

The dry-dust method gave a substantial increase in percentage germination, vigour of seedling, and totals heads harvested in all the experiments.

Practical Considerations.—The three related disinfectants, Uspulun, Germisan, and Semesan, open up a new field in seed-treatment. In the present experiments not only are they perfect controllants for stinking-smut, but they have shown a remarkable stimulation of the growth of the plant. How far under farm conditions this stimulation will be reflected in increased crop remains to be decided. If the number of heads harvested per hundred seeds sown can be accepted as a guide, then, for instance, the dry Semesan treatment, giving an average increase over the untreated seed of 8 per cent., or $3\frac{1}{2}$ bushels on a 40-bushel crop, would amply repay the outlay in material and labour without any reference to smut-control. The long-time steep recommended is a serious practical handicap to the wet treatments, but this objection is eliminated with Semesan by the simple and apparently more effective dry-dust method.

Table 5.—Incidence of Stinking-smut in relation to Date of Sowing.

Date of Sowing.	Plants.			Heads.			Plants showing Loose Smut.	Ashburton Meteorological Records.		
	Total.	Smutted	Percentage smutted.	Total.	Smutted	Percentage smutted.		Week ending	Mean Temp. F.	Total Rainfall.
1924.	1924.		Inches.
May 17	133	2	1.5	1,048	11	1.0	6	May 17	59.7	0.04
" 24	113	2	1.8	1,056	8	0.7	3	" 24	47.3	0.40
" 31	107	16	15.0	803	98	12.2	2	" 31	47.5	0.84
June 9	108	38	35.2	815	230	28.2	2	June 7	41.6	0.69
" 14	95	27	28.4	692	181	26.1	1	" 14	45.0	0.61
" 21	47	5	10.6	507	67	13.2	0	" 21	39.9	0.24
" 28	56	10	17.8	538	105	19.5	0	" 28	40.5	0.31
July 5	74	12	16.2	612	97	15.8	0	July 5	42.1	0.66
" 12	90	9	10.0	685	56	8.2	2	" 12	41.9	0.06
" 19	101	15	14.8	683	82	12.0	1	" 19	43.9	0
" 26	75	8	10.6	473	57	12.0	1	" 26	37.9	0.24
Aug. 2	103	4	3.9	640	18	2.8	1	Aug. 2	44.9	0.25
" 9	114	19	16.6	521	70	13.4	0	" 9	41.0	0.37
" 16 [†]	131	15	11.4	667	46	6.9	0	" 16	46.1	0.33
" 23 [*]	130	19	14.6	570	51	8.9	1	" 23	42.9	0.09
" 30	79	4	5.0	554	26	4.6	0	" 30	48.5	0.01
Sept. 9	80	2	2.5	498	10	2.0	2	Sept. 6	46.7	0.21
" 13	63	2	3.2	313	5	1.6	1	" 13	47.6	0
" 20	124	0	0	538	0	0	8	" 20	54.3	0
								" 27	53.3	1.04

* In these two sowings the seeds were planted 1 in. apart, 400 seeds being sown instead of 200 as in the other sowings of the series.

Mean of Controls in Table 3.—Dates of sowing, August 5 and 7. Plants—total, 103.8; percentage smutted, 9.8. Heads—total, 688; percentage smutted, 7.2. Plants showing loose smut, 1.7.

The above data (Table 5) are founded on weekly sowings of 200 seeds of Purple-straw Tuscan wheat, 1923 harvest, inoculated in bulk with one part of smut spores (*Tilletia Tritici*) to 750 parts by weight of seed. The sowings were carried out by Mr. J. G. McKay at the Ashburton