

folded blotters. Counts are made at 3, 5, 7, 10, and 14 days. Most of the germination has occurred by the sixth day.

We have periodically participated in tests submitted to different laboratories from the same sample and have found the results satisfactory when all laboratories concerned use the official method. Tests were made in this manner with the California state laboratory over a 2-year period involving several hundred tests. The average for each year varied less than 3 percent, and less than 10 percent of the individual tests varied more than the allowable tolerance which are as follows:

	Tol.		Tol.
96 or over.....	5	70 or over but less than 80.....	8
90 or over but less than 96.....	6	00 or over but less than 70.....	9
80 or over but less than 90.....	7	Less than 60.....	10

In conclusion, we would like to recommend that the Association of Sugar Beet Technologists adopt the official method of testing sugar beet seed.

Standard Methods of Laboratory Germination of Sugar Beet Seed in Canada

K. W. HILL¹

In Canada seed traffic and merchandising are rigidly controlled by federal statute. Until the last decade almost all sugar beet seed used in Canada was imported from Europe, and consequently purity standards have been established to which strict adherence is maintained.

Laboratory Methods For Regular Seed

Screening.—A seed sample presented for germination may be screened over a screen of 2-millimeter mesh to remove light dust.

Soaking.—Four samples of 50 seeds each are then selected and each sample is set to soak in a separate aluminum cup containing at least 50 cc. of tepid water. The first water is changed after soaking approximately three-quarters of an hour; and thereafter the water is changed every hour throughout the soaking period which must be at least 3 hours but not more than 6 hours. After soaking, the seed is thoroughly drained over a wire mesh before planting.

Planting.—Each sample is planted between blotters and germinated at a temperature of 20° to 30° C. The temperature is allowed to rise gradually in the morning and fall gradually at night, one complete cycle being made each 24 hours. The blotters used are prepared specially and are meant to be free from active nitrogenous or sulphurous substances.

¹Agronomist, Dominion Experimental Station, Lethbridge, Alberta, Canada.

Counting.—Counts are made at 3, 5, 7, and 10 days; seed pieces which do not produce normal radicles are not considered.

Pre-chilling.—When newly harvested seed is being tested, a duplicate sample is pre-chilled at 7° C. for 4 days and then germinated at the same time as the unchilled sample. If there is a discrepancy between these duplicate samples the pre-chilled one is considered the more accurate.

Segmented Seed

The same general laboratory methods are followed with segmented seed as with whole seed. However, it is felt necessary to allow further elongation of radicles from segmented seed pieces of questionable normality than is considered necessary with entire seed.

Purity Analysis.—All seed submitted for germination test in Canada is subjected to a purity analysis. This fact has introduced a complication in germination tests of segmented beet seed. According to rule any material which is not a true seed is classed as inert material. In the cereal grain analyses a broken kernel is not counted if it is less than one-half kernel. With segmented sugar beet seed the empty pieces of pericarp of comparable size to the seed pieces constitute a problem. The analyst would normally remove these as inert material but if this is done the laboratory germination percentage will not be truly related to the field germination since these empty pieces of pericarp would be metered out by the drill with the same readiness as would pieces of comparable size containing true seed.