RESEARCHES REGARDING THE PRODUCTION CAPACITY OF SOME SILO CORN HYBRIDS, IN BATĂR CONDITIONS, BIHOR COUNTY

Irina MARIAN, Luminita COJOCARIU, Nicolae Marinel HORABLAGA, Dacian LALESCU, Cristian RUJAN, Adrian COJOCARIU, Cristian BOSTAN, Florin MARIAN

University of Agricultural Sciences and Veterinary Medicine of Banat from Timişoara, Calea Aradului 119, 300645 Timisoara, Romania
Corresponding author: m_irina_m@yahoo.com

Abstract: *Corn silage is variable in nutrient value due to hybrid, climatic conditions, maturity upon harvest and conservation methods (Bittman, S., Kowalenko C.G., 2004; Jarrige, R., 1988). Corn harvested for silage is an important feed crop. The crop provides livestock producers with a high-yielding, relatively consistent source of forage and the animals with a highly digestible and palatable feed (Roth, G.W., 2001). Corn silage is a major component of diets fed to dairy cows. Even though the grain: stalk ratio and whole plant DM yields are important determinants of the adaptability of a hybrid to silage production, of greater importance is digestible DM per acre, or for dairy farmers, milk yield per acre or per ton. Hence, in recent years corn hybrids have been developed specifically for silage production (Johnson et al., 1997; Kuehn et al., 1999). The aim of this paper is to find the dependence between the production capacity of three corn hybrids used for corn silo. The research was carried out in the experimental fields belonging to society SC Frevest SRL, from the Batăr locality, Bihor county, the experience being placed on a chernozem argiloiluvial soil. The biologic material studied is represented by Mikado, PR34Y02 and Janett hybrids. The experience is placed in accordance with the randomized blocks method, in three repetitions, a parcel surface is 45 m^2. Sowing was made on 15th April 2011. In order to determine the production of corn silo hybrids, the harvesting was done at 75th phenophase (Kernels in middle of cob yellowish-white (variety-dependent), content milky, about 40% dry matter) of corn (BBCH - grasses - U. Meier, 2001). The results of our research show that after the analysis regarding the production capacity of corn silo hybrids, we can conclude that we can observe that do exist significant statistic differences between silo production obtained at Mikado hybrid (56 $t.he^{-1}$) and Janett hybrid, that have obtained a production of 52 $t.he^{-1}$. In which regards hybrid PR34Y02, it have obtained a lower production than Mikado hybrid, but higher than Janett hybrid, and the production differences are not assured from statistical point of view.*

Key words: *corn, silo, production.*

INTRODUCTION

Corn silage is variable in nutrient value due to hybrid, climatic conditions, maturity upon harvest and conservation methods (Bittman, S. and Kowalenko C.G., 2004; Jarrige, R., 1988).

Corn harvested for silage is an important feed crop. The crop provides livestock producers with a high-yielding, relatively consistent source of forage and the animals with a highly digestible and palatable feed (Roth, G.W., 2001).

Corn silage is a major component of diets fed to dairy cows. Even though the grain: stalk ratio and whole plant DM yields are important determinants of the adaptability of a hybrid to silage production, of greater importance is digestible DM per acre, or for dairy farmers, milk yield per acre or per ton. Hence, in recent years corn hybrids have been developed specifically for silage production (Johnson et all, 1997; Kuehn et all, 1999).

Important determinants of the adaptability of a hybrid to silage production include grain: stalk ratio, whole plant yields of DM and digestible DM per hectare, and milk production per hectare or per ton of forage (Ballard C. S. et all, 2001).

MATERIAL AND METHOD

The aim of this paper is to find the dependence between the production capacity of three corn hybrids used for corn silo.

The research was carried out in the experimental fields that belong to the society SC Frevest SRL from Batăr locality, Bihor county, the experience being placed on a chernozem argiloiluvial soil.

The biologic material studied is represented by Mikado, PR34Y02 and Janett hybrids.

The experience is placed in accordance with the randomized blocks method, in three repetitions, a parcel surface is 150 m^2. Sowing was made on 15th April 2011.

