



## Arkansas Plant Health Clinic Newsletter

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### Potato

#### Common Scab

One of the most frequent diseases of potato we see is Common Scab of potato, caused by a bacterium, *Streptomyces scabies*. Scab is found in most potato production areas of the world. Other common names for this disease are “Russett Scab”, “Erumpent Scab”, and “Pitted Scab”. Young tubers are infected through lenticels and stomata. Lesions are circular to irregular in shape and often coalesce into large areas on the surface of the tuber. As the tuber matures, the lesions become rough, cracked, and tan to dark brown. Superficial lesions are called Russett Scab, slightly raised lesions are called Erumpnt Scab, and sunken lesions are called Pitted Scab. The type of lesion is dependent on potato cultivar, aggressiveness of the *Streptomyces* strain, and the environment. Control of Common Scab is difficult. The most critical control measure is planting only scab-free seed tubers. A crop rotation of 3 to 4 years is helpful. High soil moisture should be maintained for 4 to 6 weeks after swelling of stolon tips. Soil pH is important in scab control. Potatoes are commonly grown in soils with a pH of 5.0 to 5.2 for control of

Common Scab. Avoid alkaline organic fertilizers such as ashes and poultry/fresh farmyard manure. However, tubers grown in acidic soil may develop scab-like lesions. This may be due to Acid Scab, a similar disease to Common Scab caused by another species of *Streptomyces*, *S. acidiscabies*. Acid Scab can develop in soils with a pH as low as 4.0. Acid Scab and Common Scab are hard to tell apart as lesions caused by *S. acidiscabies*, are similar, if not identical, to those caused by *S. scabies*. There is some resistance to Common Scab available. Some of the common varieties that are most resistant to scab are Chieftain, Norland, Viking, Gold Rush, and Russet Burbank. Remember that resistant does not mean immune! Two common types that are susceptible to scab are Red Pontiac and Yukon Gold.

#### Potato Common Scab- *Streptomyces scabies*



Photo by Sherrie Smith, University of Arkansas  
Cooperative Extension



## **Potato Common Scab-*Streptomyces scabies***



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

### **Powdery Scab**

Powdery Scab of potato is another common disease of potato, and is caused by a completely different pathogen, *Spongospora subterranea* f. sp. *subterranea*. Powdery Scab is also found in most of the potato growing regions of the world. The pathogen proliferates under soil conditions found at planting time in the spring when soil temperatures are less than 68°F (20°C). Poorly drained soils are ideal for the swimming zoospores. The most favorable infection conditions are soil temperatures of 55 to 65°F (13-18°C) with soil moisture over 15 percent. The pathogen is tolerant of a pH range from 4.7 to 7.6. High soil moisture early in the

season, which is common in Arkansas, encourages the development of the disease. Potatoes are susceptible one week before tuber set when more than 50 percent of the stolons have tips swollen to at least 3/16 inch (4.8 mm) in diameter. Symptoms are limited to the underground parts of the plant: roots, stolons, young shoots, and tubers. Infections on roots and stolons begin as small necrotic spots. These lesions develop into milky-white to tan galls which turn brown and rupture, releasing the sandy masses of resting spores. The resting spores germinate, releasing zoospores. Severe infections can cause wilting and death of the plant, although that is uncommon. On the potato tuber, initial infections are manifest as purplish brown lesions which may be sunken. The lesions become tan, pimple- or wart-like swellings that eventually enlarge, breaking the periderm and exposing powdery, sandy-looking, tan to brown masses of spores. Other symptoms may include a russet-like scurf and lesions that remain sunken instead of the typical raised pimples or warts. The biggest problem with Powdery Scab is that it causes infected potatoes to dry out and shrivel in storage. Control of Powdery Scab is not easy. Clean disease-free seed should be used. Never use tubers for propagation that have scab. Don't plant in contaminated, poorly drained fields. Practice a 3-to-10-year crop rotation out of infested fields, as the resting spores can survive in the soil for longer than six years. Do not use tomato as a crop in rotation with potato. Control solanaceous weeds such as nightshade. Avoid using manure that came from animals that consumed contaminated

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tubers, as the spores survive through the animal's intestinal tract. Choose resistant cultivars. In general, russet varieties are more resistant than yellow, red, or white varieties.

### **Potato Powdery Scab- *Spongospora subterranean* f. sp. *subterranean***



Photos by Sherrie Smith, University of Arkansas Cooperative Extension

### **Stink Bug**

Several species of Stink Bugs feed on tomato fruit as well as on many other vegetables, fruits, nuts, and field crops. Stink Bug species in Arkansas include the Green stink bug, *Chinavia hilaris* (synonym *Acrosternum hilare*); the Southern green stink bug, *Nezara viridula*; the Brown stink bug, *Euschistus servus*; and the Rice stink bug, *Oebalus pugnax*. Adult Stink Bugs are shield-shaped insects with piercing sucking mouthparts. They get their common name, "Stink Bug," from the strong odor they emit when disturbed. Stink Bugs pierce fruits and nuts and inject enzymes from their salivary glands to liquefy and pre-digest the plant material. Damage to corn is dark sunken spots on individual kernels. Damage to green tomato fruit appears as dark pinpricks surrounded by a light discolored area. On ripe fruit, the area around the feeding site usually turns yellow. If the skin of the fruit is peeled back, white spots may be observed on the flesh of the tomato. Damage to nuts such as pecans appears as black spots on the nutmeat. Okra pods may be distorted by Stink Bug feeding. Females overwinter as adults and lay egg masses in the spring on host plants. There can be several generations a season. For Stink Bug control, homeowners may use Ortho Flower, Fruit, and Vegetable Insect Killer; or BioAdvanced Fruit, Citrus, and Vegetable Insect Control; or Spectracide Triazicide Insect Killer; or permethrins; or Pyrethrin EC.



**Tomato Stink Bug damage-**  
*Pentatomidae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

**Corn Stink Bug damage-**  
*Pentatomidae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

**Tomato Stink Bug damage-**  
*Pentatomidae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

**Pecan Stink Bug damage-**  
*Pentatomidae*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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## **Okra Stinkbug damage-** ***Pentatomidae***



**Photo by Sherrie Smith, University of Arkansas  
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This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

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