Title Effect of Post-Harvest Fungicides and Disinfestants on the Suppression of Silver Scurf on Potatoes in Storage

Author Jeffrey S. Miller, Philip B. Hamm, Nora Olsen, Brad D. Geary and Dennis A. Johnson

Citation American Journal of Potato Research, 88, Number 5, 413-423, 2011

Keywords Silver scurf; Helminthosporium solani; Post-harvest disease management; Azoxystrobin; Thiabendazole; Hydrogen peroxide

Abstract

Silver scurf of potato, caused by *Helminthosporium solani*, can be a serious problem of potato tubers sold for table stock. The fungus originates primarily on seed and infects the periderm of daughter tubers, causing unsightly blemishes that reduce tuber quality. Secondary spread occurs in potato storage facilities when spores produced on infected tubers are moved through the air system. Depending on storage conditions and time, even a low initial disease incidence can result in significant losses through quality reductions. In the past, thiabendazole has been the most effective post harvest treatment in controlling this disease, but the development of fungicide resistance has made this product unreliable. Because of the lack of consistent alternatives, studies were conducted from 2001 to 2003 to examine the efficacy of various products in suppressing silver scurf incidence and severity when applied to tubers following harvest and prior to storage. Daughter tubers from a seed lot with high incidence of silver scurf symptoms were grown and then harvested 1 month after vine kill. After harvest, tubers were treated with a post-harvest application of various products, stored, and then evaluated for disease incidence and severity each year at two locations (Washington or Oregon and Idaho) and at two time periods (2 or 3 months and 6 months following storage). When treated tubers were stored from the fall of 2002 to spring of 2003, potassium sorbate and *B. subtilis* reduced disease severity after 6 months in storage at location 1, while azoxystrobin reduced incidence after 6 months in location 2. During the 2003–2004 storage season, azoxystrobin reduced silver scurf at both locations after 2 months of storage. Most products currently labeled for post-harvest silver scurf management were ineffective. While not currently registered, azoxystrobin used as a post- harvest, pre- storage treatment may be a significant method for commercial potato growers to suppress silver scurf in potato storage.