

The influence of dose fertilizer on the qualitative corn hybrid Furio

Turc Alina^{1*}, Lăzureanu A.¹

¹Faculty of Horticulture and Forestry Timișoara

*Corresponding author. Email: dobra.alina@yahoo.com

Abstract Plant maize (*Zea mays*) is most surprising system that nature has for energy accumulation. From a seed weighs about one third of a gram, rises and develops in about nine weeks a two-three meters tall plants, and around eight weeks to come, it will produce grain 600-1000.

It has good use of the fertilization. Even small doses of fertilizer are recommended with high production increases.

Hybrid Furio has exceptional internal parameters. High starch and protein content makes it useful in starch and forage industry. The internal parameters are used to feed an excellent base for qualitative production of goose and duck liver.

In terms of agriculture, corn has some peculiarities: it has a large production capacity by about 50% higher than other cereals, great ecological plasticity, good run for most crops, monoculture supports many years, mechanized culture 100 % multiplication factor (150-400) better exploit mineral and organic fertilizers, harvesting is done without danger of shaking; opportunities to exploit very different production, etc. Hybrid Furio is considered the best hybrid, considering price / value. It is a hybrid trust, generating income in different growing areas. Safe production is confirmed by practical results. It has excellent capacity several years experience in various areas of culture in Romania.

Harvesting is done with the savings. Removal of water during cooking is fast, it increases the profitability of harvesting and crop safety, even under a rainy year.

Materials and Methods

The experimental field was located on a fertile soil type, using the randomized block method, such as 3 x 4 x 6, in 4 repetitions with 288 variants (1, 3, 4, 5, 6).

We have chosen three different experiments, different doses of fertilizer, based on NPK and version control.

The plots have sizes of 33, 6 m.

The variants studied were applied agro-technical work with Merlin Mix herbicides and herbicides 2l/ha Calisto, with 0,300 l / ha.

Following indices were determined quality of maize harvested in the mature phase: protein, moisture,

Key words

doses of fertilizer, hybrid, production, herbicides

starch and oil. For each variant, three determinations were made, taking into account the average obtained.

OmegAnalyzer G™

The OmegAnalyzer G™ is the workhorse of Bruins Instruments NIR grain analyzers. Is a versatile instrument for grain analysis and is capable of handling grain and seed such as wheat, barley, corn, rice, soy, rapeseed and more.

Typical Applications

Whole grain and seed analysis including: corn, soy, rice, wheat, barley, oils seeds, etc. Universal calibrations are available for protein, moisture, fat, starch, fiber, gluten, sedimentation. Calibration services can develop calibrations for almost any significant component or property for your particular product.

Key Features

- NTEP certified*
- Variable pathlength from 8 to 30mm to accommodate a variety of grain and seed
- ~50 second analysis time with 16 subsamples
- Fully transferable calibrations between instruments

Specifications

Dimensions: 580 X 400 X 470 mm (22.8 X 15.7 X 18.5 inches)

Weight: 40 kg (88 lbs.)

Wavelength range: 730-1100nm transmission ·

.5nm scan increment Sample Presentation:

automatic feed with multiple sub-sample measurements



Figure 1 OmegAnalyzer G™

Merlin Mix – is an herbicide against monocotyledonous and dicotyledonous weeds in maize crops. Assay - Forms:

-Isoxafluton: 50 g / l

-Atrazine 500 g / l

-Liquid: 2.5 liters per hectare of bringing Merlin Mix: Isoxafluton -100 grams per hectare, which shows high activity of this new active substances -1 000 grams per hectare of atrazine, which is consistent with recommendations made to constrain the use of this active substance.

Mode of action - first Isoxafluton swivels inches of soil where the soil colloids is fixed. It acts mainly by root. Equipped with a better system, penetrates the whole plant, and inhibits key enzymes in protecting chlorophyll bleaching resulting in the appearance of the first leaf margins and tips. Weeds appears turn white and die while not pop up.

