

TITLE: Effective spray programs for cucurbit downy mildew in early and late seeded cucumbers, 2017 (17-cuc-1 and 17-cuc-3)

Highlights/Summary:

- Fungicide programs using the new commercially available fungicide Orondis Ultra A and Orondis Ultra B were evaluated for management of cucurbit downy mildew in pickling cucumbers. Some programs were 'dynamic' and changed once downy mildew risk in the region was deemed to be high (i.e. when disease found in the Great Lakes Region or weather conditions favourable for disease development). Two trials were completed, one with an early seeding date and one with a later seeding date. The objectives of the trial were to a) identify effective spray programs using targeted fungicides (Orondis Ultra, Torrent, Zampro) and broad spectrum fungicides (chlorothalonil and mancozeb) to delay evolution of resistance to additional fungicides, under conditions of low (early seeded) and high (late seeded) disease pressure, b) evaluate programs with reduced applications of chlorothalonil in response to PMRA proposed use changes, c) evaluate one versus two applications of Orondis Ultra A and B, which is very effective against downy mildew but also higher cost than other fungicides.
- Downy mildew symptoms were confirmed in Kent Co. on June 27 but disease progressed relatively slowly throughout July, possibly because of cool and dry conditions. As soon as downy mildew was confirmed in the region, we switched programs from low to high risk protocols, so only one low risk application was made for Trial 1 and none for Trial 2. This did not allow us thoroughly evaluate impacts of proposed changes to the Bravo use pattern, since most Bravo applications were scheduled during low risk periods.
- In Trial 1, although we switched to the high-risk program early, the low input Bravo-only program provided control that was equivalent to the high input programs.
- Under conditions of high disease pressure (Trial 2), using a high input strategy with one or two applications of Orondis Ultra A + B followed by continued applications of downy mildew specific fungicides (Zampro, Torrent, and Orondis Ultra A + B if beginning with only one application of this fungicide) provided greater disease control and better yield than the low input strategy of Bravo only. Programs that included Torrent alt. Zampro or applications of downy mildew specific fungicides followed by three applications of Bravo tended to have higher levels of disease at the time of harvest than those that included Orondis Ultra A + B and included downy mildew specific fungicides until harvest.
- This research should be repeated in one additional year to evaluate fungicide program performance under other environmental conditions.