

Research on Bacterial Blight in Carrots Grown for Seed

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Do you know the carrots you purchase from a supermarket may be produced in other states, but the seeds used to plant these carrots likely come from central Oregon? Central Oregon produces more than 70% of the hybrid carrot seed used in the United States. Farmers here grow more than 4,000 acres of carrots, valued at approximately \$20 million in 2011.

The region's climate and the growers' expertise have contributed to high quality seed and subsequently increase in acreage in recent years. However, the central Oregon farmers are facing some challenging problems, such as bacterial blight. This is one of the most important diseases in carrot grown for fresh markets worldwide, so seed that contains bacterial blight spores much be treated to minimize the level of disease.

To control bacterial blight, central Oregon farmers in the past have routinely sprayed two to three times with a variety of copper based bactericides. Another approach has been to grow the crop under drip irrigation to keep water off the foliage and reduce the level of disease. Over half of the carrot seed acreage is now grown under drip irrigation.

Despite these efforts, bacteria from this disease continue to be found on the seed. The bacterial cells can attach themselves on the surfaces of seed, or enter seed and multiply themselves inside the seed. Bleach and other surface sterilization treatment can only kill the surface bacteria, while bacteria inside are unaffected by these treatments. When the bacteria are internal, hot water treatment becomes necessary but can reduce seed germination.

Researchers at the Central Oregon Agricultural Research Center are working with the carrot seed industry to find answers to this disease that will benefit local growers and enhance the quality of seed produced in central Oregon.

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