

# Effect of Sulfur Dust on Germination Of Sugar-Beet Pollen

ERNST ARTSCHWAGER<sup>1</sup>

In the course of routine pollen-germination tests at State College, New Mexico, during the 1941 season, a sudden drop in germination was noticed on May 11 and on the following day. (See table 1.) Since germination tests had run very high for the season, an explanation was sought for this unexpected phenomenon. It was learned that the field had been dusted with sulfur on the previous day. Since low germination continued for another day, but reverted to the season's normal on the third day, it must have been the sulfur that was responsible for the decrease in the rate of germination.

Since the seed crop was unusually good, dusting, while temporarily incapacitating the pollen, could not have had a harmful effect on seed setting. The stigma of the beet flower is normally receptive over a number of days unless it is permanently damaged and does not permit pollen-tube growth on its surface. That the latter had not taken place was attested by the excellent setting of seed.

Table 1.—Effect of sulfur dusting upon pollen-germination ratings at State College, New Mexico. Sulfur dust was applied to the field May 10.

Test number	May 9 rating*	May 11 rating*	May 13 rating*	May 15 rating*
1	3	0	1	2
2	5	2	3	5
3	0	0	1	1
4	5	1	3	5
5	5	1	1	4
6	4	1	1	5
7	4	3	1	3
8	4	1	1	5
9	2	1	1	3
10	5	2	3	3
11	5	2	1	4
12	2	2	3	5
13	5	2	3	3
14	5	1	2	4
15	5	0	2	5
16	5	0	4	4
17	5	1	3	4
18	2	1	3	3
19	5	1	2	4
20	5	2	4	2

\*0, no germination; 1, very poor germination; 2, poor germination; 3, fair germination; 4, good germination; 5, excellent germination.

<sup>1</sup>Division of Sugar Plant Investigations, Bureau of Plant Industry, U. S. Department of Agriculture,