REPORT

«Skhidne» LLC

Crop type: winter wheat

Field: A

Kharkiv oblast, Balakliya Rayon, village Skhidne

1. Weather conditions

The analysis of weather and climate data showed that the available soil moisture during the growing season in April-May 2020 was insufficient. In April, there was up to 20 mm of precipitation, which is half of the monthly norm, and in May - up to 13 mm. The rains were in strips. Also in April, night frosts down to -6-8 C were observed, which led to plant stress.

In general, it can be stated that the conditions of the spring vegetation were not entirely favorable for the development of winter wheat. At the time of the survey, the crops were in good condition due to the fact that no high temperatures were observed during the critical periods of generative organs formation.

2. General comments on the state of the crop

The assessment of winter wheat crops at Skhidne LLC was carried out as of May 12-13, 2020. The total area under the crop is 700 hectares, the inspected area is 11.5 hectares. At the time of the inspection, the vegetation of winter wheat is taking place in satisfactory weather conditions. The phase of plant development is the beginning of stemming. The predecessor is peas, according to the owner. Plants are evenly developed. The density of productive shoots is about 400 pcs/m2. The winter wheat crops have not suffered any plants' losses.

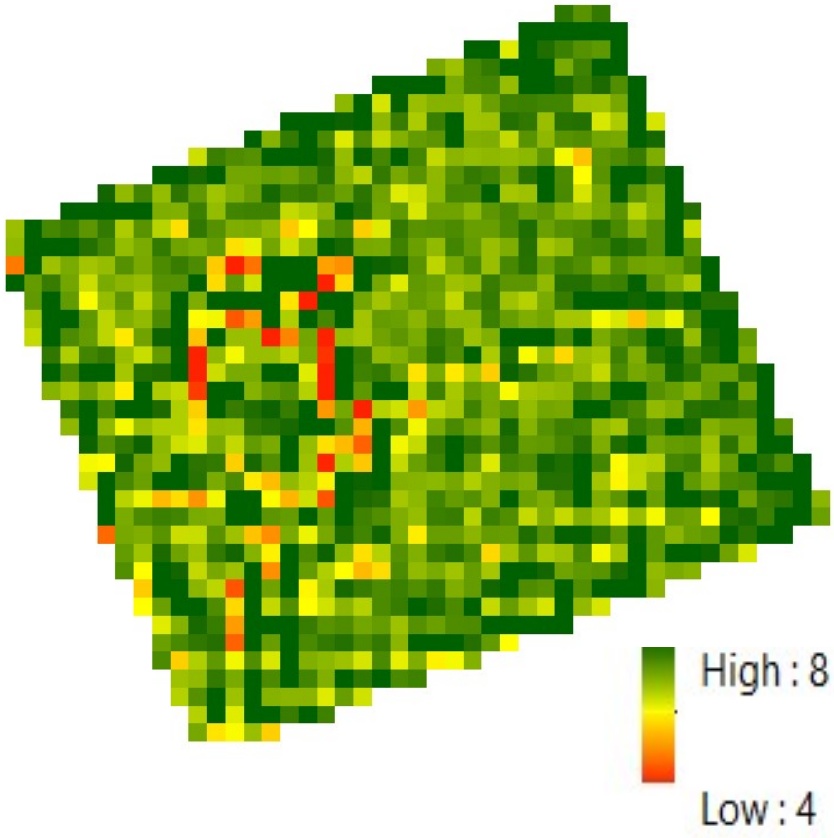
2.1 Estimation of yield

Yield estimation was carried out on the basis of using vegetation parameters of winter wheat plants according to remote sensing data. The variation of yields across the field was determined and productivity zones were identified. The predicted average biological yield over the field is 7.12 t/ha. In the central part of the field, there are areas with less developed vegetation, and therefore the yield in these and adjacent areas is less than the average and does not exceed 6 t/ha, which is due to the peculiarity of the field's microrelief.

