

FERTILIZER PLACEMENT, RIDGE PLANTING, DISK VERSUS SHOE OPENER,
MECHANICAL THINNING

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Disk furrow openers give better stands of beets than shoe furrow openers. They justify the greater initial cost. The results are measured by germination stands as percent of inches per row containing seedlings. This year the disk furrow opener gave a 38% stand as compared to a 26% stand for the shoe opener, a 43% increase for the disk over the shoe. The average for five years' results show the stands in the disk planter to be 58.6 as compared to 50.52 for the shoe, an increase of 16%.

Machinery trials of ridge planting equipment showed incidentally that there was no significant difference in the tonnage of ridge planted vs. flat planted beets, a slight trend in favor of the flat planted. Many measurements were taken on the relative sizes of beets grown by the two methods, and a significant difference was found in that the length of the ridge planted beet was 8.488" as compared to flat planted beets, 8.17". The diameters of the ridge planted beet was smaller, 4.133", as compared to 4.283" for the flat planted beet. While these differences are significant, they are comparatively small. Germination stands by both methods are identical.

Studies this year gave results somewhat similar to those of previous years. One outstanding result was that for the first time we have some experimental data showing the definite kill of small seedlings when the fertilizer had been placed in direct contact with the seed. The results show that where phosphate had been placed at a distance from the seed, the germination stand was 51.0 and where the phosphate was placed with the seed, the stand was 25.7. In general, the indication is that better results are obtained when the phosphate is placed lower than the seed and rather close to the row. Apparently when plenty of moisture is available, there is no harm in putting the phosphate with the seed, as indicated by one test where yield was somewhat greater by this method.

Tests of experimental single seed planting equipment lead to the conclusion that it is mechanically practical to expect a rather uniform placing of the seeds in the furrow at an expected distance of one seed per inch of row. Tests have been made in field speeds ranging from .8 of a mile to 2.9 which show more misses at the higher speed but not sufficient misses to make it undesirable. In general, with ungraded seed, more small seeds are planted than the large ones which could be expected to give approximately the same number of seedlings per foot irrespective of size of seed.

SINGLE SEED SUGAR BEET PLANTING

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Research by the Bureau of Agricultural Engineering and the Agricultural Experiment Stations of California and Colorado on the mechanical blocking and thinning of sugar beets brought to our attention a few years ago the desirability of a more uniform distribution of seedlings in the row. An ideal stand for mechanization would be one with single seedlings regularly spaced every