

INFLUENCE OF PLANT FERTILIZATION ON MAIZE GROWING PRODUCTIONS-IRRIGATED AND NON IRRIGATED IN TRANSILVANIA LAND

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Abstract. *Through the research carried out in 2008 to Caianu has been pursued recovery of nutrients by corn of the irrigation regime.*

Keywords: irrigation, water consumption, agro-technologies

INTRODUCTION

The main objective of the authors, is as high level production of grain. Increasingly, however, this priority is dependent upon the elements of technology, which in turn are constantly improving. Maize consume more nutrients.

In order to obtain a wine of 10 000 kg/ha maize consumes up to 280 kg nitrogen 140 kg phosphorus and potassium 260 kg. (Technological Particularities for the cultivation of maize in Transylvania, 2004)

MATERIAL AND METHOD

The experience located at Suatu, Cluj, it was shown that for achieving high levels of production from corn crop, is absolute necessary in addition to maintaining a good supply of water during the whole period of vegetation and soil supply with optimum nutrients.

Experiences have been placed in the camp after method plots subdivided with three factors

Factor A - the irrigation, with a1- non-irrigated; a2-irrigated land to 50% of the active humidity range (I.U.A);

Factor B - level of fertilization, with: b1- non fertilized; b2- fertilized

Because experiments have been carried out in the plain of Transylvania, GPS coordinates on N-46,79 23,97 E, I chose the early hybrid PR39D81, mark Pioneer. A hybrid is resistant to drought, with a high capacity of production employed in conventional FAO maturity class 260-270. Seeding was done by car for sowing SPC6 in April. Irrigation was performed in times when the humidity field was close to the minimum limit

RESULTS AND DISCUSSION

Irrigation has led to advancements in production compared with non-irrigated variants. It was found that the recovery of nutrients by corn very much depends on the

moisture conditions and, in particular, the distribution of precipitation during the growing season of plants. The period in which the maize consumed large amounts of nutrients overlaps with the period during which burned large quantities of water.

Knowledge of water from the soil in the spring, the sowing has great importance for the determination of the dose of fertiliser (particularly nitrogen). For getting more accurate results with lower cat errors, each variant was done 3 times. Experimental field size was 1200 mp. Each rehearsal, contains 3 rows with a length of 24 m.

Fertilization was conducted in two phases, as follows:

- along with the sowing, soil was incorporated in 2/3 of the total quantity of N, in the form of nitric nitrogen and ammoniacal nitrogen and the entire quantity of phosphorus and potassium, and 140 kg N ,105 kg P and 105 kg K. This paper was developed with precision, pneumatic machine with fertilizer (SPC6), observing the distance between rows of 70 cm.

- the rest of the amount of nitrogen in the form of urea, was incorporated in the soil along with first including breeding stock, when plants were between 2-4 leaves.

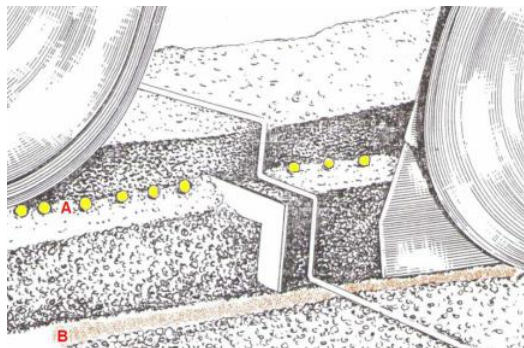


Fig. 2. Application of fertilizer, along with sowing

A-Position seeds row

B- fertilizer applied position suddenly with seeding

Has compartment underlined the fact that the plants fertilized areas responded in the affirmative to the effect of the fertilizer, as it grew on average by 10 cm services till the end of the first phase of growth, leaves 4-6.

For norm and watering age, studies have been conducted, and rigorous observations:

- reserve in water from the soil at times which plants have greater need of moisture (germination, grain filling)
- climate conditions (temperature, winds, precipitation and solar radiation), which directly influences the development of plants.

So in the second decade of July, along with the emergence of experimental parcels scheduled for watering has interfered with a piped irrigation 600 mc/ha, and in the first decade of august, during the establishment grain 400 mc/ha.

In this situation it has been observed that phase generative, which begins apparition tassel, irrigated plants, have had a significant increase of dry matter accumulation, while non-irrigated crops suffered from a lack of water, forming ears insufficiently developed.

On irrigated surfaces were bargaining between compartment underlined fertilizer culture and the non fertilizer culture. Plants size fertilized and irrigated was on average 15

cm larger than size plants irrigated but non fertilized. Ears plants fertilized and irrigated were on average 2 cm longer than the ears plants non irrigated and non fertilized.

CONCLUSIONS

Water from rainfall has proven to be insufficient to obtain high yields in relation to consumer needs for maize in the Transylvanian plain. Thus, the expediency of introduction and maintenance of irrigation, where possible, in the Transylvanian Plain conditions is evident.

Fertilization of maize results in significant production increases. Application of fertilizers in stages, so the plants can absorb the nutrients throughout the period of vegetation, just due to the gradual decomposition of this .

Promotion of the irrigation culture technology of products with the purpose of realization of superior production in comparison with non-irrigated yields obtained in the system calls for heat evolution, water regime and rigorous monitoring of soil moisture dynamics.

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