

## 33. Plum Pockets

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Plum pockets is a disease of plums caused by *Taphrina communis*. *Taphrina pruni*, another causal agent of plum pockets commonly found in Europe, has been reported on plums in North America, but the report is not confirmed.

### Hosts and Distribution

All plum species and varieties are susceptible to *T. communis*. *T. communis* is found in most regions of the United States where plums are grown, but the exact distribution in the Great Plains region is unknown.

### Symptoms and Signs

Symptoms appear as small white blisters on the young fruit. The blisters enlarge as the fruit develops and eventually involve the entire fruit. The infected fruit increases

in size and becomes spongy and distorted (fig. 33-1). The seed does not develop, and a hollow cavity forms in the infected fruit. The fruit is reddish initially, then becomes covered with greyish powder consisting of asci. Young shoots and leaves also may become infected and malformed (fig. 33-2).

The asci are cylindrical-clavate and usually rounded at the apex. Stalk cells supporting the asci are narrower than the ascus and variable in length. The eight ascospores are round, ovate, or elliptical. The ascospores commonly germinate in the ascus and produce conidia by budding. The dimensions of the asci are 27-83 by 5-18  $\mu\text{m}$ , of the stalk cells 6-56 by 3-12  $\mu\text{m}$ , and of the ascospores 4-7 by 3.5-5.5  $\mu\text{m}$ . One obvious feature that distinguishes this fungus from other *Taphrina* spp. is the long asci that frequently project above other asci.

Figure 33-1. Distorted, enlarged plums affected by plum pockets disease, and healthy unaffected plums.



## Disease Cycle

The fungus apparently overwinters as conidia or ascospores on twigs and buds on the tree. In the spring these spores are blown to young, succulent tissues. The spores germinate and penetrate developing leaves or other tissues through stomata or directly through cell walls. The mycelium grows between cells, causing abnormal cell enlargement and division. Infected fruit or tissue is distorted and much larger than normal.

The fungus produces asci below the epidermis of the fruit. These eventually enlarge and break through the epidermis. The ascospores multiply by budding off conidia inside or outside the ascus. Spores are wind blown to new tissue, where infection takes place during bud break. Low temperatures and high humidity favor infection of susceptible tissue. All tissues become resistant as they mature.

## Damage

Fifty percent or more of the fruit may be lost in years when the disease is severe. Buds and twigs may be af-

ected, thus stressing the tree. Once the disease is established in a tree, it will appear each year unless controlled.

## Control

The disease can be controlled by a single fungicide application in late fall or early spring before leaf buds swell. Any fungicide that is labeled for use on plum trees would be legally acceptable. Fungicides that have been effective are Ferbam, lime-sulfur, and Bordeaux mixture.

## Selected References

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Figure 33-2. Distorted plums and leaves on plum tree affected by plum pockets disease.

