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sciforum-106646: Yield, morphological and physiological parameters of organic and pelleted *Avena sativa* L. plants at different fertilization practices

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Oat (*Avena sativa* L.) is one of the most important self-fertilizing field plant belonging to the Poaceae family. It has no great requirements regarding the growing conditions, but with a very good reaction to fertilization. The current study evaluated the significancy effects of solely application of mineral (NPK) and organo-mineral (OM) fertilizers, and their individual combination with calcium hydroxide ($Ca(OH)_2$), on the yield, certain morphological traits [mean number of leaves per plant - MNLP, minimum leaf length (cm) per plant - MinLL, maximum leaf length (cm) per plant - MaxLL, number of ears per plant - NEP] and physiological parameters (nitrogen balance index - NBI, content of: chlorophyll - Chl, flavonoids - Flv, anthocyanins - Ant), in oat plants, between the treatments and in relation to the control. The NBI and contents of Chl, Flv, and Ant, were measured using Dualex leafclip sensor. The experiment was performed in semi-controlled glasshouse conditions, in pots, from the 4th decade of March to the 4th decade of June, in 2024, using organic and pelleted (graded) oat seeds, with Vertisol soil. The soil is characterized as a light clay with an acid reaction. The obtained results showed that the NBI, the contents of Chl, Flv, and Ant, in both oast, significantly differed between the treatments applied and in relation to control, whereby MNLP, MinLL, MaxLL and NEP insignificantly differed between the treatments. It was also observed a significant increase in all the tested parameters of applied variants in relation to the control, which could also be stated for the yield of both oats. Slightly better data on all tested parameters showed the pelleted oat. The best results were obtained with the use of OM ferilizer+$Ca(OH)_2$, which could be proposed as an optimal fertilization treatment in pelleted and organic oats cultivation regarding this research.

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