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Management of Wildlife and Domestic Animals on Your Farm

GOOD AGRICULTURAL PRACTICES

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Introduction

Good Agricultural Practices (GAPs) are necessary to ensure that fresh fruits and vegetables are harvested, handled, and packaged in a sanitary manner. Field crops are at a higher food safety risk than processed foods because of regular exposure to several sources of contamination, including soil, manure, human handling, domestic and wild animals, and water. While it is impossible to completely eliminate these risks, GAPs ensure that these risks are as small as possible when implemented correctly. For example, domestic and wild animals entering the crop production areas is a threat to food safety because animals carry human pathogens. Animals can contaminate crops and the production areas as they move through them, making it important to minimize their presence and movement in crop production areas.

Current Best Practices

Domestic/Work Animals

It is impossible to completely prevent wild animals from infiltrating the crop production areas, since they are naturally present. However, since domestic and work animals are under the farm's control, their presence and movement in and around the production areas can be monitored and controlled to an extent. Domesticated animals are allowed on the field for many reasons, including managing and deterring wildlife, pets accompanying farm operators, grazing crop residue while land is not being used for production, and for pest control such as ranging chickens or guinea fowl.

In these and similar situations, as a part of risk management, farms should have standard operating procedures (SOPs) to monitor animal tracks, deal with feces, and correct unexpected incidents where pets or farm animals gain access to production and other restricted areas. Working or draft animals should be kept away from areas where edible crops are present as much as possible. Workers handling animals on the farm also pose a risk of cross-contamination and should be trained to effectively sanitize their hands, clothes, and footwear before they handle produce. Cross-contamination could be best managed by assigning separate work crews to produce and livestock areas. If livestock are present on the farm or a neighboring farm, adequate physical or natural barriers (tree lines, ditches, cover crop) should be present to stop runoffs and prevent cross-contamination.

Wildlife Management

It's important to know the potential impact wildlife can have on your overall farming operation, especially when you are getting your GAP certification. Wildlife may be present on your farm year-round or they may only be there for short periods, such as during fall or spring migration. It is important to be aware of the associated risks wildlife and other animals may pose to production on your farm and also to understand the federal, state, and local laws that may influence how you can deal with them on your property. For more information, refer to the Natural Resources and Conservation Services at https://producesafetyalliance.cornell.edu/sites/producesafetyalliance.cornell.edu/files/shared/documents/NRCS_Produce_Safety_and_Conservation.pdf.

Wildlife and Agriculture

Controlling the presence and occurrence rates of wildlife scat or feces within your production and processing areas is a primary concern. This issue, above all else, is believed to be the main source of food contamination from wildlife and other animals.

An important aspect of all of this is the ability to identify the tracks and scat of the wildlife within your productions areas. A good mammal field guide will have pictures and descriptions that will aid you in determining what species are using your fields. Once you have identified them, you can start coming up with a plan to limit their use of production areas.

Certain species that may pose a concern to production may be protected by federal, state, or local laws. For example, most birds are protected by the federal Migratory Bird Treaty Act of 1918. Under the act, landowners may not harass or kill these species without a permit from the U.S. Fish and Wildlife Agency. However, most mammals in Kentucky fall under Kentucky Revised Statute 150.170, which allows landowners to kill any wildlife causing damage to their property. Before you start to implement any kind of lethal control on your property, contact the Kentucky Department of Fish and Wildlife Resources to determine if the species are protected.

Assessing Your Farm and Identifying Priorities

Understanding what parts of your farm are being used or will potentially be used by wildlife is important to managing wildlife in your operation. However, this can be very difficult to determine because there are so many different wildlife species present and all have different habitats, food requirements, and behaviors. The majority of wildlife damage has been shown to occur in small enclosed fields (less than 5 acres) and close to field edges where cover is present. Cover is generally woody plants or grasses that allow a specific wildlife species to remain relatively unseen and therefore adding a level of security. Paying significantly more attention to areas of your operation that fall into these categories will help you begin to identify potential areas of concern. These would also be the first areas to implement any potential deterrence or exclosures.

Walking your production areas and looking for evidence of wildlife is an important part of the wildlife section for GAP certification. You should flag any areas where you find scat in production fields. Having a plan in place to both regularly check fields for, and deal with, scat you find is an important part of the inspection. Dealing with scat can be as simple as marking and leaving it in the field and then avoiding harvesting any produce within a given distance (for instance, a 3-foot circle) around the scat.

Limiting Wildlife Use of Produce, Facilities, and Fields

To limit the possibilities of finding scat in your field, take steps to manage the situation, including installing exclosures, using deterrents, or altering the landscape around your production areas to limit available habitat.

