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Development of mixed catch crops under the influence of abiotic factors and different sowing dates

Ievgen Lebedenko, Lauma Pusa, Inga Jansone, Sanita Zute, Solveiga Malecka and Sallija Cerina*

Institute of Agricultural Resources and Economics, Stende Research Center, Department of Crop Research, Latvia

Abstract

The article analyses the development mix of catch crop during the 2019–2021 growing seasons in the AREI Stende Research Center, Latvia. The experiments were performed to measure biomass and dry matter the amount of above ground parts and root parts produced by catch crops and their changes at different sowing dates and different pre-crop. The Mix of catch crops were: 1. Rye (*Secale cereale* L.) + winter rapeseed (*Brassica napus* B.) + phacelia (*Phacelia tanacetifolia* Benth). 2. Oats (*Avéna satíva* L.) + summer vetches (*Vicia sativa* L.) + phacelia. 3. Oats + mustard (*Sinapis alba* L.). 4. Annual ryegrass (*Lolium multijlorum* Lam.) + buckwheat (*Fagopýrum esculéntum* L.) + phacelia. 5 Rough disc (Control, residual weeds in the field). Sowing time had a great effect on biomass and dry matter production. Research was done in the following crop rotation – winter wheat (*Triticum aestivum* L.) and spring barley (*Hordeum vulgare* L.) with catch crops Mix 1-4 and Control. The effectiveness of catch crops depended on the choice of species, sowing time and main crop harvesting time, as well as on weather conditions during the spring and winter period. Rough disc produced the least above ground of green mass part. In the first sowing period - 3.83 t ha⁻¹ and 2.45 t ha⁻¹ in second sowing. Of all the most effective were Mix of catch crops which produced the most above ground of green mass parts, the Mix 3, first sowing period - 9.07 t ha⁻¹ and 5.11 t ha⁻¹ in second sowing. The paper was prepared in the framework of EIP-AGRI project “Progressive land cultivation system as the basis for environmentally friendly and effective crop production”, No.19-00-A01612-000011.

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