TECHNOLOGY FOR THE ACQUISITION OF THE PRODUCTION OF CROP FRAINS IN THE SYSTEM NON IRRIGATED IN VARIOUS DOSES OF NP TO HYBRID OLT

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ABSTRACT

The used technology, non-irrigated system and chemical fertilizers for this sort of hybrid, leads to a significant increase of the production when $N_{120}P_{100}$ doses were applied, having in view the use of the most productive hybrids, because the irrigating system is missing, the hybrids which give the best production.

Regarding the existing correlations between the crop technology and the applied fertilizer doses on the Olt hybrid, we observed that they have an ascendant tendency and the correlation coefficients are static guaranteed. Indifferent of briefing system used establish the quantity of nutrients based on nitrogen and phosphor and those administration way must be definite from the base of tests soil.

Soil erosion is an important factor of natural duration. For ensuring the control of erosion and nitrogen and phosphor damages we can use many practices and in the same time increasing the infiltrations in soil function of the type soil and the depth of the critical tissue.

INTRODUCTION

The importance of fertilizers within maize culture logically come from the great production capacity of this culture for which important quantities of nutritive elements extracted from soil are necessary.

In our country, the maize crop (culture) occupies an important area of the arable land and it represents one of the main cereal crops because of its importance in nourishment, feeding the animals and in industry.

The demographic growth of the population as well as the animal effectives imposed an extension of crop areas and a growth of production/ area; these two aspects were possible by an intensification of maize crop by using chemical fertilizers and irrigation systems.

The research that too place in the last two years emphasized the powerful impact of chemical fertilizers combined with applying an adequate technology upon the carried out physiological processes, that is assimilating and dissimilating and the repartition of dry substance in the plant.

The fertilization that uses Nitrogen and Phosphorous creates a stable balance of the soil elements. Phosphorous and Potassium as well applies the brake to the acidification of soil by Nitrogen. These two elements, especially Potassium, intensify the absorption of Nitrogen and balance the ionization report within the plant.

It is necessary that, when applying fertilizers correctly depending on the provision soil degree in assimilable substances and plant needs, the soil reserve of macro-elements and sometimes microelements, to be complete. The present work tries to establish the role of irrigation and applying variable doses of Nitrogen and Phosphorous, it also tries to

ground, from the physiological point of view, the contribution of each factor in achieving high quantitative and qualitative productions.

MATERIAL AND METHOD

The experiment took place on a cambric chernozem, at Beria, Olt County, a non-irrigated system was used, and different doses of phosphorus and azoth fertilizers were applied on a wheat crop in order to observe the production, to forward-looking more efficient hybrids for this area which owns no irrigation system.

Factor **A**: using $N_{60}P_{40}$, $N_{8O}P_{60}$, $N_{100}P_{40}$, $N_{80}P_{40}$, and $N_{120}P_{100}$

Factor **B**: using a non-irrigated system

Factor **C**: Olt sowed plant

Correct application of fertilizations rate:

Necessity correlation between plants demands fertilizations rate application. Establish the economic productivity in accord with soil capacity and practically experience.

Adeqvate period of fertilization application:

The application should be done when the plant need these. It will be avoid to apple in autumn late for crops which are sow in spring and apply fertilizations on freeze soil.

Adeqvate method for applying fertilizations:

It will be used methods efficiently use of fertilizations incorporating in the same time with others agricultural works. It uses calibrated machines for applying the fertilizations.

Reducing soil work:

For crop plants it will be selected the works system of soil in accord with soil proprieties, topography, and clime and plants technology. It will be decrease the number of soil works for reducing the erosion.

Crops rotation:

Where is possible, it will be cultivate vegetable plants for decreasing in the rotation molding also of sod herbs the risk of erosion, reduce the trickling and improve structure.

Appling vegetation curtains:

Using permanently protection plants readable areas reduce the transport of soil and pollution substances attached of this.

Cultivation on:

Field operations are done from the borders reducing the surface trickling, fertilizations losses and soil.

Cultivation in belts:

Alternative belts of crops plants, disposed between other crops. The trickling is filtrated and the infiltration in soil is increasing.

Belt herbs filters:

A permanently belt of sad at the base of a slop ground. When the trickling are at the surface like liquid layers, belt filters remove the particles from trickling and increasing the soil capacity of infiltration.

Areas-filter of natural vegetation:

The indigene permanently vegetation at the base of a gathering reservoir, which filtrated the particles of surface trickling and increase the potential of denitrification.

Terracing:

Channel built perpendicularly on the ground slope for reducing the slope and trickling velocity. It will increase the capacity of infiltration.

Deviate:

Narrow channel built perpendicularly on the ground slope sow with herbs which permitted to deviate the excess of trickling on the surfaces where the erosion potential is decrease.

Herbs way trickling:

Channel with soul which transport the trickling with a small velocity on hard readable surface.

RESULTS AND DEBATES

Year 2010 may be characterized, from the climatic point of view, as a year which had two different parts, the first half , January-June (when the hydro provisioning was showing a deficit), followed by a second half that had precipitation excess. This fact led to satisfactory productions.

