

Title Comparison of deterioration of rye under two different storage regimes
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Abstract

Deterioration of stored rye samples was studied at different moisture contents and temperatures. Germination, presence of visible and invisible microflora, and free fatty acid values (FAV) were determined for samples at 10.0, 12.5, 15.0 and 17.5% moisture content (wet mass basis) stored at 10, 20, 30 and 40 °C for 16 weeks. Results of deterioration at constant moisture content (case 1) were compared with previously reported results for deterioration under declining moisture content (case 2). Germination rate was almost the same for all the moisture content samples stored at 10 °C for both cases, but a significant decrease was observed at other temperatures with high moisture content. Fatty acid values remained similar in both cases when rye was stored at 10 and 20 °C, whereas at 30 and 40 °C, FAVs of the rye samples in which the moisture content was maintained were high and increased with an increase in temperature and moisture content. Visible mould appeared early in the samples whose moisture content was maintained. *Penicillium* spp. and *Aspergillus glaucus* group were the predominant fungal species present in both the cases throughout the study. The rate of deterioration was significantly different between the two cases.