P231

Effects of sowing time and quantity on naked oat (*Avena sativa* L.) in South Korea

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Abstract

This study was conducted to evaluated the effects of different sowing time(October 22, February 20, March 3, March 13, and March 23) and sowing quantities(150kg/ha, 200kg/ha, 250kg/ha, and 300kg/ha) on growth of naked oat(*Avena sativa* L.) cultivar(Choyang-Gwiri) at a cultivation area in Iksan, south Korea. Heading times were delayed with later sowing times. In autumn seeding(Oct. 22) the ear was headed at April 30, in spring seeding(Feb. 20, Mar. 3, Mar. 13, and Mar. 23) heading times were respectively May 14, May 14, May 15, and May 19. Heading time of spring seeding was delayed about 3 weeks than autumn seeding. Ripening times were similar trends to the heading times. In autumn seeding ears were ripened at June 7, in spring seeding each times were respectively Jun. 15, Jun. 13, Jun. 20, and Jun. 20. Ripening time of spring seeding was delayed about 2 weeks than autumn seeding. Culm length and ear length were shortened in spring seeding, but number of plants per m^2 were increased. Number of grains per a ear were 106 in autumn seeding, but grains per a ear in spring seeding were respectively 88, 83, 83, and 73. Weight of 1,000 grains in spring seeding was heavier than that in autumn seeding, the weights were tend to light as later seeding times. Yield of grains was declined as later seeding times, yield of in autumn seeding was 2,900kg/ha, whereas that in spring seeding was 2,180kg/ha. The highest yield of spring seeding time was in Mar. 13, before this seeding time soil surfaces were severely dried as few rain fall, so germination was poor in those seeding times. As several seeding quantities were seeding, earing and ripening times were not different. but increasing seeding quantity, culm length was lengthened and ear length was shortened, number of plants per m^2 were increased and grains per a ear were reduced. Yield of grains were increased more seeding quantities, yield was highest up to 250kg/ha seeding quantity.

Keywords: oat, sowing time, sowing quantity, heading time, yield

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