

Enhancing Potatoes with Biocontrol Crops

Verticillium propagules per gram as influenced by biocontrol crops. Located at Ray Wright Farm in Rio Grande County, Roads 1S and 4E. By Merlin Dillon, CSU Cooperative Extension, SLV Research Center, Center, CO. Project funded by CPAC / SLV Research Center Committee.

	VPPG ^{1/}	
Crop	April 2001	September 2001
Sorghum-sudan	13	0
Barley Grazed	13	20
Barley Grain	2	23

^{1/} VPPG is verticillium propagules per gram found in the soil sample.

Field Notes:

The April samples were taken prior to the 2001 potato crop; the September samples were taken after the potato crop was grown. Each treatment was sampled in duplicate locations; the locations were GPS located so that the April and September samples were from the same location. Analysis by Pest Pros, Plainfield, WI.

The sorghum-sudan was grown in 2000; it was grazed then the remaining crop residue was worked in. These results indicate the sorghum-sudan crop was effective in reducing verticillium disease inoculum from the soil.

Enhancing Potatoes with Biocontrol Crops

Verticillium propagules per gram as influenced by biocontrol crop. Located at Summit Farms in Saguache County, Roads AA and 55. By Merlin Dillon, CSU Cooperative Extension, SLV Research Center, Center, CO. Project funded by CPAC / SLV Research Center Committee.

	VPPG ^{1/}		
Crop	June 00	Apr 01	September 01
Winter Wheat	6.5	3.6	2.9
Sorghum-sudan	2.8	2.0	2.5
Fallow	---	1.0	1.7

^{1/} VPPG is verticillium propagules per gram found in the soil sample.

Field Notes: The June, 2000, samples were taken prior to planting sorghum-sudan and taken from growing winter wheat. April, 2001, samples were taken prior to planting seed potatoes and September, 2001, samples were taken after the potato crop. Each crop was sampled in 5 locations. The fallow sites were located in the sorghum-sudan field; there were two locations that simply were not planted into sorghum-sudan. Each was GPS located so that all three dates were sampled in the same location. Analysis by Pest Pros, Plainfield, WI.

The verticillium test levels were fairly low at the beginning of this trial. It is not surprising that biocontrol crops had little effect in lowering verticillium levels.

Enhancing Potato Production with Biocontrol Crops

Verticillium propagules per gram (VPPG) for three sampling dates as influenced by biocontrol crops. Worley Seed Farm (Bob Mattive) Field at Roads 8N and 4E, Rio Grande County, 2001. By Merlin Dillon, CSU Cooperative Extension, SLV Research Center, Center, CO. Project funded by CPAC Area II / SLV Research Center Committee.

Tmt No.	Crop	VPPG ^{1/}			
		June	August	October	October sub samples ^{2/}
2	Salvo Mustard	10	–	2	2 2
4	Rivona Mustard	11	--	5	4 6
5	Arena Radish	6	--	4	2 6
6	Rimbo Radish	16	5	5	4 6
7	Serval Mustard	7	--	5	4 6
8	Humus W. Rape	2	12	7	6 8
9	Maple Peas	3	--	9	6 12
10	Malt Barley	16	3	14	12 16
11	Sordan SS ^{3/}	6	3	20	10 30
12	Rabbit Ears SS	4	--	5	4 6
14	Buffalo Brand SS	15	--	18	28 8
15	Grazex II SS	6	--	22	12 32

^{1/} VPPG = Verticillium propagules per gram found in the soil sample.

^{2/} Two sample values that make the October average.

^{3/} SS = Sorghum-sudan hybrid

Field Notes: Two soil samples were GPS located for each plot. Subsequent samples were taken from the same GPS location. June samples were taken right after planting June 1. August samples were taken August 1; just before crops were chopped and turned under by moldboard. October samples were taken after the crop residue had time to decompose and just before the soils got really cold.

Analysis by Pest Pros, Plainfield, WI.

The previous crop was potatoes in 2000. The entire center pivot was planted to the four types of sorghum-sudan except for one drill width strips of these biocontrol crops. Seed rate for these crops was 15 lbs/acre; the sorghum-sudan was planted at 20-25 lbs/acre. The Sordan was sampled in 3 places for forage yield; this calculated to 3.0 tons/acre dry matter or 3.3 tons/acre at 10% moisture hay. The yield as harvested was 22.5 ton/acre at 86.5% moisture which is also equivalent to 15.2 ton per acre at 20% dry matter.

Seed cost were quoted as Sordan @ 80 cents/lb (80% germ.); Rabbit Ears @ 36 cents/lb (90% germ.); Buffalo Brand @ 37 cents/lb (90% germ.); and Grazex IIW @ 35 cents/lb (80% germ.).