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Suggestion of Spring Seedling Amounts and Drone Spreader Type for Italian Ryegrass using Drones

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[Abstract]

The production area of Italian ryegrass feed is gradually increasing and labor-saving technologies are being developed. If sowing and fertilization are carried out agricultural drones, working hours and labor are reduced. The purpose of this study is to suggest an appropriate seedling amount for feed production by drone spreading of Italian ryegrass in spring. In addition, we would like to review the productivity of the drone seeding machine that is being developed by Rural Development Administration(RDA) of Korea.

Italian ryegrass was sown by a drone in February at the NICS located in Gye-hwa-hwa, Jeollabuk-do, South Korea. In Experiment 1, 50kg/ha, 60, 70, and 80 seeding rates were sown with a horizontal spreader drone. In Experiment 2, uniform spreaders type drone and horizontal spreader type were sown with the same seeding amount and compared. The drone was sown using the AF-52 aircraft.

The higher the seeding amount, the higher the emergence rate. As the seeding amount increased, the plant length increased, but the number of tillers per individual decreased. The dry matter weight of the feed was the highest at 1,326kg/10a at the seeding rate of 70kg/ha, and decreased by 20.5% at the seeding rate of 80kg/ha. The coverage ratio was the highest at 96 at the seeding rate of 70kg/ha, which was the most advantageous for spring sowing. In the comparative experiment according to the spreader type, the uniform spreader had a high emergence rate per unit area. When the uniform spreader was used, the dry matter weight of the feed was 17% higher than that of the horizontal one, and the coverage was about 5% higher.

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