

On-Farm Geese Management

Updated May 2020



Diversified vegetable field denuded by geese. Desert Farming Initiative, November 2019

The most common damage that geese cause to agricultural resources is the consumption of crops. Other impacts include trampling of emerging plants, increased erosion and runoff due to cover crop consumption, and contamination of produce. The accumulation of bird feces on agricultural land presents a human health and food safety risk – geese and other wild birds can carry pathogens such as *E. coli* 0157.

To mitigate crop damage from geese and prevent contamination of produce, it is important to vary tactics and be persistent. Included below are some examples of techniques and methods that can be used to prevent and mitigate the presence of geese on agricultural land, along with policies that can be incorporated in to a farm food safety plan. Note that Canada geese are a protected migratory bird species; it is prohibited to interfere with them when breeding and a permit is required to capture or kill individuals. Contact the [Nevada Department of Wildlife](#) for further information.

Preventative Measures:

- Habitat modification: Install vertical, sight limiting components such as hedgerows trees and shrubs. Another option is to plant a lure crop, such as succulent grasses, that will attract geese away from valuable crops.
- Barriers and fencing: Construct these barriers from woven wire, poultry wire, plastic snow fence, chain link, netting, pickets, strands of wire or row cover. Fences should be at least 30 inches high with openings not larger than 2-3 inches. Hooped row cover works best as geese will continue to move across floating row cover and potentially contaminate it and crops beneath. However, hooped row cover can subject crops to excessive heat during summer months.
- Encouraging wild predators: Install nesting boxes for barn owls to deter geese and rodents. A guide to building your own nesting box can be found below. Weigh the pros and cons of encouraging other wildlife activity.
- Use of domesticated animals: The use of dogs is not recommended for deterring geese and other birds due to food safety risks. Consult with the U.S. Fish and Wildlife Service (USFWS), state, and local agencies regarding use of dogs or other domestic animals to deter or haze geese.



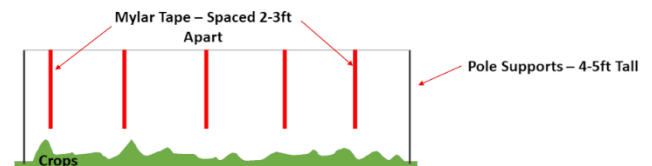
Floating row cover contaminated by geese.

Active Management Options:

- Gas-Operated Cannons: Must be moved every 2-3 days to prevent habituation. Use may not be feasible in urban environments. Regular maintenance is required.
- Pyrotechnics: Includes banger/whistler cartridges, shell crackers, flares, firecrackers, cartouche anti peril aviaire (CAPA) cartridges, and rockets, that produce a loud blast or scream accompanied by smoke and a flash of light. Effective at hazing birds when used in addition to other hazing techniques. Personnel should be trained to use pyrotechnics and should wear eye protection and ear protection at all times. Pyrotechnics are fire hazards which may restrict their use in fire-prone areas. Use may not be feasible/allowed in urban environments.
- Visual Frightening Devices:
 - Flagging: Flags can be placed on 4-foot stakes at approximately one flag per yard, or varied according to supplies available and observed effectiveness.
 - Lasers: Lasers are most effective before dawn or after dusk. Lasers using more than 5.0 mW of power require a variance (permit) from the Food and Drug Administration (FDA).
 - Predator Decoys: Decoys need to be moved every 24-48 hours to prevent habituation and can include coyotes, predator eye balloons, etc.
 - Mylar Tape: Tape can be tied to fishing line or cord over rows of crops in a grid pattern to disrupt birds from getting close to crops. See diagram below.



Flagging, coyote decoys, motion activated sprinkler and predator eye balloon. Desert Farming Initiative, September 2019, May 2020



A potential design for flagging. Courtesy of Nevada Department of Wildlife. October 2019

- Auditory-Visual Frightening Devices: Includes radio-controlled model aircraft, helicopters, boats, and motion sensor sprinklers. These devices can require some skill to operate and maintain. Sprinklers may need to be moved frequently to prevent habituation.
- Chemical Repellents: Methyl anthranilate is a compound derived from concord grapes and is approved for human consumption by the FDA. Methyl anthranilate has been found to be offensive to birds by affecting the trigeminal receptors in the mouth. There are methyl anthranilate products registered with the EPA that are repellents for geese including Rejex-it Migrate®, Rejex-it Fog Force® (TP -40), Liquid Fence Goose Repellent®, and Bird Shield®. Plantskydd® may also be effective. Frequent reapplication is likely necessary to ensure adequate coverage during the growing season.

Suggested Harvest and Post-Harvest Policies:

- Do not harvest and/or discard any produce that is visibly contaminated with fecal matter.
- Conduct pre-harvest risk assessments before every harvest; keep a record of these assessments to aid in anticipating future wildlife activity.
- Consistently flag/mark and isolate known contaminated areas.
- Clean and sanitize tools that are used in the area affected by wild bird activity; this prevents cross-contamination of produce and other areas of the farm.

- Replace contaminated row cover.
- Use a variety of preventative and active management tactics persistently.

Geese Management Supplies:

Management Supplies	Source of Supplies	Cost of Supplies
Row cover	growerssupply.com (83 in x 1,000 ft roll)	starting at \$115
Predator Eye Balloons	Johnny's Selected Seeds (package of 3)	\$40
Coyote Decoys	Walmart , Cabela's , Amazon , Lowe's	\$30-\$100
Mylar Tape	ULINE , Amazon , Home Depot	\$10-\$100
Airhorns	ULINE , Amazon , Walmart , Target	\$10-\$30
Motion Sensor Sprinklers	Amazon , Home Depot , Walmart , Lowe's	\$20-\$300
Gas-Operated Cannons	Amazon , Good Life , Nixalite , Forestry Supplier	\$240-\$650
Pyrotechnics	Sutton Ag Enterprises , Margo Supplies LTD	\$10-\$600
Flag & Stake	Amazon , Home Depot	\$0.30-\$55
Lasers	Grainger Industrial Supply , Amazon , Avian Dissuader	\$200-\$7000
Chemical Repellents	Nixalite , Bird B Gone , Global Industrial	\$10-\$600 per acre
Model Aircraft	Horizon Hobby , Walmart , Amazon	\$45-\$250

Resources:

1. USDA Geese, Ducks, and Coot Management:
https://www.aphis.usda.gov/wildlife_damage/reports/Wildlife%20Damage%20Management%20Technical%20Series/GeeseDucksCoots-WDM-Technical-Series.pdf
2. Barn Owl Nesting Box: <https://drive.google.com/open?id=1qoKymxqpx0Ot-v2WGGHz0r4w9G5VKuyq>,
<https://drive.google.com/open?id=1UCcBZUELpyJnUoQRGnJBsPYyWAfLTqYB>
3. University of Nevada Cooperative Extension Wildlife Management:
<https://www.unce.unr.edu/publications/files/nr/2011/fs1140.pdf>
4. Risk from wild animals in food-borne pathogen contamination of plants: <http://www.wifss.ucdavis.edu/wp-content/uploads/documents/foodSafety/CABReviewWildlife.pdf>
5. Desert Farming Initiative Food Safety Program: farmnevada.org/food-safety

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