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Evaluation of Cultivar Differences in Preharvest Sprouting of Common Buckwheat (*Fagopyrum esculentum* Moench)

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Abstract: Preharvest sprouting of buckwheat (*Fagopyrum esculentum* Moench) is an important problem, but cultivar differences in preharvest sprouting and their causes have not been investigated. We detected cultivar differences under natural field conditions. Preharvest sprouting of three cultivars was significantly lower than that of the current main cultivar. Seeds collected before rainfall were threshed and incubated on a wet filter paper in a petri dish for 10 days at 10, 20, 30 and 40°C in the dark, or at an alternating light and temperature condition of 8 h light at 30°C and 16 h darkness at 20°C. Germination was promoted by a higher temperature except for 40°C, suggesting that the risk of preharvest sprouting in buckwheat is higher at a relatively higher temperature. The risk of preharvest sprouting in the field was highly correlated with germination at 20°C (r = 0.98***) and 30°C (r = 0.99***) in the dark, suggesting that germination test can be used to predict preharvest sprouting in the field. Preharvest sprouting was significantly correlated (r = -0.77**) with main stem length, suggesting that ecotype is partly responsible for this phenomenon.

Keywords: Agroecotype, Buckwheat flour quality, Differentiation, Germination test, Seed dormancy, Selection, Summer cultivation, Temperature

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