Statistical analysis of the distribution of yields across the field showed that yields vary from 1.99 to 12.36 t/ha, with average values in the zones of 4.74 t/ha and 9.88. The most representative in the field is the class with a yield of 7.0-7.8 t/ha, which accounts for 43%.

Gross yields vary significantly across the field productivity zones. Zones 1-2 and zones 4-5 in terms of gross yield are combined into common classes and characterize low and high gross yields within the field, respectively.

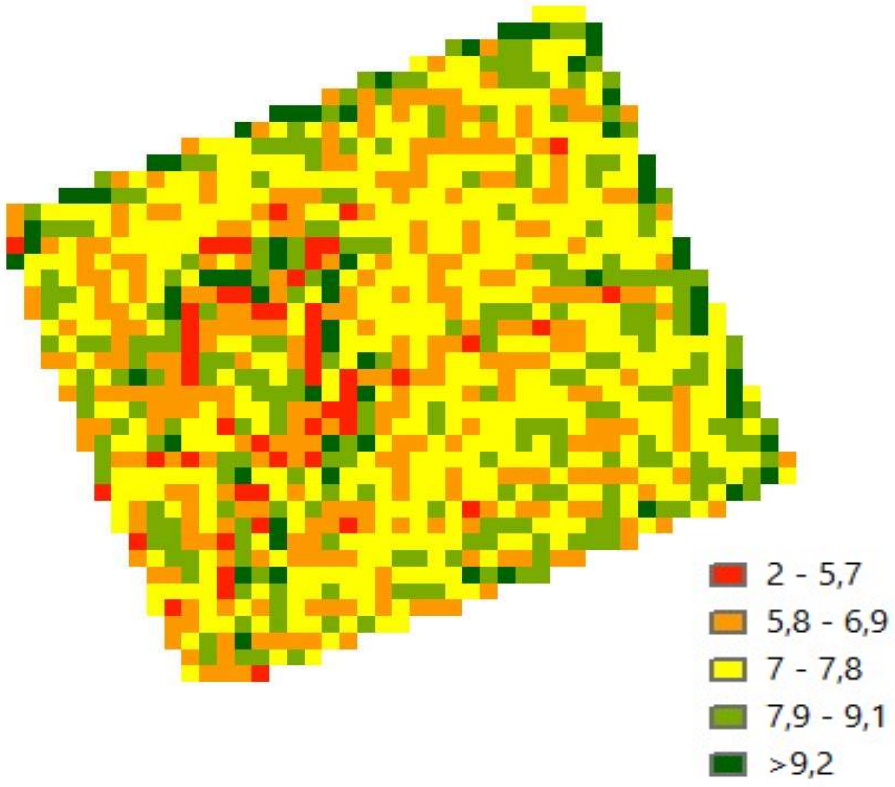
2.1 Forecasting of the yield



Forecasted yield on the field is 7,12 t/ha

Standard error of forecast

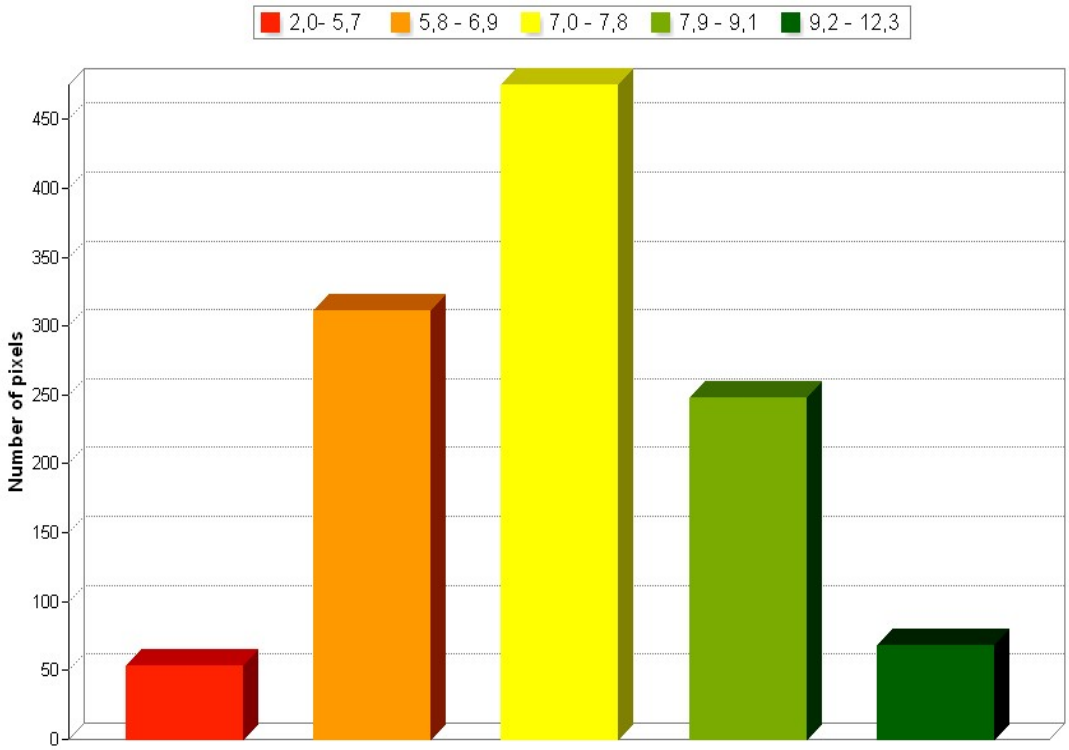
