REPORT

on verification of BIO-GEL product effectiveness in reducing the pesticide load on soils in UTC-Agroproduct association

1. Problem solution to be verified: 20% dose reduction of chemicals used for winter wheat protection due to applying BIO-GEL liquid organic fertilizer.

2. Product author: S.B. Osipenko individual entrepreneur

Verification was conducted in UTC-Agroproduct association in Zmiyivka, Kherson region.

Persons in charge of verification: S.O. Sayets, PhD, Head of agrotechnology department, Institute of Irrigated Farming, NAAS, V.A. Marchuk, chief agronomist of BIO-GEL company, M.M. Moskalenko, chief agronomist of UTC-Agroproduct association.

3. Verification conditions. The verification was conducted with *Epoha odeska* variety of winter wheat after winter rape as a precursor. On the whole weather conditions were adverse for yield formation as lack of rainfall and high air temperatures caused air and soil drought.

4. Experimental plot area: 26 ha.

5. Year of verification: 2018

6. Methods of verification: field experiment according to the scheme:

A) Technology of winter wheat cultivation using BIO-GEL (2 l/ha) and conventional plant protection technology used in winter wheat cultivation (control): at the end of tillering phase (15.04.2018) - Trigger herbicide (35 g/ha), Kolosal Pro fungicide (0.350 l/ha), Contact Plus insecticide (0.150 l/ha) and Trend 90 sticking agent (0.1 l/ha), in the earing phase (16.05.2018) – Kolosal Pro fungicide (0.350 l/ha), Lamdex insecticide (0.150 l/ha), BIO-GEL product (2 l/ha), carbamide (5 kg/ha) and Trend 90 sticking agent (0.1 l/ha).

B) Suggested technology: chemicals dose reduced by 20%: in the tillering phase (15.04.2018) – Trigger herbicide (28 g/ha), Kolosal Pro fungicide (0.280 l/ha), Contact Plus insecticide (0.120 l/ha), BIO-GEL product (1.5 l/ha) and Trend 90 sticking agent (0.08 l/ha), in the earing phase (16.05.2018) – Kolosal Pro fungicide (0.280 l/ha), Lamdex incecticide (0.130 l/ha), BIO-GEL product (1.5 l/ha), carbamide (5 kg/ha) and Trend 90 sticking agent (0.08 l/ha). Results. The yield of *Epoha odeska* variety of winter wheat under conventional chemical cultivation technology with BIO-GEL added (2 l/ha) was higher than 6.0 t/ha yield on the whole area which was higher than projected under extreme air and soil drought.

7. In the cause of the experiment it has been noted:

A) In the experiment after reducing the herbicide amount by 20% the weeds elimination both in the control and the experiment was not less than 95%;

B) In the experiment after reducing the fungicide amount by 20% no bacterial diseases were observed, which testifies to the preventive effectiveness of the suggested technology with chemical load reduction by 20%. At the same time the inhibition of wheat plants at a lowered rate of herbicide and fungicide was less and almost did not differ from plants before chemically treated.

C) At the same time the suggested technology did not result in higher wheat productivity, that is, in higher yield.

D) At the same time we should consider the prolonged period of harvesting because of heavy rains. That is why taking into account the great practical experience of the BIO-GEL company we think it reasonable to repeat the experiment next year and decrease chemical load by 30%.

8. Persons in charge of the experiment:

UTC-Agropoduct association	**BIO-GEL company**
Chief agronomist M.M. Moskalenko	PhD, Head of Agrotechnology department, Institute of Irrigated Farming, NAAS S.O. Zayets
	Chief agronomist V.A. Marchuk
	Director S.B. Osipenko.