

Bean Mold Task Force

April 27, 2005

The Willamette Valley processed vegetable industry in cooperation with the Oregon Processed Vegetable Commission, Oregon State University, and the American Farmland Trust formed a Bean Mold Task Force in the spring of 2005 with the following objectives:

- To help guide the processed vegetable industry as it adapts to the loss of the Ronilan registration for control of molds in snap beans
- To enhance the efficiency with which the grower, agricultural professional, and university community evaluate alternatives to Ronilan
- To enhance communication between growers, agricultural professionals, and university faculty during the 2005 and 2006 growing seasons as we transition from Ronilan

The bean mold task force met twice. What emerged is one coordinated project that will be conducted at three levels of resolution. The three levels will vary in their experimental design starting with small plot work and ending with simple pair comparisons at a field scale.

The three project levels and project personnel will work together as a team, pooling resources to establish and evaluate small and large plot trials. The task force will have three sources of technical support: 0.75 FTE from the Oregon Processed Vegetable Commission, 0.75 FTE from the NORPAC American Farmland Trust grant, and 0.2 FTE from the OSU Agricultural Research Foundation.

Level One – Replicated Small Plot Fungicide Trials

Project Level One will be led by Cindy Ocamb (541-740-6636), OSU Extension Vegetable pathologist with the support of Extension Agents Bob McReynolds and Dan McGrath, and the rest of the Bean Mold team. This project will focus on detailed evaluation of registered and unregistered chemicals, at various timings, rates, and combinations. Two of the four small plot trials will be conducted on cooperating farms. The goals of project level one are 1) to evaluate alternative fungicides and 2) to refine our understanding of the impact of combinations, rates, timings, and adjuvants on the effectiveness of the materials. Detailed treatments variations are too expensive to evaluate in large plot trials and too risky to cooperating growers.

Level Two – Mold Risk Assessment in Large Plot Trials

Project Level Two will be led by Dan McGrath (503-931-8307), OSU Extension with the support of the rest of the bean mold team. It will involve six to seven cooperating farms located in snap bean production area of the Willamette Basin: Kenagy Farm – Albany, Gray Farm – Dever Conner, Pearmine Farm – Gervais, Haener Farm – Aurora, Dickman Farm – Mt Angel, Sweeny Farm – Dayton, and Hendricks Farm – Stayton. The goals of level two are:

- To validate small plot research results that tank mixes of Topsin/Endura or Topsin/Rovral applied early in a two spray program will adequately control mold in high risk bean plantings
- To test whether or not OSU Mold Risk Assessment program can identify lower risk fields where a single spray fungicide program will provide adequate protection.

OSU Extension will monitor risk of mold in bean plantings continuously during the growing season on cooperating farms using a modified OSU Mold Risk Assessment Program (See Web Page). OSU personnel will work closely with growers to establish and evaluate simple paired comparisons between Ronilan and alternative spray programs in high and low risk fields. Cooperating growers will be encouraged to leave untreated control strips in order to validate the risk assessment model. Cooperating growers will have an opportunity to test one-spray tank mixes or single fungicide programs when risk of mold appears to be very low and no gray mold (*Botrytis cineraria*) is present. Treatment choices will include:

1. High Risk: Tank mix of Topsin plus Endura with an appropriate adjuvant sprayed at ten percent bloom (see note below) and again 7 to 10 days later
2. Low Risk: Tank mix of Topsin plus Endura with an appropriate adjuvant sprayed once prior to row closure.
3. High Risk: Tank mix of Topsin plus Rovral sprayed at ten percent bloom (see note below) and again 7 to 10 days later
4. Low Risk: Tank mix of Topsin plus Rovral sprayed once prior to row closure.
5. High Risk of White Mold and Low Risk of Gray Mold: Topsin sprayed at ten percent bloom (see note below) and again 7 to 10 days later

Note: By ten percent bloom, we mean one out of ten plants have an open blossom. In other words, if you pull ten plants, only one of the ten plants has a single fully open blossom. (Some people refer to this stage as the “popcorn blossom” stage.) This is significantly earlier spray timing than used for Ronilan.

Level Three – Large Plot Paired Comparisons

Project Level Three will be led by Alex Stone (541-602-4676), OSU Vegetable Specialist in cooperation with Ed Peachey, Dept. of Horticulture and the rest of the bean mold team. This project was developed by the design subcommittee of the bean mold task force (Ed Peachey, Neil MacInnes, Bill McCall, Peter Kenagy, Jim Myers, and Alex Stone). The goals of project level three are:

- To familiarize more farmers with the use and efficacy of alternative chemicals
- To put out trials on several high risk fields to ensure that at the end of the 2005 growing season we have on-farm efficacy data for the most promising alternative chemicals used in a two-spray and two-fungicide tank mix program

Each vegetable processor field representative (from Norpac, National, Truitt, Symons) is requested to identify 1-3 fields (for a total of 30 fields) with a known history of mold and a willing grower cooperator. Stone, in cooperation, with the processor field reps and in some cases cooperating chemical company field reps, will then work with the growers on designing the field trials. We recommend that the large plot paired comparisons consist of Ronilan plus one of the following alternative treatments:

1. Tank mix of Topsin plus Endura with an appropriate adjuvant sprayed at ten percent bloom (see note below) and again 7 to 10 days later
2. Tank mix of Topsin plus Rovral sprayed at ten percent bloom (see note below) and again 7 to 10 days later

Note: By ten percent bloom, we mean one out of ten plants has a open blossom. In other words, if you pull ten plants, one of the ten plants has a single fully open blossom and no pin beans are present. (Some people refer to this stage as the “popcorn blossom” stage.) This is significantly earlier spray timing than used for Ronilan.

Growers will be encouraged to establish an unsprayed control strip, though this is not a requirement. Stone, in cooperation with field reps, will assist growers in flagging and mapping treatments. Photos will be taken of spray rigs and fields. Four five-plant samples from each field will be pulled and evaluated for crop development stage at the time of spray by the OSU team. (See Web Page ~ Estimating Percent Bloom on Spray Day)

Prior to harvest, Stone and the team will evaluate mold development in each grower trial. Only if sufficient mold is present in the field prior to harvest, Stone and the team will evaluate the paired comparisons for disease severity and yield. Growers in cooperation with their processor will also be encouraged to collect field-scale yield data by isolating loads from each treatment when feasible.

Web Page Resources (under construction)

<http://extension.oregonstate.edu/linn> Go to: Commercial Vegetables

Unified Bean Mold Data Collection Sheet

How to estimate percent bloom

How to estimate percent mold

How to estimate risk of mold

Field Scouting for Mold Sources

How to identify white and gray mold

Large Plot Design Suggestions

Timing Fungicide Sprays

Fungicide Trials (1975-2004)

Field Day Announcements

Contact Us