

Bactericides for management of bacterial blight of lilac, 2012.
Efficacy of Management Tools for Bacteria – IR-4 Ornamental Protocol Number 12-008.

Bactericide treatments were arranged in a randomized complete block design in a block of 'Ellen Willmott' lilacs planted in 1993 on a 5 x 15 ft spacing. Each bactericide treatment consisted of 5 single shrub replicates. Nontreated, non-inoculated bushes were on either side of inoculated, treated bushes. All bactericides were applied using a hydraulic handgun sprayer at 100 psi such that 1.5 gal of a spray suspension was applied per 5 bushes (175 gal/A). Treatments were applied on 16 Mar 12 (buds swollen), 23 Mar 12 (bud break to half inch growth), 1 Apr 12 (2 to 3 inch growth), 5 Apr 12 (3 inch growth), and 17 Apr 12 (beginning of bloom). A set of nontreated and all bactericide treated bushes were inoculated on 31 Mar 12 (a day before the 3rd bactericide application) with 5×10^6 cfu/ml of *Pseudomonas syringae* pv. *syringae* originally isoalted from lilac. Bacteria were applied using a Stihl backpack pump style sprayer. Another set of 5 nontreated bushes were not inoculated. All bushes were pruned to reduce overall size and to remove dead wood on 9 Feb 12. No fertilizer, insecticides or herbicides were applied to this block of lilacs. Incidence of bacterial blight was evaluated on 20 Apr and 4 May by examining 100 arbitrarily selected shoots per bush. Severity was evaluated on 20 Apr and 4 May by examining 100 arbitrarily selected shoots per bush that had 50% or more of the leaves blighted. The height of each bush was recorded on 16 Mar 12 and 24 May 12.

Early spring conditions during bud break and early shoot growth was characterized as cool and wet. Small, water soaked spots were observed on 26 Mar on some plants. Necrotic spots were observed in abundance on both inoculated and non-inoculated nontreated bushes on 2 Apr. Whole leaves and petioles were collapsing on 16 Apr with entire shoot collapse by 23 Apr. Nontreated, non-inoculated bushes were diseased indicating plenty of natural inoculum. Although it appears the incidence of bacterial blight on 20 Apr was significant, the overall $P = 0.0497$ was just under the 0.05 threshold. The incidence of bacterial blight on 20 Apr on bushes treated with Regalia, KleenGrow or AMV-4024 was not significantly different from either the inoculated or the non-inoculated bushes. The incidence of bacterial blight on bushes treated with A14658C, ZeroTol or Camelot "O" was not significantly different from inoculated bushes on 20 Apr. Any differences that may have existed were gone by the 4 May evaluation. There was no significant difference in disease severity among any of the treatments. There also was no significant difference in the change in plant height among any of the treatments. No phytotoxicity was observed on any treated bushes. AMV-4024 was viscous and difficult to work with during low spring temperatures.

Table 1. Bacterial blight incidence and change in plant height.

Treatment and rate/100 gal	Bacterial Blight (% shoots)*		Change in Plant Height (cm)*
	20 Apr	4 May	
Nontreated, Non-inoculated.....	53.0 abc	45.0	22.9
Nontreated, Inoculated.....	70.6 a	59.4	30.0
A14658C at 64 fl oz	63.8 bc	40.6	22.4
Regalia at 1 gal	43.0 abc	36.6	27.9
ZeroTol 2.0 at 128 fl oz.....	24.4 c	30.6	18.3
Camelot "O" at 2 gal.....	29.0 c	31.4	34.0
KleenGrow at 25 fl oz.....	62.2 ab	48.0	27.4
AMV-4024 at 38.4 fl oz.....	54.0 abc	39.6	30.5
Aliette WDG at 12.8 oz	27.8 c	30.2	30.5

* Means followed by the same letter do not differ significantly based on Fisher's protected LSD ($P=0.05$). Means without letters do not differ significantly.

Table 2. Bacterial blight severity with incidence of shoots with $\geq 50\%$ blight.

Treatment and rate/100 gal	Bacterial Blight (% shoots/bush with $\geq 50\%$ blight)*	
	20 Apr	4 May
Nontreated, Non-inoculated.....	4.6	6.2
Nontreated, Inoculated.....	13.8	11.4
A14658C at 64 fl oz	3.0	6.4
Regalia at 1 gal	2.4	8.6
ZeroTol 2.0 at 128 fl oz.....	1.4	4.8
Camelot "O" at 2 gal.....	1.4	1.6
KleenGrow at 25 fl oz.....	9.8	12.4
AMV-4024 at 38.4 fl oz.....	3.6	9.0
Aliette WDG at 12.8 oz	0.0	2.8

* Means followed by the same letter do not differ significantly based on Fisher's protected LSD (P=0.05). Means without letters do not differ significantly.

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