Reactivation capacity in the soil the first rain is a unique asset. Merlin Mix does not need to be built under combat weeds and grass sprouting in the process of emergence or dawn. Atrazine is absorbed by roots and leaves.

Selectivity - Merlin Mix is a herbicide capable of great selectivity.

Merlin Mix has a broad spectrum of efficacy against weeds dicotyledonous and annual grasses. Dose and period of application - Merlin Mix is an herbicide (without incorporation), which can be applied after corn sowing but before its emergence. To get the best efficiency, benefiting from still moist seedbed is recommended to apply the product as close as possible to sow the land and the final work.

Its reactivation phenomenon allows him to control all weeds before sunrise or after herbicide application, to the extent that a rain of 10 to 15 ml occurs within 15 days of application. However there are two cases when the dose can be reduced to 1.75 l / ha:

- In the case of dicotyledonous weed and a dominant moderate presence of grasses.

- In case of a poorly structured soil or very low in organic matter.

Duration of action of herbicide Merlin Mix is 8-10 weeks. This waiting period is sufficient for mechanical weeding is often necessary and in particular the tamped soil as a result of spring rains. If the phenomenon was not found "crust" and no work is carried out by manual weeding.

Callisto is the active ingredient mesotrione 480 g / l. Natural origin: some species of plants produce and secrete chemicals that affect development of other plants, stopping usually their development.

Mode of action: Calisto 480 is rapidly taken up by plant leaves or roots growing tips and is applied through both xylem and through the phloem. The applications are not affected by the rains that occur after one hour.

Callisto 480SC applied act quickly, the symptoms may be visible within 3-5 days after application, weed death occurring within 2-3 weeks. Callisto 480SC works by blocking an enzyme essential to the operation of the plant. This new mode of action allows control of weeds resistant to treasons, sulfonyleurea.

Sensitive dicotyledonous weeds are controlled by applying until 6 leaf stage and most sensitive stage to 10-12 leaves. Monocotyledonous weeds are controlled only sensitive to three leaf stage. Callisto 480SC is approved for annual weed control in the application dose of 0.2 to 0.35 l/ha or early gramicidin associated with up to 8 leaf stage of corn.

Results and Discussions

The protein content of maize increased with the applied of fertilizer from 10,2% to 11,4% in the blank sample N₁₃₅P₁₃₅K₁₃₅ (Figure 2).

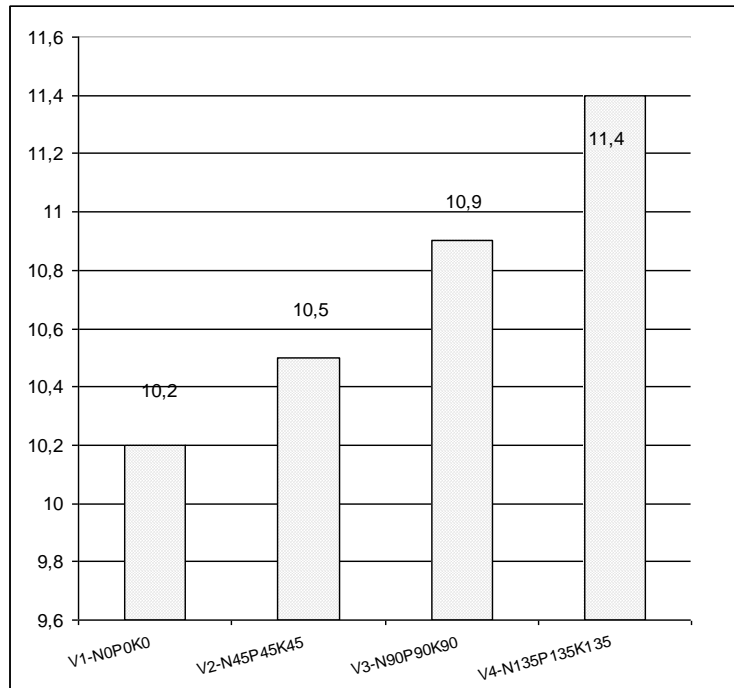


Figure 2. The influence of protein dose of fertilizer to hybrid Furio

Maintain constant humidity limits 11,0-11,3%. Note that version control is equal to the second variant ($N_{45}P_{45}K_{45}$) (Figure 3).

