Does Winter Kill Potato Blight in the Soil?

Summarized by
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Rotation of crops is necessary to prevent transmission of several plant diseases. Cabbage should not be planted the second year where the first season’s crop has shown much clubroot, and potatoes should not follow potatoes where scab has prevailed, nor where Fusarium wilt and its accompanying tuber rot have been destructive.

The most destructive potato disease in New York State, however, is late blight, with the common rot that follows it; and questions relating to transmission and control of these troubles are exceedingly important. Does this fungus survive the winter in the soil and make a blighted field of one year unsafe to use the next?

Most authorities hold that the fungus causing these two troubles, *Phytophthora infestans*, does not over-winter in the soil; and that there is no more liability to blighting and rotting on a field thus affected the year before than on one free from the disease. Recently two authorities, one in England and one in America, have advanced the opposite view and advise against planting potatoes on soil where blight has been prevalent.

To test the liability to such transmission, the Station Botanist has carried on careful tests in two seasons; and finds no evidence that the fungus can survive the winter in the field, in central New York, at least. In each of the tests, soil from a field of diseased potato plants was thoroughly mixed, in boxes, with broken, rotten tubers and pieces of blighted stems; and the boxes were exposed to the weather during early winter. Later the boxes were brought into the forcing house, a sound potato tuber was planted in each and conditions made as favorable as possible for growth of plants and development of the disease. In spite of warmth, abundant moisture, both in the soil and in the air, and luxuriant, succulent growth of the plants, not a sign of blighting appeared, even when the plants were grown in a special glass chamber and thoroughly wet daily with water drained from some of the soil mixed with diseased material, or were painted with a thin mud made from such soil.

The results, being negative, do not prove that the late-blight fungus cannot remain alive over winter in the soil, but they make such persistence appear highly improbable.

It would seem unnecessary, then, to change the location of the potato crop to avoid this disease; especially as we know that thorough spraying will control both blight and rot and will increase the crop enough, taking one year with another, to make this a highly profitable regular practice in potato growing.

The spraying of late potatoes should never be neglected.

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*This is a brief review of Bulletin No. 367 of this Station on the Persistence of the Potato Late-blight Fungus in the Soil by F. C. Stewart.*