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Verification of the influence of the biological additive PGE Flora Forte on the production of oat

The use of biological additives PGE Flora Forte to promote increased yields of varieties of spring oats field.

Oats is a long daily plant, grown with winter and spring forms. It is the youngest cultural largely and suitable crop for both standard as well as for organic farming. Its inclusion in the rotation sequence of the phytosanitary effects is a suitable crop for reclamation because of its massive root system allows you to use all sources of nutrients that are available.

Oats creates different possibilities for their use, from the classic feed (whether as a green feed independently as well as in mixtures, on the silage process or harvest grains for these purposes), to food, especially in the area of the so-called healthy, rational, diet or vegetarian diet itself (squeezing peeled or naked oats for oatmeal, cereal mixture into components, muesli, etc.).

Oats also has also a wide range of non-food uses. It is used for example, for the production of oils for cosmetic purposes, in medicine it is verified by the favourable physiological effects of oat diet on the body and the prevention of cardiovascular and digestive diseases, diabetes and cancer. This action arises from the content of slightly soluble roughages (b glucosone), minerals, antioxidants and vitamins (E, B, etc.).

The environmental requirements for the cultivation of oats have their specificity. Oats is during the whole period of vegetation is very demanding on a sufficient supply of water. Climatically ideal area for the cultivation of oats have plenty of winter moisture, the possibility of sowing in the 2nd half of march, ample rainfall and a relatively lower temperature in may and July, and little precipitation at the time of ripening in early August. The optimal soils are moderate, of humus, with sufficient water absorbing power, providing affordable water to the critical periods.

At the same time achieved yields of oats of linseed, fluctuating around 3 tonnes/ha are unsatisfactory. The annual production of 150,000 tons of barely covers the desired consumption. Therefore, the aim of oats, is to increase yields using soil additives, but without the presence of any chemical substances. One of such soil additives is a biological additive PGE Flora Forte. To verify its effect on the yield of plant oats in spring, renowned research institutes and specialist institutions methodically checked the use of biological additives PGE Flora Forte to create the best conditions to support the increase in the yield of the spring oats field.

Although the main efficiency of biological additives PGE Flora Forte is on soil micro-organisms, direct application on plant growth seems like very helpful and useful. PGE Flora Forte quickly penetrates the soil, it is his natural ability, which is in no way harmful, is created solely from the root or other plant extracts. It can be used in combination with organic or inorganic fertilizers, while in no way fertilizer. Effects of the application of bio-additives on the growth and PGE Flora Forte field yield spring oats, based on its properties, i.e. not separate, activation of soil bacteria, a substantial improvement of biological loosen and aeration of the soil, including strengthening and accelerating growth and increasing yield of spring oats.

Effects of biological additives PGE Flora Forte in the soil, coming about to "micro-biological loosening of the soil (micro-tillage of the soil)" and to create appropriate conditions for microbial life in the soil, but also to release capacity and to increase water retention, which prevents the leaching of nutrients, especially unwanted accessible from the land and creates a secondary beneficial effect in reduction of fertilizer on the effect of groundwater.

Of the varieties of oats, are best evaluated varieties Neklan, Atego and often used the spring variety of oats plant that Auron, was selected for testing, the use of biological additives PGE Flora Forte to support the increase in yield. Tracked values for the test were the spring oats plant decree Auron and the development of the above-ground parts of the plants during vegetation. Advantage is achieved by high yield, resistance to lodging resistance and high quality production. No significant production risks.

Spring oats, grain variety Auron, was to test the cultivated on arable land of moderate with a pH of 7, the treated product Mustang 0.5 l/ha to suppress weeds, fertilized by NPK1 in batch 0,235 t/ha, LAV (27.5%) in the dose of 2,14 t/ha and treated with biological additives PGE Flora Forte 3 l/ha. The crop has been classically treated by vegetation for the cultivation of field crops.

The climatic conditions in the field of oats during the vegetation cover of the spring a variety of Auron:

	March	April	May	June	July	August	September
The average temperature [°C]	1,26	10,31	14,2	17,4	19,63	17,88	15,51
Total rainfall [mm]	8,7	31,1	62,3	32,4	77,9	57,9	29

Test of biological additives PGE Flora Forte on increase yield of the spring oats, varieties of Auron, conducted on parcels of the same dimensions marked A, B, C, which were 6 m wide, the length of the area and extent of 163,3 979,2 m²:

Plot A - without application of biological additives PGE Flora Forte ;

Plot B - 1 application of biological additives PGE Flora Forte ;

Plot C - 2 applications of biological additives PGE Flora Forte ;

The yield of grain of spring oats vetch Auron from the individual plots:

	Plot A (without PGE Flora Forte)	Plot B (1xPGE Flora Forte)	Plot C (2xPGE Flora Forte)
Yield calculated on the 1 ha	4,667 t.ha-1	6,433 t.ha-1	7,506 t.ha-1

From the table it is noticeable the influence of biological additives PGE Flora Forte on grain yield of the spring oats, linseed variety Auron. When a single application increased yield of 1 ha of 1,766 t and two applications of 2,839 t.

The comparison of three experimental variants (Variant A – control – an unhandled biological fuel PGE Flora Forte, Variant (B)-1 x treated and option C – 2 x treated), the positive impact was detected biological additives PGE Flora Forte on the yield of grains of oats, linseed variety Auron. Proven to increase yield of grains of oats linseed variety Auron on average about 65%. At harvest losses have not been observed, because they were the same on all experimental plots and the outcome could affect you.

When processing text used knowledge gained while solving research project the influence of biological additives PGE Flora Forte on the yield of grains of oats, linseed variety Auron.

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