TWO NOVEL USES OF POTATO SEED-PIECE TREATMENTS; CONTROLLING EARLY SEASON INSECTS, AND INHIBITING THE SPREAD OF LATE BLIGHT FROM INFECTED SEED DURING THE CUTTING AND HANDLING PROCESS.

by
Greg Loberg, and Randolph B. Scott, Gustafson, LLC

The active ingredient imidacloprid (active ingredient in Gaucho® and Admire®) is under development as a seed piece treatment for control of Colorado potato beetle and aphids. Excellent results have been obtained, while minimizing the active ingredient applied on a per acre basis. Data from 1998 field testing with university cooperators in Idaho and Oregon have shown that Gaucho, when added to Tops MZ®, performs nearly as well as Admire® in-furrow. Admire®, as a liquid seed treatment spray would be applied directly to cut seed, then followed by a seed treatment dust. Gaucho® will be blended with Tops MZ®, and would be applied in one step to cut seed, the same way cut seed is being treated now. If a 2,000-pound per acre planting rate is used both products would go on at a rate of 3-4 oz ai/ac. Limited entry into the seed treatment market is expected in 1999. At this time Idaho (ID-990001), Oregon (OR-990002), and Washington (WA-990004) now have EPA Special Local Need (SLN), Section 24(c) FIFRA registrations for the use of Tops MZ®-Gaucho® and Admire® as seed piece treatments.

De Bary (2) in 1863 first hypothesized that the fungus *Phytophthora infestans* causal agent of potato late blight over winters as mycelium in infected tubers, but proof of this was not easily achieved. The earlier races of the fungus could spread to uninfected potato seed during handling, but were generally unable to form lesions that would sporulate above ground (3). Deahl (1) has found the current races of *P. infestans* that are present in the potato growing regions today are being spread more readily by the seed piece. Deahl finds that as many as 40% of the sprouts that are infected during handling, can produce infected stems. This introduction of late blight on seed may be one of the most important ways the disease is spread early in each growing season (5). After several years of screening fungicides active against late blight, the combination of Topsin and mancozeb in the product Tops MZ® has been found to be the most active, registered seed-piece treatment to control seed to seed disease spread (4). Tops MZ® now has a statement on the label that address the product's efficacy against late blight spread to disease free cut seed. The addition of a third active ingredient, cymoxanil (Curzate®) provides even better control of late blight infections before they are able to sporulate above ground. Development of the Curzate® containing compound is underway, and submission for registration is expected soon. A SLN Section 24(c) registration has been approved in Wyoming (WY-990002) for Tops MZ®-Curzate®. Other states are expected to have registrations for cymoxanil containing seed treatment products for spring 1999.

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Literature Cited

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