It is noted that the highest oil content (4.1%) was recorded in the variant with the highest dose of fertilizer ($N_{135}P_{135}K_{135}$) and lowest oil content (3,4%) recorded in version control, (Figure 4).

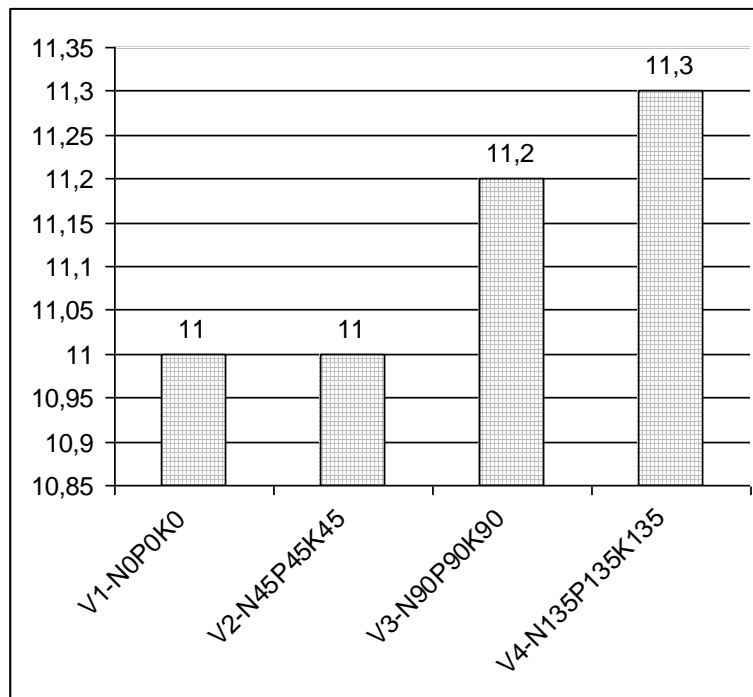


Figure 3. Influence of humidity on the dose of fertilizer at Furio hybrid in 2007

