

POSTHARVEST RHIZOPUS ROT ON SUGAR BEET

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Rhizopus species have been reported as a minor post-harvest rot on sugar beet, particularly under temperatures above 5 °C. In 2010, *Rhizopus* was isolated from beets collected from Michigan storage piles in February at a low frequency. However, recent evidence from Michigan has found a high incidence of *Rhizopus* infecting beets with Rhizoctonia root rot. This has the potential to provide inoculum for post-harvest rot and could increase prevalence of this pathogen in storage. Research was undertaken to improve our understanding of *Rhizopus* as a post-harvest rot of sugar beet. Beets of variety USH20 were hand dug from the field and stored in canvas bags at 4°C. In addition, beets of three other germplasm, 907-23, 1126-142, and 326-139 were hand dug and stored under the same conditions. At various time points, beets of USH20 were removed from storage, washed under running tap water, and surface disinfested with sodium hypochlorite. Beets were sliced into 2 cm thick sections and inoculated with isolates of *Rhizopus stolonifer*, *Rhizopus oryzae*, or a sterile media control and incubated optimal conditions for *Rhizopus* growth under high humidity. Both species were able to cause extensive rot of beet tissue on beets that had been stored at 4 °C for 2 months or more. Little damage was observed on beets that had been stored for 1, 2, or 3 weeks at 4 °C. When tested on germplasm stored for 4 months or more, no significant differences (P=0.26) were found in the amount of rot produced over three days on four different sugar beet germplasm, but individual *Rhizopus* isolates varied in the amount of damage caused on sugar beet. Isolates of *R. oryzae* generally caused more rot than isolates of *R. stolonifer* and individual isolates of the two species also varied in virulence. When tested on cherry or strawberry, no significant difference in rotting was observed for these species. Isolates also were virulent on cucumber and zucchini fruit. Further tests at lower temperatures and with additional beet germplasm are ongoing.