EFFECT OF SEED TREATMENTS AND THEIR CORRESPONDING IMPACT ON SEEDLING EMERGENCE AND SURVIVAL

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Lise of water.

Since 1980 our farmers have averaged less than 56 percent of the seeds planted producing beets at harvest. The survival rate ranges from 44.5 percent to 63.2 percent. A crust on the soil, wind, and other factors including seedling disease can affect stand. This test was conducted to find if any seed treatment would reduce seedling disease resulting in better stand establishment.

Presently we are using Thiram 50 W applied by a Vector hi-coater. Dayglo neon red is used for color and Dow Methocel is used as a sticker. No layer is applied first to separate the fungicide from the seed and only a total of about 3.2 percent is added by weight to the seed.

show a cleaning percentage of 80-90. This encourages us to install a number of air

A total of twelve treatment materials were tested at least once over three years. All treatments were mixed with water and sprayed on bare seed. All tests were randomized in two row plots, 30 feet long with six replications. Stand counts were taken at the 4-8 leaf size to evaluate performance.

Products and Rates Used:	op growth cent	an include daugers		
rying to find possibilities	AMOUNT P	ER 100 POUND	OS OF SEED	reach on goa
Product	1990	1991	1992	to minimize d
Captan 400 FL	8.0 Fl. Oz.		6.0 Fl. Oz.	the same field
Thiram 50 WP	8.0 Oz.	8.0 Oz.	8.0 Oz.	
Apron FL	1.5 Fl. Oz.	2.0 Fl. Oz.	.75 Fl. Oz	-
RTU-PCNB	3.0 Fl. Oz.	4.0 Fl. Oz.		
Chloroneb 65 WP	2.0 Oz.	are propren. v	solution for the	We have to find a
Tachigaren 70 WP	1.8 Lbs.	2.0 Lbs.	4.5 Lbs.	
Terraclor Super X (dry)	4.0 Oz.			with water or air.
Apron 12.5% Dust (dry)	4.0 Oz.		1222	
Gus (NTN) 338 75%		5.3 Oz.	12.0 Lbs.	
Baytan 30 FL			3.0 Fl. Oz.	2001
Mon 25 WP	2012L 112		3.0 Oz.	
PGR IV			4.0 Fl. Oz.	

Tables 1-3 contain the results from each individual year. There is a significant difference between some treatments in 1990 and 1992, but no treatment in any year was significantly better (5% level) than the untreated check or thiram alone.

Table 1 1990 AVERAGE OF THREE LOCATIONS

OF MEAN	ERG, M. I	FIELD EM		TREATMENT
	104.2	FIELD %		FIELD %
TREATMENT	102.0	EMERG.	TREATMENT	EMERG.
Untreated	192.2	55.1	Tachigaren 70% WP	51.9 P mm/T
Captan 400	98.2	54.7	Tach. 70%, Thir. 50 WP	55.2
Thiram 50 WP		54.5	Tach. (slurry), Terraclor (dry)	47.3
Thiram, Apron FL	Ter annes	54.6	Tach. (slurry), Apron (dry)	51.3
Thir., Apron, RTU	J-PCNB	56.8	Thir. (slurry), Terraclor (dry)	52.1
Thir., Apron, Chle	oroneb	55.3	Thir. (slurry), Apron (dry)	55.0

LSD (5%)

5.9

Table 2

MOTTA MOVET 1991 OTA SORA I

AVERAGE OF THREE LOCATIONS

			1525	TREATM
		FIELD %		FIELD %
TREATMENT	80	EMERG.	TREATMENT	EMERG.
Untreated	85	58.7	Thiram, GUS 338	64.1
Thiram 50 WP	87.5	57.6	Thiram, Apron, GUS 338	62.6
Thiram, Apron I	FL .	56.2	Thiram, Apron, RTU-PCNB	60.1
Tachigaren 70%	WP	55.9	Thiram, Apron, RTU-PCNB, GUS 338	61.3
Thiram, Tach. 7	0% WP	55.6	Thir., Tach., RTU-PCNB	62.5

