

Germination test of sugar beet seed

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Introduction

Rules for sugar beet seed germination tests are set out by ISTA (International Seed Testing Association). Despite the application of these rules differing results between laboratories may occur, especially if lower temperatures are in use. In order to minimize possible deviation a more detailed description of the germination test was developed over several years by collaboration of 11 laboratories in 9 European countries. In this poster an extract of the methodology of germination test for sugar beet is given. The complete description is available in the proceedings of the 67th IIRB-Congress and an electronic version with coloured pictures is available from the IIRB office.

Methodology

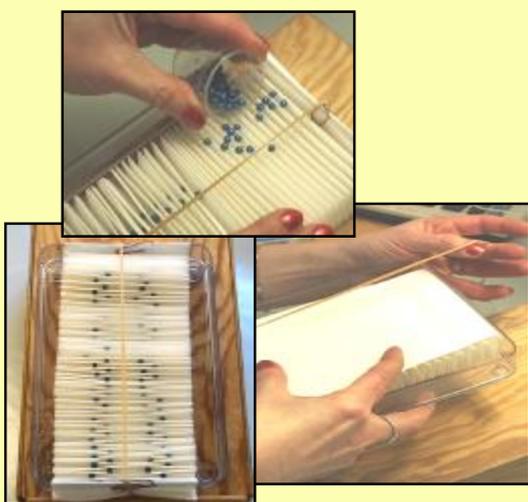


Fig. 1: Procedure of germination test



Fig. 2: Abnormal germs (examples, left, middle), Normal germs (examples, right)

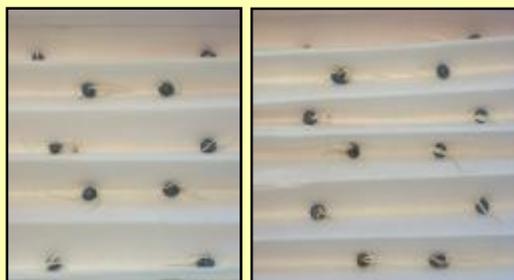


Fig. 3: Bigerms (left); Twins (right)

Type of seed to be tested:

Ø pelleted seed

Equipment:

- Ø Plastic germination seed boxes
- Ø Pleated paper and covering paper, white or grey
- Ø Climate chamber or incubator

Procedure:

- Ø 4 replicates of 100 pelleted seeds should be used
- Ø each replicate should be placed in dry pleated paper
- Ø the covering filter paper is placed in the germination box
- Ø after placing the pleated paper in the box the covering paper is folded over the top of the pleat before watering
- Ø 40 ml (+/- 1 ml) of water at e.g. 20°C (± 2°C, related to temperature of chamber) should be used
- Ø the water must be poured carefully over the top of the covering paper
- Ø when the four replicates have been completed they are placed in a dark germination chamber or incubator, which is calibrated to e.g. 20°C (± 1°C)

Counting:

- Ø 4 day count: after 96 hours (+/- 1 hour) the first germination count is made
- Ø 7 day count: after 7 days a germination count is made (interesting at lower temperatures; not described at ISTA)
- Ø 14 day count: final germination count is made

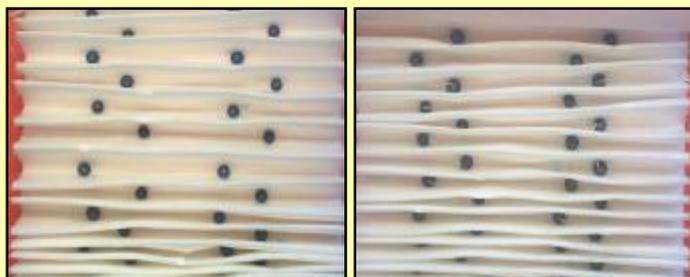


Fig. 4: Not germinated seed (left); Germinated seed (right)

Outlook:

Due to the special difficulty of determination of abnormal germs there will be a workshop at GEVES in France in June 2004.