

Determine the overwintering inoculum source(s) for grape powdery mildew (*Uncinula necator*)

Harold Larsen & Horst Caspari, Colorado State University, Western Colorado Research Center, 3168 B ½ Road, Grand Junction, CO 81503

Introduction and Objectives:

There are two ways that powdery mildew can overwinter: as cleistothecia on canes, cordons and stems, or as mycelium in buds. Control strategies for powdery mildew need to take into account the inoculum source. In the spring of 2001, we attempted to determine what role infected buds play in providing an early season inoculum source of powdery mildew. Observations were made in a Chardonnay block at the Western Colorado Research Center at Orchard Mesa (WCRC-OM), near Grand Junction, CO. This block had a very severe powdery mildew infection in the fall of 2000.

Results and Discussion:

No 'flag shoots', infected shoots arising from infected buds, were found during inspections of a Chardonnay block at WCRC-OM (see above). In addition, commercial grape growers report that they have never seen 'flag shoots' in their vineyards. It appears that under Colorado's growing conditions, powdery mildew over-winters by cleistothecia only. The lack of bud infection and the absence of 'flag shoots' in Colorado vineyards suggests that a fungicide application at bud break, a standard practice in most grape growing regions of the world, may not be required under Colorado conditions unless weather conditions at bud break are suitable to a primary infection from overwintering cleistothecia.