

## TREATMENT OF POTATO SEED TUBERS

Wm. G. Hoyman  
Irrigation Experiment Station, Prosser, Wn.

Nearly 100 per cent of the potato seed planted in Eastern Washington each year is certified. Most of this seed is grown in the Northwest; a small amount comes from the Midwest. Purchasers of certified seed should refer to the field readings and the results of the winter greenhouse and outdoor tests in order to know to what extent any diseases are present.

Potato seed shipments arrive in Washington as early as February and continue into May. When seed is removed from storage in the early spring it is usually dormant. That is especially true for the Russet Burbank variety. Some provision should be made to heat the railroad cars and trucks in transit. If sufficient warm storage facilities are available where the seed is to be cut, it would be desirable to ship and store the seed 2 to 3 weeks before cutting.

Most of the seed in Eastern Washington is cut by mechanical cutters. Some provision should be made to sterilize these machines and especially the knives. A portable steam generator is recommended. If one is not available, the machine should be washed and sprayed with Roccal.<sup>1/</sup> This disinfectant will not corrode metal and it is effective as a disinfectant for the ringrot bacterium. Use at the rate of 1 quart in 25 gallons of water.

Due to the fact that the tubers of the Russet Burbank variety are long with several eyes, there is a tendency to adjust the knives of the cutting machine to cut seed pieces of less than 1.5 ounces. Regardless of their adjustment, some machines remove slivers (small pieces) from the ends of tubers. Some provision should be made to "screen out" these slivers.

Experiments at the Irrigation Experiment Station have shown that the underground stems produced from small seed pieces are more subject to infection from Rizoctonia solani. That is especially true when dormant seed is planted. It is not uncommon to have frost damage the small plants from early-planted seed. In such instances, the regrowth from small seed pieces is slower and may not occur if seed piece rot is present. Seed piece rot is more deleterious with small seed pieces.

All the factors causing seed piece decay are not understood. A successful crop may be grown without treating but there have been many instances

---

<sup>1/</sup> Trade names are used in this publication only to provide specific information. Their use does not constitute a guarantee of the products named and does not signify that they are approved by the U. S. Department of Agriculture to the exclusion of others of suitable composition.

in Eastern Washington where the crops were severely damaged. Due to the uncertain occurrence of this decay, it is advisable to treat the cut seed with a dust or wet treatment. Many fungicides have been tested the past several years with variable results. Considering the cost, ease of handling and reliability of performance, Captan has been one of the best fungicides. It may be applied as a dust or wet treatment. No machines are available to apply the dust efficiently. At the present, Gandy Applicators, or similar machines, are mounted above the bags receiving the cut seed. An adjustment of the machine determines the rate of dust flow. If a wet treatment is used, spray the fungicide on the cut seed pieces as they travel on a conveyor belt. Dip treatments are not recommended in Washington. They may become ineffective if care is not taken to renew the treatments when necessary. Some fungicides, including Captan, are not effective disinfectants for the ringrot bacterium. In such instances a dip treatment containing the ringrot organism may infect noninfected seed pieces and cause severe damage to the crop. Some experiments in other states have shown that seed treatment with Captan and Semesan Bel increased the yields where *Verticillium* wilt was present.

During seed cutting it is advisable to remove any tubers or cut seed pieces that appear diseased. These can be deposited in one or more receptacles and examined at intervals by someone familiar with ringrot symptoms. If there is some doubt or disagreement concerning ringrot infection, a microscopic examination should be made of the questionable specimens.

It is generally advisable to plant immediately or soon after cutting. That is especially true when mercury-containing fungicides have been used. If necessary to hold cut seed, do not store the seed-containing sacks in a manner whereby air circulation is prevented. Ideal storage conditions are 60 to 70° F. with high humidity.