

HAZELNUT (*Corylus avellana* ‘Ennis’)
 Eastern Filbert Blight; *Anisogramma anomala*
 ROSE (*Rosa sp.* ‘Meidomonac Bonica’)

J. W. Pscheidt and S. Heckert
 Dept. of Botany and Plant Pathology
 Oregon State University
 Corvallis, OR 97331-2903

Crop Safety of M-Pact, 2012.

Experiment 1:

Healthy appearing two-year-old ‘Ennis’ hazelnut trees were planted on 25 Jan 12 at the Botany and Plant Pathology Field Laboratory, Corvallis, OR. Trees were planted on a 3 X 3 ft spacing. A block of roses planted in 2010 on a 5 X 20 ft spacing was also selected. M-Pact treatments were arranged in a randomized complete block design. Each treatment was replicated on 4 sets of plants. Treatments were applied until runoff using a Solo pump-style backpack sprayer. A 0.5 liter solution was prepared for each plant type. Application dates were 6 Jun, 13 Jun, 20 Jun and 27 Jun. Plants were surveyed for phytotoxicity every week once spray applications were initiated. Phytotoxicity was evaluated on 12 Jul and 28 Aug where 0 = no effect, 1 = slight effect that is not obvious, 2 = slight necrosis, 3 = obvious necrosis, 4 = intense symptoms with marginal burning, leaf necrosis and/or possible dead shoots.

Table 1. Safety of M-Pact on hazelnut and rose.

Treatment and Rate	Hazelnut Phytotoxicity		Rose Phytotoxicity*
	12 Jul	28 Aug	12 Jul
Nontreated.....	0.3	0.5	0.0
M-Pact 5% at 40 ml/1 gal water....	0.8	1.0	0.0
M-Pact 5% at no dilution.....	4.0	4.0	---

* Roses were not tested at the undiluted 5% rate.

Experiment 2:

Healthy appearing two-year-old ‘Ennis’ hazelnut trees were planted on 25 Jan 12 at the Botany and Plant Pathology Field Laboratory, Corvallis, OR. Trees were planted on a 3 X 3 ft spacing. A block of roses planted in 2010 on a 5 X 20 ft spacing was also selected. M-Pact treatments were arranged in a randomized complete block design. Each treatment was replicated on 4 sets of plants. Treatments were applied until runoff using a Solo pump-style backpack sprayer. A 0.5 liter solution was prepared for each plant type. Application dates were 13 Jun, 20 Jun, 27 Jun and 3 Jul. Plants were surveyed for phytotoxicity every week once spray applications were initiated. Phytotoxicity was evaluated on 12 Jul and 28 Aug where 0 = no effect, 1 = slight effect that is not obvious, 2 = slight necrosis, 3 = obvious necrosis, 4 = intense symptoms with marginal burning, leaf necrosis and/or possible dead shoots.

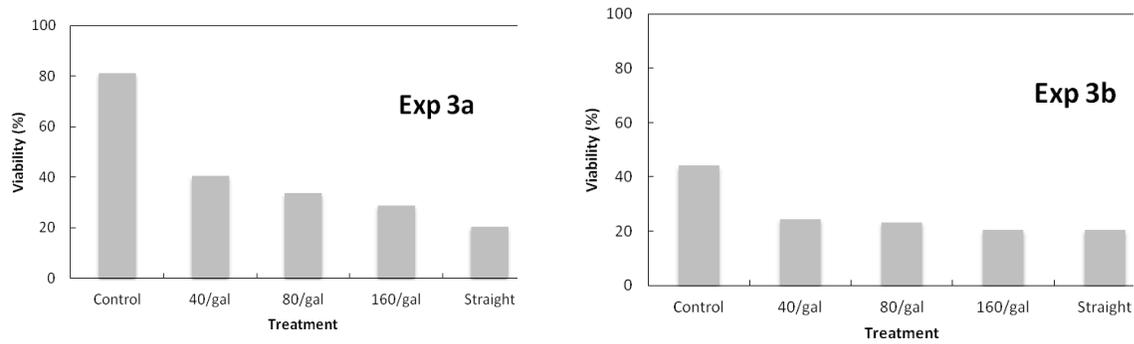
Table 2. Safety of M-Pact on hazelnut and rose.

Treatment and Rate	Hazelnut Phytotoxicity		Rose Phytotoxicity
	12 Jul	28 Aug	12 Jul
Nontreated.....	0.0	0.3	0.0
M-Pact 5% at 40 ml/1 gal water....	0.5	0.3	0.0
M-Pact 5% at 80 ml/1 gal water....	1.8	1.5	0.0
M-Pact 5% at 160 ml/1 gal water...	2.5	2.5	0.0

Experiment 3:

Hazelnut twigs infected with EFB were sprayed to run-off with M-Pact 5% at a rate of 40 ml, 80 ml or 160 ml in 1 gal water. Twigs were allowed to dry for 24 hr then placed in a mist chamber for another 24 hr. The number and viability of spores was determined. The experiment was repeated once.

Figure 1. Viability of EFB spores treated with water alone (control), 5% M-Pact (straight) or a dilution of 40, 80 or 160 ml M-Pact per gallon water.



Discussion

Hazelnut tissue appears to be sensitive to high rates of M-Pact. Although the number of spores from cankers did not decline (data not shown), viability of EFB spores was reduced by 50% (figure 1). If testing proceeds next year, a dilution of 40ml/1 gal water is the highest rate that should be examined. Young tissue at bud break could be even more sensitive.

Testing of roses should be done next year at just about any rate that seems cost effective. Efficacy of M-Pact on black spot would be a good test system to show the potential of this product for plant disease control.