

PROJECT TITLE: Seed Treatment Dwarf Bunt Control in Winter Wheat

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OBJECTIVE: Evaluate Dividend seed treatment for control of Dwarf Bunt in eight winter wheat varieties.

RESULTS: Four soft white and four hard red winter wheat varieties of varying susceptibility to dwarf bunt were selected for the 1992-93 trial. These eight varieties were seeded non-treated as well as treated with 1 oz Dividend per hundred weight. Varieties were seeded on 9/22/92 at a rate of 60 lb / acre. Seeding depth was 3/4 - 1 inch and row spacing was 12 inches. On 10/1/92 an inoculum solution was applied to the test area when winter wheat was in the three leaf stage. The TCK inoculum was prepared using screenings and smut balls from infected wheat samples.

As in the 1992 study, control of TCK dwarf bunt was complete in all varieties when treated with 1 oz Dividend per hundred weight. Hard red winter wheat varieties showed a higher degree of susceptibility to the disease, with Judith having the highest disease infection (49.5 % occular, 25.3% count ). The check varieties Lewjain and Winridge demonstrated a high degree of resistance to TCK.

Yields varied significantly when comparing treated versus nontreated winter wheat. The higher yields with Dividend treated Nugaines, Judith, Tiber, and Rocky could be related to less winter kill, less TCK, and protection from additional diseases which were yield limiting factors in our other winter wheat nurseries this year.

SUMMARY: Dividend provided complete control of Dwarf Bunt on all eight varieties tested.

FUTURE PLANS: TCK Dwarf Bunt evaluations will be continued in cooperative efforts with regional personnel.

Table 1. 1993 Agronomic Data from the Seed Treatment Dwarf Bunt Study.  
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Variety	Trtmt 1/	Yield Bu/A	Test Wt Lb/Bu	Height Inches	Winter Kill %	% TCK 7/1 * Ocular Count	
Luke	Treated	86.1	49.3	37.9	28.3	0	0
Nugaines	Treated	59.7	46.9	33.1	78.8	0	0
Stephens	Treated	96.3	50.0	39.9	13.5	0	0
Lewjain	Treated	80.6	47.5	35.9	13.5	0	0
Judith	Treated	111.7	55.4	45.0	33.3	0	0
Tiber	Treated	101.4	58.1	50.4	24.8	0	0
Rocky	Treated	116.1	58.3	48.2	52.7	0	0
Winridge	Treated	98.9	54.3	51.5	30.0	0	0
Luke	Untreated	75.3	49.4	35.9	42.5	2.5	7.8
Nugaines	Untreated	40.2	44.6	34.8	85.0	5.8	11.2
Stephens	Untreated	83.0	50.6	39.2	30.0	.1	.3
Lewjain	Untreated	75.3	46.9	36.6	25.0	0	0
Judith	Untreated	78.5	52.8	45.1	46.3	49.5	25.3
Tiber	Untreated	79.9	56.2	50.4	55.0	15.5	17.3
Rocky	Untreated	88.7	56.5	46.0	80.0	16.0	17.7
Winridge	Untreated	99.3	53.3	51.3	28.0	.1	0
OVERALL MEAN =		85.7	51.9	42.6	42.1	5.58	4.97
P-VALUE TRTS =		.000	.000	.000	.000	.000	.000
LSD(0.05 by t)=		13.7	3.13	2.06	20.37	9.73	9.50

1/ Seed treatment for treated varieties was Dividend at 1 oz/cwt

\* Percent TCK = % TCK Dwarf bunt per plot. COUNT is determined by average number of infected heads per foot of row. OCULAR rating is visual estimate of percent TCK.