

Grain Inspection Hand Book

Montana Standards

Book 1 – Chapter 10

Barley Germination

GRAIN INSPECTION HANDBOOK
BOOK 1, CHAPTER 10
BARLEY GERMINATION

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Journal 35: 114 (1977) pages 144 to 122 APPENDIX B

10.1 - BARLEY GERMINATIVE ENERGY: MODIFIED AUBREY METHOD

Use this procedure to determine the percentage of kernels which can be expected to germinate fully under normal malting conditions at the time this procedure is run.

Reagent

a) Tap water. Water temperature may vary without affecting the germination results on normal barley. Room temperature (20°—23°C) is a convenient temperature for performing this test.

Apparatus

- A. Germinator. Mangelsdorf, Minnesota, Master, or console types of germinators can all be used for barley germination. Heating or refrigerating capabilities are available and optional with the user. Temperature ranges of 15.5° to 30.0°C do not affect results.
- B. Blotting paper. 120 lb. per ream blotting paper provides excellent moisture retention. If lighter weight stock must be used, two lower blotters may be necessary to maintain even moisture retention.

Method

Count out 2 X 100 kernels from a representative sample of barley. Immerse two blotters in a pan of clean, fresh, room-temperature water for 3 min. Remove blotters from the pan and allow them to drain for 2 min.

Place one blotter on the germinator tray and place the 100 kernels on the blotter. Provide adequate spacing between the kernels. Place the other blotter on top of the kernels. Press down evenly so that the kernels are firmly sandwiched between the moist blotters. Check daily to be sure that the blotters are sufficiently damp.

After 44 hr. (48 hr., if preferred) in the germinator, count the germinated kernels and discard them. Return the ungerminated kernels to the germinator. Be sure that the kernels are firmly sandwiched between the moist blotters. Make a final germination count at the end of 72 hr from the beginning of germination.

Calculation

Report the 44-hr (48 hr.) and 72-hr germinations as per cent. Example: 68% in 44 hr., 97% in 72 hr.

10.2 - MONTANA STANDARD BARLEY GERMINATION PROCEDURE

Use this procedure to determine the percentage of kernels which can be expected to germinate fully under normal malting conditions at the time this procedure is run.

Reagent

a) Water – Reverse Osmosis or Distilled. Water temperature may vary without affecting the germination results on normal barley. Room temperature (20°—23°C) is a convenient temperature for performing this test.

Apparatus

- A. Germinator. Model Number SSG – Seedburo Corporation. Temperature ranges of 20° to 25°C.
- B. Blotting paper. Seedburo Seed Germination Blotters 0.025" thickness Item number 383.

Method

Count out 100 kernels from a representative sample of barley. Immerse blotters in a pan of clean, fresh, room-temperature water for 3 min. Remove blotters from the pan and allow excess water to drain.

Place blotter on the germinator tray and place the 100 kernels on ½ blotter sheet. Provide adequate spacing between the kernels. Fold second ½ half of blotter on top of the kernels. Press down evenly so that the kernels are firmly sandwiched between the moist blotters. Check daily to be sure that the blotters are sufficiently damp.

Make germination count at the end of 72 hr. from the beginning of germination.

Calculation

Report the 72-hr germinations as per cent. Example: 97% in 72 hr.