Table 1

Chemical properties of the argic chernosiomus from the Beria-Olt

Genetics horizon	Depth (cm)	Valour Ph (H_2O)	S.B. m.e/ 100g	S.H. m.e	Humus %	N prop. %	P p.p.m	K p.p.m
Ap1	0-25	7,02	24,36	3,43	2,80	0,141	22,7	166,7
$Ap1_1$	0-25	7,00	24,34	3,41	2,78	0,140	22,5	166,5
Ap_2	0-25	7,01	24,35	3,42	2,79	0,141	22,6	166,3
Ap2	25-34	7,18	26,84	2,33	29,19	0,133	28,3	172,8
$A2_1$	25-34	7,16	26,83	2,31	29,19	0,132	28,1	172,6
$Ap2_2$	25-34	7,18	26,84	2,32	29,18	0,132	28,2	172,8

The used technology, non-irrigated system and chemical fertilizing this hybrid is represented in table 1, towards the control variant, N_0P_0, where the beans production was of 5,821kg/ha, the production increased by 23.3% when applying $N_{120}P_{100}$.

The following productions were also significant: 6.520 kg/ha when administering $N_{80}P_{60}$, and 6.870 kg/ha when administering $N_{100}P_{80}$. In the last case, the relative production surpasses the control by 18%.

Regarding the existing correlations between the used technology and the applied fertilizer doses on the corn production of the Olt hybrid, polynomial regressions are noticed, within the non-irrigated system they had an increasing tendency and the correlation coefficients are static guaranteed.

Table 2

Influence of the employed non irrigated system and of the applied fertilizers on the production of crop farinas at the Olt hybrid, in 2010

Control	Absolute production within non-irrigated system (kg/ha)	Relative production (%)	Difference towards the control	Signif.
N_0P_0	5821	control	-	control
$N_{60}P_{40}$	6142	105,5	321	-
$N_{80}P_{60}$	6520	112,0	699	*
$N_{100}P_{80}$	6870	118,0	1049	**
$N_{120}P_{100}$	7180	123,3	1359	***

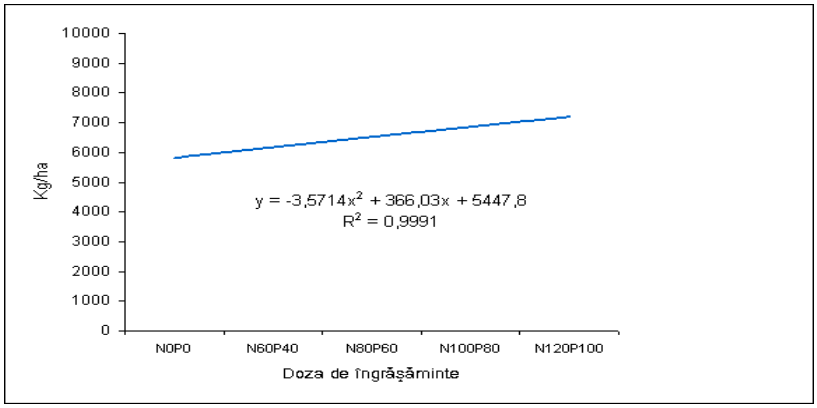

Figure. 1. Correlation of the technologies employed non irrigated system of the nitrogen and phosphorus doses of the crop grains production hybrid Olt, in 2010

Thus, because the irrigation system is missing in this area, the production is still significant in the case of bean production, thanks to the soils property of retaining the precipitations, thanks to using Olt hybrid which has a great accommodation power in this area and helping the hybrid grow by using azoth and phosphorous fertilizers.

Towards the control, we start from a 5.821 kg-ha production and we administer different doses of NP until we reach to a difference of 1.359 kg-ha towards the control when using a $N_{120}P_{100}$ dose.

Figure. 2. The crop hybrid Olt in three steady of vegetation non irrigated system

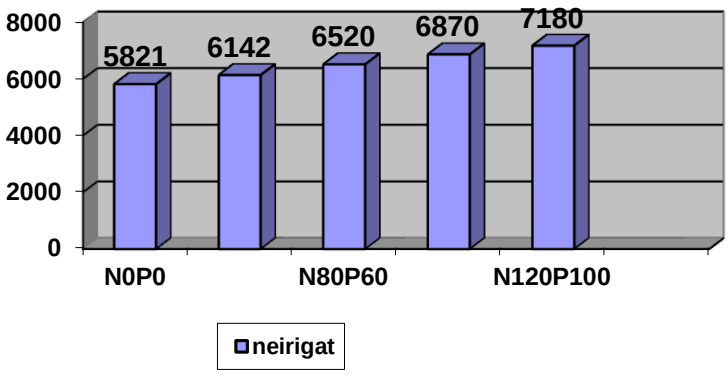

Figure.3. Doses and fertilizers Olt hybrid, in 2010

CONCLUSIONS

The combined influence between the hybrid and the crop culture (administering adequate doses of fertilizer) determines maximum production when fertilizing rationally and using the fertilizers which are indicated on the hybrid and the soil where the application took place.

Good results may be obtained in the case of corn beans production if doses of $N_{120}P_{100}$ fertilizer are applied, or, for economy, $N_{100}P_{80}$.

If the possibility of irrigation exists, this hybrid gives very good productions; it resists well in drought conditions and on cambric chernozem, if treated with an adequate insecticide and guaranteed seed, the results are also very good.

2010 was a favorable year for maize production, and this is noticeable from the mathematical point of view by static secured correlations.

The combined influence of the system of culture, non-irrigated as well as the applied dosage of fertilizers determined noticeable quantitative differences in the case of all qualitative features of Olt hybrid.

The studied varieties, Olt, cultivated in 2010, acted differently from the technology of culture point of view, he values of production being in favor of Olt hybrid.

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