

[P1] Field Crop Production

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 1 (Poster) (Field Crop Production)

1:15 PM - 2:00 PM

[P1-02] Effects of Seed Drying and Storage Conditions on the Germination Characteristics and Emergence Rates in Early-Winter Direct Seeding of Paddy Rice

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Large-scale cultivation is necessary for cost reduction and labor saving in paddy rice farming. However, the concentration of demand for machinery and labor during the limited seeding period in spring restricts the scale expansion, especially in snowy areas. Early-winter direct seeding is a promising way to overcome this limitation (Shimono et al. 2012, *Jpn J. Crop Sci.*, **81**, 93-98; Oikawa et al. 2019, *Jpn J. Crop Sci.*, **88**, 259-267), although its practical use requires an improvement in the very low emergence rate in spring. Our recent preliminary studies suggested that seed drying and/or storage conditions may affect the rate: lower drying temperatures appeared to increase the emergence rates of some cultivars. In this study, we tested the combination of three different temperatures (30°C, 40°C and 50°C) for drying and four different temperatures (-30°C, 4°C, 15°C and 25°C) for storage, to compare the germination and emergence rates of a *japonica* rice cultivar "Hitomebore", to help improve the emergence rate in early-winter dry-direct seeding cultivation. The germination rate of stored seeds did not change over the storage period up to spring. However, regardless of the drying temperatures, the longer the storage period or the higher storage temperature tested (except -30°C, where the germination speed did not change), the higher the germination speed. The relationship between the germination speed of stored seeds and emergence rate in the field is discussed.