

Tomato issues - warts, spots, and rolling leaves

This is Gardening with Chuck on 1420 KJCK, I'm Chuck Otte, Geary County, K-State Research and Extension Ag & Natural Resources Agent. Lots of calls and samples coming in to the Extension Office regarding tomatoes. Several folks have been asking about bumps or warts on the lower stems of tomato plants. These bumps or warts are the start of adventitious root development. This characteristic is what allows us to lay stems down at planting time to create a shorter plant at planting time. If the stem doesn't come into contact with the soil these bumps won't develop full roots, but if they do contact the soil, they will root. Different varieties have varying levels of adventitious root development, but don't worry, bumps on the lower stems aren't a problem. I'm also getting questions on leaves rolling up along the center vein of the leaf. This is called physiological leaf roll and it's the way that the tomato plant reduces water use during hot weather, especially early in the season when the plant is still developing a full root system. As the summer moves on we'll see less and less of this. However, if you have distorted growth and curling of the leaf tips and thick leathery leaves, you are probably seeing herbicide drift. If it isn't too bad the plant should grow out of it. The other problem that is showing up, on schedule, is the various leaf spot diseases, especially early blight and septoria leaf spot. These common leaf diseases can really defoliate plants. Work to keep the leaves dry by not using a sprinkler, keep the plants staked up and keep the air moving around them, then spray regularly with tomato fungicides like mancozeb and chlorothalonil. This has been Gardening with Chuck on the Talk of JC, 1420 KJCK, I'm Chuck Otte.

## Grasshopper Control

This is Gardening with Chuck on 1420 KJCK, I'm Chuck Otte, Geary County, K-State Research and Extension Ag & Natural Resources Agent. Grasshoppers are an annual problem in Kansas. In wet years, diseases and other natural parasites tend to reduce their numbers and in dry years, their numbers tend to build. It's just the way it is. Grasshoppers are fairly non-selective. They'll eat anything that is green and growing and sometimes even things that aren't plant based. Young grasshoppers look a lot like adult grasshoppers only smaller and without wings. It is important to be on the lookout for large numbers of small grasshoppers for the simple reason that small hoppers are easier to kill than large ones. Small grasshoppers also eat less than large grasshoppers. The key to controlling grasshoppers is to not give them a lot of place to hide and eat. Keep weeds and grass mowed down around gardens and flower beds. Then once or twice a week, walk through these areas and look for lots of hopper activity. If you start to see a lot of grasshoppers in the areas just outside of gardens, it's time to apply sprays in these areas. The whole idea is to stop the small grasshoppers before they get into the garden or flower bed. Once the grasshoppers become adults with functional wings though, a swarm can invade your garden literally overnight and then treatment in the garden will be needed. For control options I am quite fond of the newer synthetic pyrethroids. They seem to work very quick and very well. Permethrin, hi-yield 38+ is a locally available formulation of permethrin, cyfluthrin, lambda-cyhalothrin and gamma-cyhalothrin are all good. Carbaryl will work but is becoming harder to find! This has been Gardening with Chuck on the Talk of JC, 1420 KJCK, I'm Chuck Otte.

## Squash bugs

This is Gardening with Chuck on 1420 KJCK, I'm Chuck Otte, Geary County, K-State Research and Extension Ag & Natural Resources Agent. Anyone who has ever tried to grow squash, especially summer squash, probably knows very well what squash bugs look like and what they can do. These grey shield shaped bugs feed on squash and pumpkin plants sucking juices from plants and fruit both. Because of their hard body, as an adult they are almost impossible to kill. Therefore early detection and trying to control the immatures is critical. The first generation nymphs are getting started so even if you haven't seen any squash bugs yet, you need to start treating. While first generation squash bugs don't usually do that much damage, they do become adults and then you have a whole lot more second generation squash bugs that can kill your plants. We do know that most butternut and Royal acorn squash varieties are resistant to squash bugs. But all summer squash and pumpkin varieties are at great risk. General use garden insecticides like permethrin, malathion, rotenone and methoxychlor will provide control IF you can get the product right on them. I prefer liquid sprays over dusts for a very simple reason. Most of the time the nymphs are going to be on the undersides of the leaves. You need to spray up under the leaves, not just on top, to assure that you are getting all the more easily controlled nymphs. It's very hard to get a dust formulation to go up under leaves. Another old timer trick is to lay wooden shingles around the base of plants. The squash bugs will often hide under these in the heat of the afternoon and you can flip the shingles over and spray the bugs hiding underneath! This has been Gardening with Chuck on the Talk of JC, 1420 KJCK, I'm Chuck

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