

## **Botanical oils and other products for managing powdery mildew in organically-produced cucurbits**

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Six plant oil products were tested because good control was achieved with a mineral oil, JMS Stylet-oil, in previous experiments at LIHREC. OxiDate (hydrogen dioxide) was also tested. These 7 products fit the EPA biopesticide definition. Most are OMRI listed. Some are exempt from EPA registration. Sulfur (Microthiol Disperss) was also included. It has performed well previously and will be OMRI listed soon. All products tested provided some control in 2004 of mildew on upper surfaces of pumpkin leaves applied weekly beginning after mildew detection using a tractor-sprayer. GC-3 organic fungicide (30% cottonseed oil, 30% corn oil, 23% garlic extract), Organocide (5% sesame oil; 92% fish oil) and Eco E-Rase (97.5% jojoba oil) were as effective as Microthiol Disperss, JMS Stylet-oil, (organic formulation) and the conventional fungicide Bravo Ultrex (chlorothalonil), providing 77-79% and 73-90% control on upper leaf surfaces based on AUDPC values, respectively, and 36-45% and 32-39% control on lower surfaces. Other plant oil products tested were Bugitol (0.42% capsaicin and related capsaicinoids), Sporan (17.6% rosemary oil; 82.4% wintergreen oil), and Trilogy (70% extract of neem oil). These and OxiDate provided control through 23 Aug, 2 days before application 4, but severity did not differ significantly from nontreated pumpkins on 16 Sep, 4 days after application 7.