

[P4] Crop Genetics and Physiology

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 4 (Poster) (Crop Genetics and Physiology)

1:15 PM - 2:00 PM

[P4-24] Contribution of Several Source Organs to Dry Matter Accumulation into Panicles after Heading of Hullless Barley Sown at Different Terms

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Barley has several sources for dry matter into panicles not only leaves and nonstructural carbohydrate (NSC), accumulating into a column during vegetative stage, but also awns and lemma. In this study, we considered contribution of these sources to dry matter accumulation into panicles of hullless barley (*Hordeum vulgare* L.) cv. Haruhimeboshi and Mannenboshi sown at different sowing terms. These cultivars were sown on 12th November and 15th December, which are standard sowing (SS) and late sowing (LS) terms, respectively. The contribution of photoassimilates of awns to dry matter increase of panicles was calculated by the difference of dry matter increase of panicles between non-removed and removed awns. To evaluate the contribution of photoassimilates of lemma to dry matter increase of panicles, panicles were covered with black plastic films to restrict carbon dioxide assimilation. NSC content showed maximum at 20 days after heading, when that of Haruhimeboshi in SS was the highest. Dry matter increase in panicles derived from awn and lemma was higher in LS than that in SS of both cultivars. The ratio of source contribution to the dry matter increase in SS was 55%, 31% and 14% in leaves, NSC and awns and lemma, respectively. In LS, the ratio of awns and lemma showed 23%, which was higher than that in SS. The higher contribution of awns and lemma in LS was implied that source activity of awns and lemma was higher due to higher integrated temperature after heading in LS. From these results, awns and lemma has important role in dry matter accumulation in panicles.