LSD (5%) mule been 1941 at battern as NS of T 1941 at battern have 1949 at battern as a start of the transfer of the transfer

AVERAGE OF THREE LOCATIONS

	FIELD %	1661	FIELD %
TREATMENT	EMERG.	TREATMENT	EMERG.
Untreated	59.8	Apron, Thir. & Baytan	44.2
Thiram 50 WP	57.8	Apron, Thir., Mon.	59.2
Captan 400	55.7	Thir., Tach., GUS 338	52.8
Thiram, Tach.	52.9	Thir., Tach, PGR IV	51.6
Apron, Thiram	59.3	Apron, Thir., PGR IV	56.6
Apron, Thir., Tach.	46.6	Apron, Thir., Tach, PGR IV	49.2
LSD (5%)	(siarry), Terraclor (dr	5.6	Threan 30 WP
8.94		57.5 Tach.	Diram, Apren
There were only four	r treatments tested all	three years. Table 4 shows the a	average of three

There were only four treatments tested all three years. Table 4 shows the average of three years expressed as a percent of the mean.

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121

Table 4 AVERAGE OF THREE YEARS

A VERAGE OF THREF LOCATION

TREATMENT	FIELD EMERG. % OF MEAN
Untreated Untreated	2 CLINE 104.2
Thiram 50 WP	102.0 TRANSPORT
Thiram 50 WP, Apron FL	102.2 between the
Thiram 50 WP, Tach. 70 WP	98.2 004 actor.

All treatments were applied to bare seed and may be a factor if some of the treatments were toxic to the seed. The high rate of Tachigaren applied in 1992 did affect a lab germination done in November 1992 (Table 5).

Table 5 1992 TREATMENT LABORATORY GERMINATION

AVERAGE OF THREE LOCATIONS

TREATMENT	% GERM	11/27/92	
Untreated	FIELD SE	98	
Thiram	EMERG	96	TREATMENT
Tachigaren (average of 5)		28	
Other Treatments 802 2010 .non A .main f	57.6	87.5	Thorn 30 WP
Mean of all 12	2.00	64	Thiram, Apren I

I did plant seed treated in 1990 and 1991 one year later to check for toxic effects. Table 6 was treated in 1990 and planted in 1991. Table 7 was treated in 1991 and planted in 1992. There does not seem to be a consistent, significant pattern to indicate a toxic effect but in three cases, there is a treatment that is significantly less than the untreated check; Table 6, Tachigaren slurry and Apron dry, Table 7, Tachigaren alone and with Thiram.

		Table 6	
A CLEILI		1991 PC 1917	
DRENG	CARRY-OVER	SEED TREATMENTS	
	AVERAGE O	F TWO LOCATIONS	
	. Thir., Mon.	57.8 Apron	
	FIELD	53.7 Thic.	FIELD
TREATMENT	% EMERG.	TREATMENT	% EMERG.
Untreated	VI 8 61.9	Tachigaren 70% WP	59.9
Captan 400	62.4	Tachigaren, Thiram	68.4
Thiram 50 WP	61.9	Tach. (slurry), Terraclor (dry)	57.3
Thiram, Apron	57.5	Tach. (slurry), Apron (dry)	49.8
Thir., Apron, RTI	J-PCNB 58.3	Thir. (slurry), Terraclor (dry)	59.2
Thir., Apron, Chle	oroneb 63.2	Thiram (slurry), Apron (dry)	59.4
LSD (5%)		8.1	

