

## High Tunnel Food Safety

Jeffrey Stoltzfus, Penn State Extension Educator

**F**ood Safety is becoming more of a focus for vegetable farmers as a result of requirements by buyers and the new FDA regulations. Many of the challenges such as worker health and hygiene, water contamination, and soil amendments are the same whether the crop is grown in the field or in a high tunnel.

High tunnels have some unique benefits as well as challenges when it comes to food safety. When thinking about contamination from animals, high tunnels are easier to keep out animals like deer and larger animals because they are not comfortable in enclosed spaces. Other animals like birds, small animals, and pets, like cats and dogs, find the high tunnel to be an attractive place to be. Birds, for example, tend to invade high tunnels more frequently when the slides are up, because unlike fields they have a place to roost, rest, and inevitably poop. The tunnels often protect small birds from raptors like high flying hawks and eagles making an excellent hangout for small birds. Deterrents such as fake owls or hawks may be helpful. Farm pets can be problematic if sides or ends are open and they cannot be kept out.

I have seen some farmers double up the use of their high tunnels using them to house chickens or other small animals in the winter time. The problem with this practice is that bird dust can accumulate on the plastic and metal structures. This dust can reside there for many months and rain down on the crop on windy days. Chickens are known for carrying salmonella, a dangerous bacteria that can cause severe

illnesses. It can be found on all parts of the chicken, even the feathers. Chickens and produce can't mix. In addition, I have known organic farmers who use chickens in the produce field for insect control, but this can also be a dangerous practice from a food safety perspective.



*Jeffrey Stoltzfus*

*Photo: Penn State Extension*

Worker hygiene is always important in vegetable fields. It's important to make sure workers are not bringing dangerous bacteria into the tunnel on their hands, clothes or shoes. High tunnels should be located away from barnyards and other livestock or poultry concentration areas. Wind drift and water runoff can also contaminate produce in tunnels. Workers should change shoes when going from barns and barnyards into high tunnels. Bacteria can easily move from shoes to soil, plants, or produce in the tunnel. Hands should also be washed before working in the high tunnel. Always be careful to keep harvest containers clean and in good condition.

Preventing bacterial contamination of food is always preferable to trying to remove it after it is on the produce.

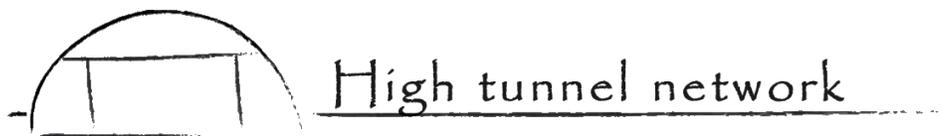
The dry climate inside tunnels can make it more difficult for bacteria to survive on plants. The cover prevents rain from splashing soil and bacteria up on to plants. (Continued on page 2)

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However, when plants are packed together and growing, the respiration rates are high and the humidity can be very high if the plants are close together. Bacteria generally survive longer in warm moist conditions.

Finally, traceability is becoming more important. Accurate records of how much product is harvested, the date of harvest, and which field or high tunnel it came from is important in the event of a recall. Accurate harvest records can limit the scope and amount of produce that needs to be recalled. Make sure that the produce you send to wholesale markets has your farm identification on it. That can be a number or a code or it could be your farm name. Also include your date of harvest or date of packing so you can narrow down any potential problems.

*Jeffrey Stoltzfus is a Penn State Extension Educator working to provide outreach and education for agricultural producers about the Food Safety Modernization Act and related issues.*



*Visit [www.hightunnelnetwork.org](http://www.hightunnelnetwork.org) for additional resources specifically for high tunnel growers.*