

Section VI.
Vectors of Plant Pathogens

EFFICACY TRIALS IN GRASS SEED FOR CONTROL OF SILVER TOP DISEASE.

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Silver top (ST) in grass seed crops is a pathogenic fungus disease, *Fusarium poae*, resulting in an economic problem producing yield reductions. Blank heads appear at anthesis, which are silver/white in color. The reduction or absence of fire to clean grass fields of stubble and other residue after harvest has allowed silver top to emerge as a major threat to grass seed production in fine or hard fescue grasses and in *Poa pratensis*, blue grass. In CY 2000, ST heads were as numerous as 50% of heads in some varieties of *Festuca* spp. throughout the grass seed production areas of the Tri-State Region. Also, ST appeared for the 1st time in blue grass pastures of "Pomeroy" strain, which may become a reservoir for the disease. For many years pathologist and entomologists have debated the vector of ST, or if the is an insect vector. To test the efficacy of some selected insecticides selected by the author, a RCBD trial of 7-treatments of 5-replicates each of 10 x 30 feet, was established on cooperator land near Post Falls, on the Rathdrum Prairie of Idaho. A Kentucky blue grass hybrid "Nassau" trial was established in the experimental field for 5+ years. A KGB "S-21" trial including the fungicide 26019 was sprayed near Mt. Hope, WA (Cornwall trial). Two spray dates early (4-27) and 2-weeks later were made, with Legend 2X in the main trial to compare to early and late applications. Spray treatments for these trials were made on 4-27-00 using a plot sprayer. All treatments included a buffer/sticker to pH 5.0. The date selected was based on the European theory that one should spray grass when the dandelions are blooming in the yard. Evaluation of ST heads per 2 meter square sample per replicate. Harvesting through a stationary combine with subsequent de-bearding of the seed to provide grams per 0.5 square meter collected yield data. Many of the insecticide treatments provided ST reduction compared to the check, indicating an insect vector of ST. Yield data were NSD at Post Falls, having been confounded by a large incidence of ergot in the field. Yields and ST heads at Cornwall were SD.

See tables below analyzed by ANOVA, LSD t Test; $p=0.05$.

Armstrong Nassau ST Heads & Yields/2-meter squared Sample

Treatment	Rate	ST heads	Grams/2m
Warrior CST	0.24 pt	0.40a	106.30a
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Legend	3.47 oz	1.60a	114.26a
Baythroid	0.35 lb ai	2.40a	112.44a
Provado	3.75 oz	7.20b	128.92a
Check	NT	16.60c	115.24a
Actara	14.67 gr	21.80d	117.70a

Cornwall KBG ST Heads & Yields/2-metter squared Sample

Treatments	Rate	ST Heads	Grams/2m
Check	NT	7.60d	171.68b
26019	180 ml/gal/ac	6.80c	173.48b
Legend early	3.47 oz	3.00b	183.90b
Leg + 26019	180 ml/3.47 oz	2.40a	189.50b
Baythroid	3.75 oz	1.20a	153.94c
Legend late	3.47 oz	0.80a	204.16a
Legend 2x	3.47 oz	0.40a	176.78b

Legend is an experimental combination of Baythroid 1.6E at 3.75 oz + Provado 1E at 3.75 oz designed to kill all insects. Bayer does not plan to release this combination. Actara is the Syngenta Thiomethoxam DF product. 26019 is a fungicide considered to have activity on *Fusarium* spp.