SE – 1,66%

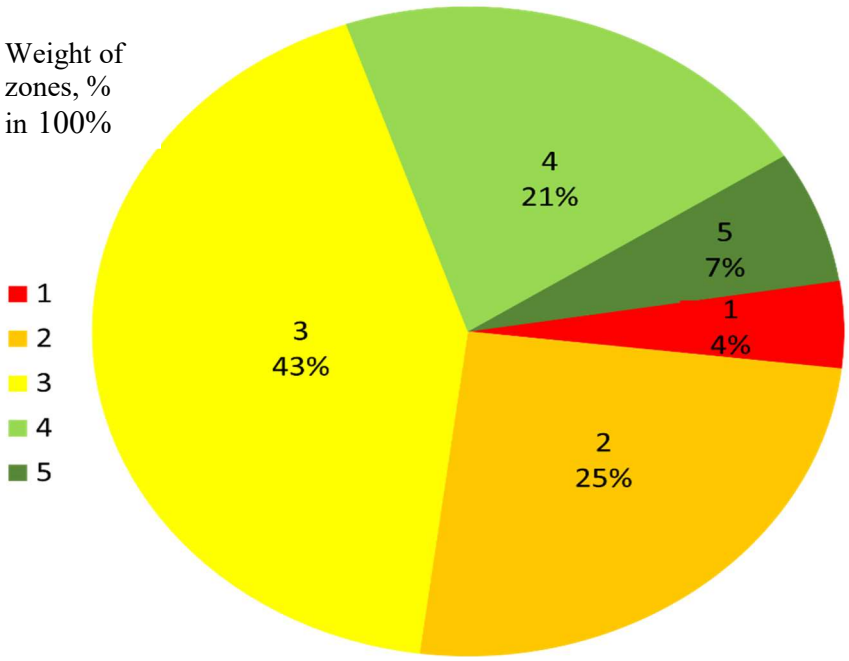


Zones of yield, t/ha

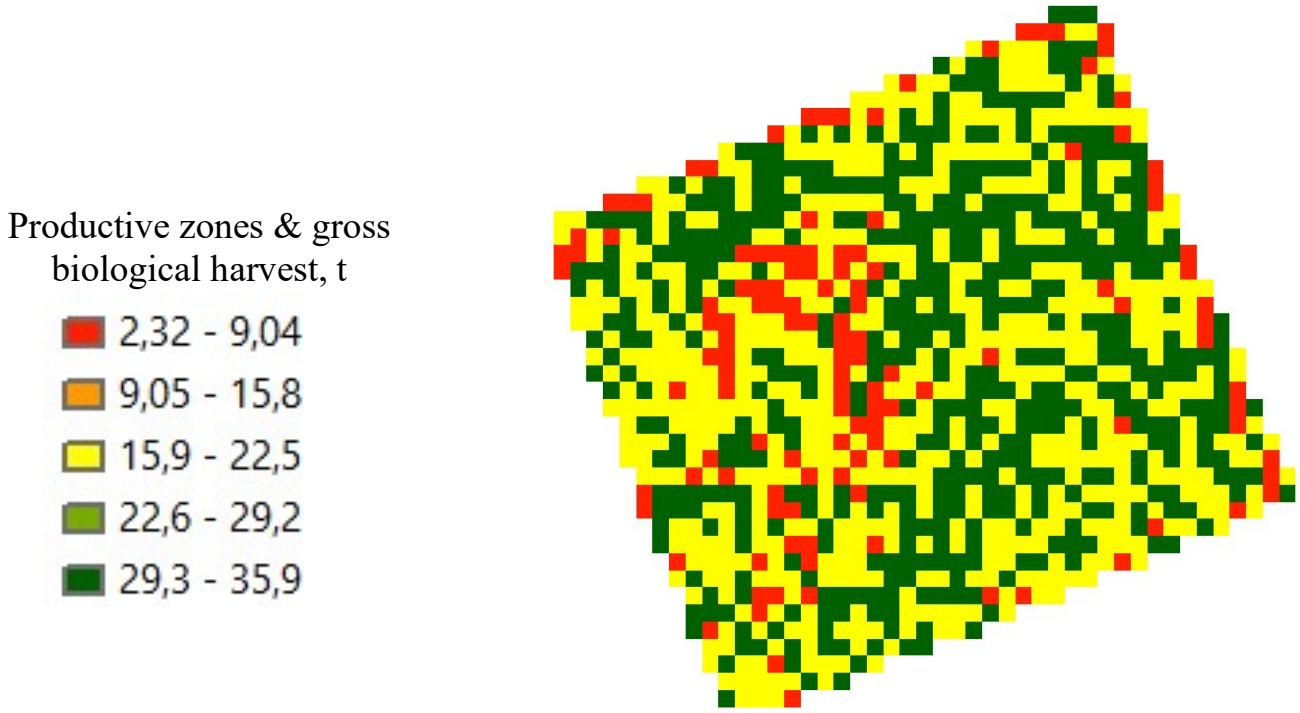
2.2. Statistical analysis

Here's a histogram of the yield distribution on the field, and the weight in % of each zone vis-à-vis 100% of the field acreage.





Zones	1	2	3	4	5
Estimated yield, t/ha	2,0 - 5,7	5,8 – 6,9	7,0 – 7,8	7,9 – 9,1	9,2 – 12,3
Площа зон, га	0,49	2.91	4,93	2,44	0,76
MIN	1,99	5,65	6,88	7,73	9,03
MAX	5,57	6,88	7,72	9,00	12,36
RANGE	3,58	1,23	0,84	1,28	3,33
MEAN	4,74	6,48	7,28	8,16	9,88
STD	0,80	0,33	0,23	0,33	0,65
SUM	241,72	1937,77	3465,75	2065,98	751,06
Gross biological harvest, t	2,32	18,86	35,89	19,92	7,51



11,55 ha		84,51 t
Acreage of the field		Gross biological harvest, t

3. Expert conclusions

Based on the results of the inspection of the reference fields, it can be stated that the crops are in good condition and, under further favorable weather conditions, especially moisture supply, it is possible to achieve the planned yield.

In case of drought, the planned yield may be reduced by 1.0-1.5 t/ha.

The complex of technological works on growing winter wheat crops and planned measures for fertilizing winter wheat crops are carried out on time and are determined on the basis of agrochemical soil analysis and plants' diagnostics, which allows us to carry out fertilization based on the needs of the crop.