Exclosures

Around production and agriculture buildings, exclosures such as fences and screens are the best method for keeping wildlife from causing issues with your produce. The first step is to check buildings for openings that can allow small mammals, birds, or other wildlife the opportunity to get inside. Secure problem areas you've found with small wire fencing, as small as you can obtain, to keep those wildlife out. You should check these exclosure measures regularly to make sure they are still in place and working correctly.

Fencing is another way to keep out most mammals and some birds from your production fields. Multiple fencing options exist and they can range in price from relatively inexpensive for small plots to the tens of thousands to fence in multiple acres. Be aware that although it may be a big investment to fence large areas, such as fields larger than three acres, they generally pay off with minimal upkeep costs in the long run.

Electric Fencing

Having both a portable and permanent design, electric fencing may be a good investment for producers who have smaller field (less than 2 acres) or multiple small fields (Figure 1). These fences can protect against large mammals such as deer and bears along with smaller ones such as raccoons and coyotes if you run electrified wires at both higher and lower levels. To achieve control for deer and elk, an offset design is necessary. These fences cost around $1,000 to $1,200 per acre and will last for several years. You can power them with a solar panel or connect them directly to an electric line. They take only hours to set up and can be broken down and moved to protect different crop fields as they near harvest time. Upkeep includes ensuring that plants are not touching the fence, which will cause the hot wires to be grounded, rendering the entire fence ineffective.

Figure 1. Offset electric fence design that is effective for most mammals in Kentucky. The offset is approximately 3 feet.

Figure 2. Example of a high plastic fence meant to exclude deer along with an owl decoy deterrent on the fence post to help keep birds away.

Plastic or Metal High Fences

Plastic or metal fencing taller than 8 feet will protect crops from deer and elk. Plastic fencing is less expensive than metal and is easier and cheaper to install, but it will not last as long and will need

slightly more upkeep. Plastic types of fences are good for smaller scale protection, but metal is much better to use on a larger scale.

Deterrents

Deterrents can also help keep animals out of agricultural fields. Propane cannons, balloons, predator decoys, and other scare devices are all examples of deterrents that can be implemented on a farm. However, their effectiveness decreases over time as wildlife get used to their presence. It is very hard to predict how long any of these methods work. You should move or change deterrents every few days to keep wildlife from getting used to them too quickly. Simply moving a deterrent in and around your field can give you a few more days of effectiveness.

Spray deterrents and other homemade remedies are not recommended, because their effectiveness is unproven.

Habitat Modification

Modifying the areas around productions fields is one of the most effective ways to control wildlife. Eliminating hedgerows, forested areas, and tall grasses around your fields will cut back on comfortable places for animals to hide and live near your production areas.

Population Control

When dealing with larger species such as white-tailed deer, your strategy may need to include population control by hunting on your property. This approach only works if hunters are consistently harvesting large numbers of females during the hunting season. The same holds true for smaller species such as raccoons, where harvesting females in the winter will help lower overall raccoon numbers the following spring.

Recommendations

It is important to routinely check production areas for the presence of wildlife and identify which species are there. Determine how often they are there and whether their presence affects your production. Train your farm staff in wildlife track and scat identification and have a field guide on hand to help. If animals are regularly showing up where you do not want to see them, you may need to change the habitat, place deterrents, or build exclosures as needed.

Conclusion

Domestic and work animals are beneficial to the farm in many ways, but since they can harbor human pathogens, they are a major source of contamination. Proper risk management, aided by SOPs and procedures to track animal movement, take care of animal droppings, and enforce proper sanitation practices for personnel and equipment can minimize food safety risks.

No matter how your farm operates, wildlife will always be an issue, from large farms to those completely in high tunnels. Understanding how different animals behave and respond to stimuli may help limit the impact wildlife have on your farming operation.

Wildlife can be beneficial or problematic for agriculture. Negative impact of wildlife is well known, with many different species causing direct damage to plants through consumption or trampling. However, it is easy to forget that wildlife can aid in agriculture production, such as the role of pollinators and resulting impacts they can have on crop yields. With this in mind, it is important to strike a balance while trying to manage your farm for wildlife.

Know the cost and benefits of multiple techniques of wildlife control, all of which will vary depending on your personal situation. Exclosures and habitat modification are generally the most effective methods to help limit wildlife-related issues in an agricultural landscape. It is important to remember that removing all wildlife habitat from your farm has the possibility of being costlier in the long run as those areas tend to have multiple and sometimes beneficial effects on your farm environment, including soil and water conservation.

References

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