In order to determine the production of silo corn hybrids, the harvesting was done at 75th phenophase (Kernels in middle of cob yellowish-white (variety-dependent), content milky, about 40% dry matter) of corn (BBCH - grasses - U. Meier, 2001).

In this paper we take in consideration the production obtained in the experimental years 2011, that allow us to have a few conclusions on the silo corn hybrids capacity production but also about the adaptation capacity in the Crişurilor plain conditions.

The statistical analysis has been performed by Statistica 8 package.

RESULTS AND DISCUSSION

The meteorological conditions of year 2011do present some particularities. Monthly average temperatures, registrated in 2011 have been below multiannual average, excepting April, July and September. The precipitation have been fluctuating.

In January the precipitations have been below the multiannual average.

In the fallowing months, February – March, the precipitations have been higher than the multiannual average.

There have been a lot of rains in the following months: April, May, July and August.

Year 2011 have been favorable for the forage cultures.

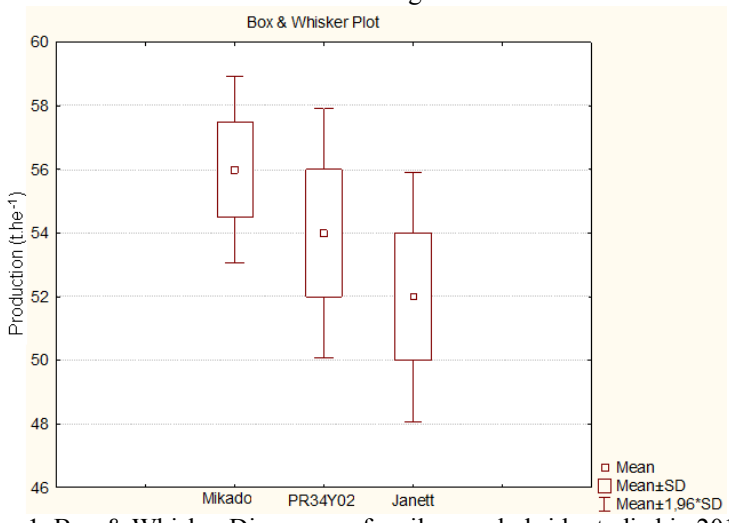

Fig. 1. Box & Whisker Diagramme for silo corn hybrids studied in 2011

Silo productions obtained in 2011, at three corn hybrids have been between 56,0 t.he $^{-1}$ at Mikado hybrid and 52,0 t.he^{-1} at Janett hybrid (fig. 1.).

The obtained production at PR34Y02 hybrid, in year 2011 was 54,0 t.he^{-1}.

To compare the production capacity of the corn hybrids: Mikado, PR34Y02 and Janett in conditions of year 2011, we used Duncan test for multiple comparations (ANOVA).

Tabel 1.

Duncan test for multiple comparations between corn hybrids studied in 2011

Hybrid	**Average production Mikado (56,00 t.he^{-1})**	**Average production PR32Y02 (54,00 t.he^{-1})**	**Average production Janett (52,00 t.he^{-1})**
Mikado		0,233511	0,043154
PR34Y02			0,233511
Janett			

From table 1 we can observe that do exist significant statistic differences between silo production obtained at Mikado hybrid (56 t.he^{-1}) and Janett hybrid, that have obtained a production of 52 t.he^{-1}.

In which regards hybrid PR34Y02, it have obtained a lower production than Mikado hybrid, but higher than Janett hybrid, and the production differences are not assured from statistical point of view.

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CONCLUSIONS

After the analysis regarding the production capacity of corn silo hybrids, we can conclude that the higher production it was obtained at Mikado hybrid of 56 t.he^{-1} and we can observe that do exist significant statistic differences between silo production obtained at Mikado hybrid (56 t.he^{-1}) and Janett hybrid, that have obtained a production of 52 t.he^{-1}.

In which regards PR34Y02 hybrid, it have obtained a lower production than Mikado hybrid, but higher than Janett hybrid, and the production differences are not assured from statistical point of view.

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