

that to provide moisture and humidity for such a mass, irrigation must be consistently regular, and mother nature must aid by providing some air humidity.

#### TREATMENT OF SUGAR BEETSEED

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Treatment of sugar beetseed had been practiced in the Arkansas Valley in Colorado from 1919-1928, when all of the seed used for commercial beet plantings in the territory served by the American Crystal Sugar Company was treated with formaldehyde gas. This method of treatment proved practical and inexpensive, and was generally productive of some increase in sugar per acre yield.

During recent years, the Division of Sugar Plant Investigations experimented with dust treatment with beetseed. As a result of this work treated seed is extensively used in Minnesota, where farmers treat their seed requirements using dusts such as Ceresan at the rate of 3 to 4 ounces to 20 lbs. of seed. The stand count results in the great majority of cases have been in favor of the treated seed. (1)

In 1937, Drs. G. H. Coons and J. E. Kotila of the Division of Sugar Plant Investigations, Bureau of Plant Industry, U.S.D.A. sent 4 dusts to a number of companies for treatment of sugar beetseed. A series of well replicated plots was requested, the results from which were to be reported at the meeting of the American Society of Sugar Beet Technologists. The dusts used were:

1. 1937 "Ideal" a 1:1:1 mixture of copper carbonate, mercuric chloride and urea, ground to a fine powder. Dosage 4 ounces to 15 pounds seed.
2. Copper carbonate -- Dosage 4 ounces to 15 pounds seed.
3. Ceresan (2% Ethyl Mercuric Chloride). Dosage 4 ounces to 15 pounds of seed.
4. Ceresan 2 parts, copper carbonate 1 part. Dosage 3 ounces to 15 pounds seed.

The seed was mixed with required dosage of dust in a barrel churn for 5 minutes and following treatment planted in 5 replicated series in 8 row plots, some 300 feet in length. The results are shown in Table 1.

Table 1. Effect of Sugar Beetseed Treatment, on Tonnage Yield, Percent Sucrose, and Pounds Sugar Per Acre. Rocky Ford, Colorado, 1937.

<u>Treatment</u>	<u>% Stand</u> 10" basis	<u>Tons Beets</u> <u>Per Acre</u>	<u>Percent</u> <u>Sucrose</u>	<u>Lbs. Sugar</u> <u>Per Acre</u>
Ideal	96.6	16.82	14.53	6386
Copper Carbonate	97.3	16.35	15.02	6419
Ceresan	99.1	16.83	15.03	6610
Ceresan + Copper Carbonate	95.5	15.87	14.71	6100
No Treatment	93.7	15.28	15.24	6087
Required for 5% level of significance		.95	.71	549

(1) L. E. LeClerc - Treatment of Sugar Beetseed Increased Stand and Yield. Circ. 57 - Univ. Minn. Agr. Extension Division. 1937.

While none of the differences exceed the level of significance required, the difference in pounds sugar per acre is suggestively large in favor of the Ceresan treated seed compared with the untreated seed. As will be noted, the percent stand was satisfactory in all cases, even in the untreated plots. The results suggest that work of this nature should be conducted over a period of years, and in a large number of areas, to determine merits of seed treatment.