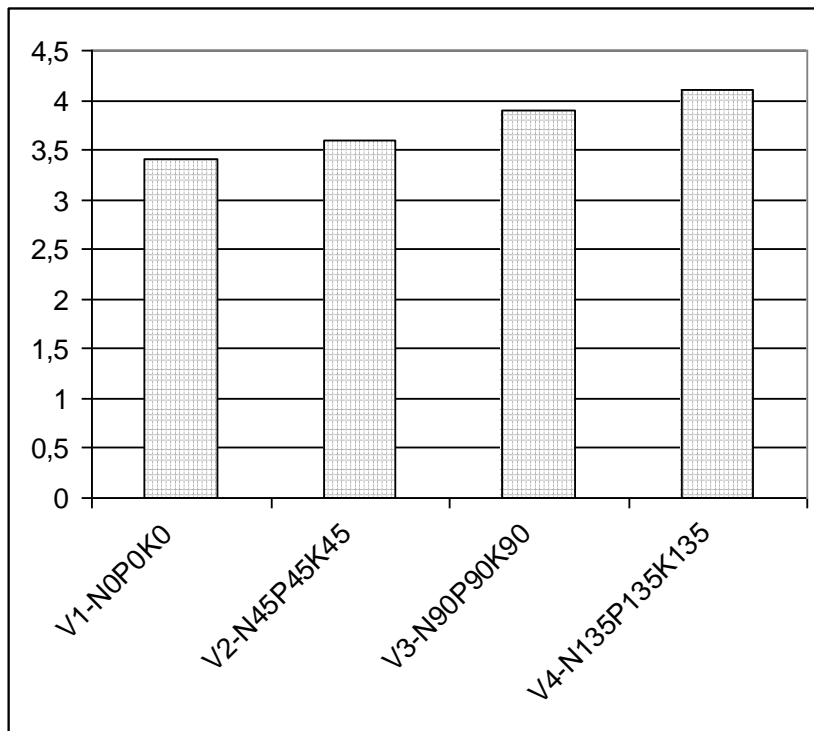


Figure 4. Influence of dose of fertilizer on oil, the hybrid Furio in 2007

The starch content varies not significant variations that were used NPK fertilizer. Variants 2 ($N_{45}P_{45}K_{45}$) and 3 ($N_{90}P_{90}K_{90}$) are equal to the starch

content, and variant 4 ($N_{135}P_{135}K_{135}$) recorded the highest starch content.

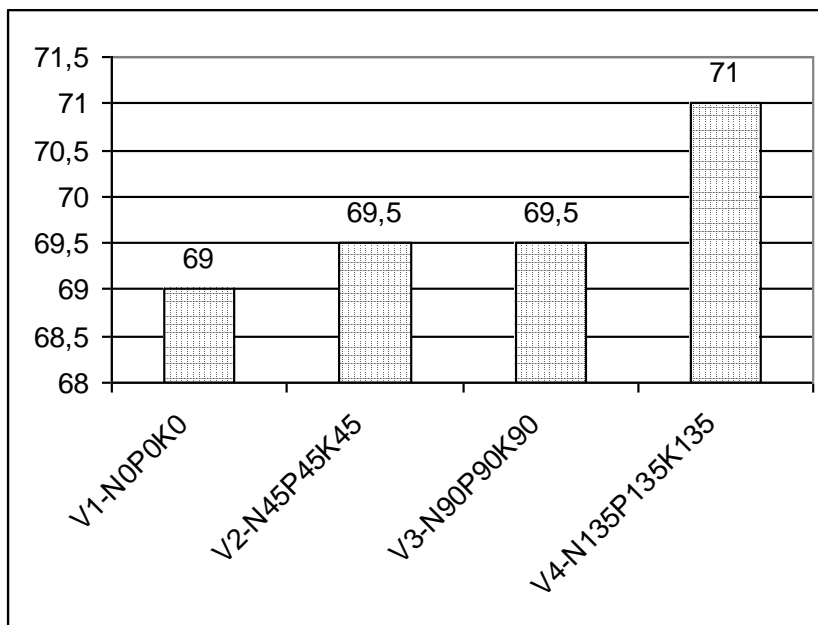


Figure 5. Influence of starch content, the hybrid Furio in 2007

Conclusions

1. Protein content of hybrid FURIO grows with increasing doze of fertilizer applied.

2. Humidity increases with the dose of fertilizer.

3. The oil content ranges from 3.4 to 4.1%, falling within the limits of literature data.

4. Starch content does not change significantly depending on the dose of fertilizer applied.

References

1.Alda S.,2004-Agrotehnică si Herbologie, Editura Eurobit, Timișoara.
2.Alexa Ersilia, 2008 - Contaminanți în produse horticole si cerealiere, Editura SOLNESS, Timișoara, ISBN 978-973-729-152-3.

3.Bîlteanu Gh., 1998-Fitotehnie, vol. I, Editura Ceres, Bucuresti, editia a II-a.

4.Cîrciu Gh., 2004-Agrotehnică si Herbologie, Editura Eurobit Timișoara.

5.FAO 1995-Quartely buletin of statistic, vol. 8, nr.12.

6.Lăzureanu A., 1994-Agrotehnica, Editura Helicon, Timișoara.

7.<http://www.bruinsinstruments.com/OmegAnalyzerG.html>