

Field trial - Wheat

Application of BioAktiv Professional Plants
Agrargenossenschaft Roitzsch e.G. (agricultural cooperative)

Crop: Winter wheat
Variety: RGT Reform
Area: 15 ha total; sub-divided into 3 sections of 5 ha each
Previous crop: Winter barley (BioAktiv was already applied in 2017/2018)
Applications: 10/04/2019: 1 kg/ ha BioAktiv Professional Plants
17/05/2019: 1 l/ ha BioAktiv Professional Plantbooster

Starting situation:

Three experimental areas each measuring 5 ha, comprised a total of approximately 15 ha: left - untreated, centre - untreated and rolled, right - treated and rolled.

The prolonged drought periods of 2018 and 2019 should be noted among other factors.

Virtually no biological activity was evident across the entire area. This was confirmed by a quick soil analysis/ classification (in which the approximate earthworm population density was measured). There were no earthworms in the middle of the area and only isolated individuals could be found at the field edge.

It should be also noted the inhomogeneity of the area, partly with a soil rating of 20 points.

The goal therefore is to achieve systematic development of the humus layer by increasing the microbial activity of the soil in order to improve the supply of water and to provide a better nutrient cycling for plants roots.



Starting situation 31/01/2019

On 03/04/2019, a part of the area (centre and right) was rolled to stimulate tillering. This process spares the need for a growth regulator and hence avoids stress for the plants.

On 10/04/2019, the marked area was treated with 1 kg/ha BioAktiv Professional Plants.



Application of 1 kg / ha Bioaktiv Professional Plants on 10/04/2019

On 08/05/2019, the area was overflown with our drone.



left: untreated

centre: untreated and rolled

right: treated and rolled

The aerial photo already shows significant differences.

Mechanical stimulation through rolling is not sufficient; additional energetic stimulation of the microorganisms is required.

On the same day, a check of root development and plant health was also carried out.



treated



untreated

We found that the treated area showed significantly greater root development and there were considerably greater quantities of soil stabilising agents produced by microorganisms. Moreover, these soil stabilisers could not easily be shaken from the roots; in contrast, the soil on the untreated area had no structure and easily fell from the roots. At total of 356 stalks with spikes were counted per m² on the treated area, while only 344 per m² were counted on the untreated area.

On 17/05/2019, the marked area was treated additionally with 1 l/ha of Bioaktiv Professional Plant-booster.



Through this treatment an energetically stimulation is brought to the cell walls. Stability of the plant cell walls increases and it also increases the Brix value (concentration of plant sap, sugar content); thus the plants are protected against harmful fungi and harmful organism because their natural immunity was strengthened.

On 28/05/2019, the crop was examined again.



treated

untreated

Some parts of the crop showed powdery mildew and brown rust as well as a light infestation of aphids and cereal leaf beetle; these could be attributed to extreme drought stress these plants experienced.

Plants treated with BioAktiv (left) showed no harmful fungal infection and showed a higher state of health.



treated



untreated

Measurement of the Brix value (sugar content in the plant sap) yielded a value of 22% for the treated area and 18% for the untreated area.

The higher Brix value of treated plants helps to explain the better plant health, as sugar content has a direct impact of the plant's immune system. Thus the plant have better defence mechanisms and cell wall stability is enhanced, so that harmful fungi and other organisms can less harm the plants.



The aerial photo taken on 27/06/2019 shows that the area on the right, treated with BioAktiv, is noticeably darker than the untreated side on the left. This indicates that the soil has already formed significantly more humus.

"Roots of today are the humus of tomorrow!"

It should be noted that in 2018 and even 2019, these areas experienced drought and very low levels of precipitation; consequently, consistent formation of humus is able to withstand these extreme weather conditions in the long-term.

By activation soil biology, soil-building processes take place. Water storage capacity, seepage and stability of the soil aggregates improve and the soil becomes more porous.

Furthermore, through stronger formation of roots it increases assimilation capacity of the plants and provides additional organic matter for the soil, as the roots remain in the soil after harvest.

