dirty activities should be cleaned and disinfected before coming into contact with personnel and equipment involved in clean activities. If equipment or personnel must be shared between the two types of activities, then they should always go from clean activities to dirty ones and not the reverse.

Sanitation

The goal of farm sanitation is to maintain a clean environment for the birds. Sanitation reduces the likelihood of SE coming in contact with the birds, and is, therefore, an important component of biosecurity. Daily attention should be paid to the proper management and disposal of dead birds, loose birds, spilled feed, manure, and refuse. Dead birds should be removed and disposed of as quickly as possible. Daily collection of mortality and disposal will reduce contact with insects, rodents, or other animals that could act as SE vectors. New birds should always be placed in a cleaned and disinfected house.

Spilled feed should not be allowed to amass in or around poultry houses, as it will attract insects, rodents, and wild birds, all of which can bring SE onto the farm and into the houses. Poultry manure and litter should be managed properly so it does not attract flies and other insects or serve as a habitat for rodents that carry SE into the houses. Manure should be kept as dry as possible to make it less attractive to flies and other insects. Special attention should be given to preventing water system leaks and promptly repairing leaks when found. Disposal of cracked eggs into the manure should be avoided since they are an attractive food source for both insects and rodents. Poultry houses should be properly ventilated, as weather permits, since proper ventilation dilutes microbe populations and reduces disease buildup.

Proper disposal of manure and all refuse on the farm is important in eliminating rodent harborage sites. Trash and manure piles are also attractive to wild birds that may carry SE.

(Refs. 3, 4, 10, and 15)

2. Rodents, Flies, and Other Pest Control (§ 118.4(c))

As part of a producer’s pest control program, the egg rule requires the following:

- Monitoring for rodents by visual inspection and mechanical traps or glueboards or another appropriate monitoring method and, when monitoring indicates unacceptable rodent activity within a poultry house, using appropriate methods to achieve satisfactory rodent control (§ 118.4(c)(1));
- Monitoring for flies by spot cards, Scudder grills, or sticky traps or another appropriate monitoring method and, when monitoring indicates unacceptable fly activity within a poultry house, using appropriate methods to achieve satisfactory fly control (§ 118.4(c)(2)); and