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The start with the star	11119 MISTY 1930	Table 7	the Capacity
this for several years	them California	1992	The Ramilton
ainamoslift bear stor to	CARRYO	VER SEED TREATMENT	been plagued
io ono ai nagottin fice	AVERAG	E OF TWO LOCATIONS	Low quality i
pounds per sore range, ow quality is sugarbest	FIELD	ortant. Residual attrogen levels in this ar	FIELD
TDEATMENT	% EMERG	TREATMENT MADONIC SIL 20300	% EMERG
Untreated	75.0	Thiram GUS 338	76 3
Thiram 50 WP	73.0	Thir Apron GUS 338	73.6
Thiram Aprop	60.8	Thir Apron BTU-PCNB	73.0
Tachigaren 75% WP	66.0	Thir Apron BTIL PONB GUS 338	73.4
Thiram Tachigaren	65.6	Thir. Tach RTU-PCNB	76.6
rinnani, raeingaren	05.0	Timit, Tach, KTO TETTD	70.0
LSD (5%) The six treatments that expressed as a percent	were in both car of the mean.	8.8 Tyover treatment tests are listed in Table 8	3. These are
LSD (5%) The six treatments that expressed as a percent	were in both car of the mean. CARRYO	8.8 Tyover treatment tests are listed in Table 8 Table 8 VER SEED TREATMENT	3. These are
LSD (5%) The six treatments that expressed as a percent	were in both car of the mean. CARRYO ^Y AVE	8.8 Tyover treatment tests are listed in Table 8 Table 8 VER SEED TREATMENT RAGE OF 2 YEARS	3. These are
LSD (5%) The six treatments that expressed as a percent	were in both car of the mean. CARRYO' AVE	8.8 Tyover treatment tests are listed in Table 8 VER SEED TREATMENT RAGE OF 2 YEARS FIELD EMERGENCE	3. These are
LSD (5%) The six treatments that expressed as a percent TREATMENT	were in both car of the mean. CARRYO AVE	8.8 Tyover treatment tests are listed in Table 8 Table 8 VER SEED TREATMENT RAGE OF 2 YEARS FIELD EMERGENCE % OF MEAN	3. These are
LSD (5%) The six treatments that expressed as a percent <u>TREATMENT</u> Untreated	were in both car of the mean. CARRYO' AVE	8.8 Tyover treatment tests are listed in Table 8 VER SEED TREATMENT RAGE OF 2 YEARS FIELD EMERGENCE <u>% OF MEAN</u> 103.4	3. These are blac on the second the told of the top told of told of the top told of told of told of told top told of told of told of told of told top told of told of told of told of told of told of told told of told of tol
LSD (5%) The six treatments that expressed as a percent of <u>TREATMENT</u> Untreated Thiram	were in both car of the mean. CARRYO' AVE	8.8 Tyover treatment tests are listed in Table 8 VER SEED TREATMENT RAGE OF 2 YEARS FIELD EMERGENCE <u>% OF MEAN</u> 103.4 104.9	3. These are bla on the are bla on t
LSD (5%) The six treatments that expressed as a percent TREATMENT Untreated Thiram Thiram, Apron	were in both car of the mean. CARRYO' AVE	8.8 Tyover treatment tests are listed in Table 8 VER SEED TREATMENT RAGE OF 2 YEARS FIELD EMERGENCE <u>% OF MEAN</u> 103.4 104.9 96.2	3. These are bla on stars the on stars the on stars the bla of stars the b
LSD (5%) The six treatments that expressed as a percent marked as a percent Untreated Thiram Thiram, Apron Thiram, Apron	were in both car of the mean. CARRYO' AVE AVE	8.8 Tyover treatment tests are listed in Table 8 VER SEED TREATMENT RAGE OF 2 YEARS FIELD EMERGENCE <u>% OF MEAN</u> 103.4 104.9 96.2 98.1	3. These are bla on the solution the on the solution the blac on the solution
LSD (5%) The six treatments that expressed as a percent sepressed as a percent of the second second threated Thiram Thiram, Apron Thiram, Apron, RTU-J Tachigaren	were in both car of the mean. CARRYOY AVE	8.8 Tyover treatment tests are listed in Table 8 Table 8 VER SEED TREATMENT RAGE OF 2 YEARS FIELD EMERGENCE <u>% OF MEAN</u> 103.4 104.9 96.2 98.1 95.5	3. These are bla on service about the service the on service the on service the bla of a service service service the bla of a service s

CONCLUSION: Even with our poor survival rate these tests show no benefit to any of the treatment materials.