THE PRODUCTIVITY STUDY OF ITEMS SORGHUM (SORGHUM B. VAR. SACCHARATUM)

D. COCLEA, Simona NIȚĂ, Ioana Maria MATEAȘ
**** Banat's University of Agricultural Sciences and ''King Michael I of Romania '' Veterinary Medicina – Faculty of Agriculture***

Email: mateasioanamaria@yahoo.com

Abstract: *History shows that cereals have always maintained their significance, along the development of human society and to this day. In addition, however, one can see a close link between grain production and progress of civilization. Sorghum is a very old culture, known in India for over 2000 years, cultivated for: beans, brooms, rich in sugar syrup, animal feed or fodder crop as green. Climate Change to heating and arid during 2001-2050 in the Balkans, which is located and Romania, requires a reconsideration of sorghum as: cereal food (beans composite flour used in the formula for baking gluten and gluten-free, fresh juice, extracted of strains used in the manufacture of syrup, vinegar and other food), fodder (as green mass, hay storage, feed pellets) and crops (sorghum and sorghum mature mellitus for the production of raw materials for energy (liquid, solid, gas, electricity, heat), chemical (stationery and textile pulp, plastics), building materials and craft industry (of household and industrial brushes, brooms, blended. Sorghum is the second cereal after maize commercially exploiting the heterosis effect in the agricultural farm, which increased the average production per hectare. is the first grain sorghum that has been fully sequenced genome (2006), which will give rhythms in November progress in improving the species in the coming years. sorghum grains used directly in the form of flour feeding people in some parts of Africa, India, China, Middle East and Egypt. In industry is used in the manufacture of starch, alcohol and beer, mixed with grains of barley. The sweet sorghum juice is extracted a sweet, rich and varied sucrose vegetable substances energy use. In many parts of the world sorghum was traditionally used in various foods such as porridge , unleavened bread, cookies, cakes, couscous and various soft drinks and alcoholic. sorghum has unique properties that make it very suitable for food use. Some varieties of sorghum are rich in antioxidants and all varieties of sorghum are without gluten, an alternative attractive for those suffering from wheat allergy. Modern science in food and nutrition, attaches great importance to the role of nutrition in prevention of onset. Special attention is given to the development of food products for people with increased sensitivity to certain foods. The culture of sorghum, using far fewer pesticides than other crops (wheat and corn). It also should not neglect the fact that sorghum, sorghum particularly diabetes, contribute significantly to reduce air pollution ¬ bad. In different literature, shows that one hectare of sweet sorghum absorbs from the atmosphere each year between 40 and 55 tonnes of carbon dioxide (CO2), while other crops, eg cereals, only 3 to 10 tons per year CO2/ha . It should be noted that the sorghum plant is not lost anything after processing.Experience has been located in specific climatic conditions Răcasdia commune, Caras Severin, on a brown ground, I-mezogleizat moderate slope deposits formed from decomposition and alteration of basic metamorphic rocks. Experience is bifactorial type, so that the annual Repeat the cycle terminates the experimental field we have experience in first year, second year and third year. The biological material used F135ST and Primsilo were hybrids. ST F135 hybrid obtained from INCDA Fundulea, and hybrid seed is certificate Primsilo of French origin. Mineral fertilizers applied sorghum crop mellitus, increased production of strains of which was obtained raw juice production. Change in production of sweet sorghum stalks raw juice (Sorghum b. var. Saccharatum) vary depending on hybrid and the influence of fertilization.*

Keywords: sweet sorghum, green mass, hybrid, fertilization.

INTRODUCTION

The sorghum crop is sorghum diabetes category, considered to be most productive in terms of ind obtain juice and spirits food biomass for biofuels. From sweet sorghum juice is extracted a sweet, rich and varied uses sucrose fitomasă energy. In China and Africa, the flower and leaf sheaths to obtain a dye used to dye fabrics, wool and hides. In many parts of the world, sorghum has been used traditionally for various foodstuffs, such as porridge, unleavened bread, cookies, cakes, couscous and various soft drinks and alcoholic. Traditional cooking of sorghum is plentiful, cooked sorghum grain is one of the simplest products. Whole grains can be presented as ground flour or shelled before grinding, which then are used in different traditional foods. The cuisine of the southern United States sorghum syrup is used as a sweet spice, usually biscuits, corn bread, pancakes, cereals or beans. The sweet sorghum juice fertilization seeks to quality, which is why it is recommended for food purposes, growing on fertile soils. Favorable moisture conditions, sorghum react favorable to nitrogen fertilization both in terms of the yield and protein content in dry areas, have positive effect and phosphorus. Doses practiced today in the world varies, depending on experimental conditions. Mass production of raw juice green sorghum stalks, is very influenced by the technology used (especially fertilizer) that determines the quality and increase production.

MATERIAL AND METHOD

Experience has been placed in specific climatic conditions Caras Severin Răcasdia village. Experimental field was located on a brown soil type, I-mezogleizat moderate slope deposits formed from decomposition and alteration of basic metamorphic rocks. Experience is bifactorial type, with annual repetition. F135ST and Primsilo hybrids were used in the experience.

FACTOR A: variety (hybrid)
- A1: F135 ST Fundulea
- A2: Primsilo

Factor B = B, fertilization system
- B1 = unfertilized (N0P0K0)
- B2 = N80P80K80,
- B3 = N160P80K80,
- B4 = N240P80K80,
- B5 = N 160 P 160 160K

RESULTS AND DISCUSSION

Table 1 presents the results of green mass yield under the influence of the two factors under study (hybrid and level of fertilization) , obtained from sweet sorghum in the experimental field at Racasdia.

The analysis results highlight some items that need to be taken to the cultivation of sorghum.

1 . Choosing a hybrid place to ensure the largest possible mass production plant and from this point of view the hybrid F135ST meet , he providing the highest yield of green mass 20.73 t / ha .

2 . You can obtain high yields of green mass in sweet sorghum only by fertilization.

From the results obtained in 2012 shows that the balance reports as agro NPK (80:80:80) or (160:160:160) 1:1:1 and especially those in which the nitrogen is in a ratio of 2:1:1 or 3:1 1 , leading to increased production helping to increase the profitability of sorghum culture especially when it is grown for the production of bioethanol and biogas.

If we look at the production of green mass resulting from the interaction of the two factors , hybrid agrofond is found that the highest yields are obtained in the combinations : F135ST on agro N240P80K80 where mass production cut is 27.33 t / ha , followed by hybrid version F135ST on agro N160P160K160 production of 24.63 t / ha .

Table 1

Green mass yields obtained under the influence of fertilization and hybrid seed in sweet sorghum

Factor A Hibrid	Factor B- Fertilization					A - Media Factor			
						Yield (kg/ha)			Yield (kg/ha)
	N0P0K0	N80P80K80	N160P80K80	N240P80K80	N160P160K160				
PRIMSILO	8,14	14,89	18,26	19,53	18,01	15,76	100	-	
FUNDULEA F135ST	12,30	18,25	21,17	27,33	24,63	20,73	132	4,97	xxx

DL5%-1,05t/ha; DL1%-2,19t/ha; DL0,1%-3,53t/ha.

B - Media Factor

Recolta (t/ha)	10,22	16,57	19,71	23,43	21,32
%	100	162	193	229	208
Diferenţa (t/ha)	-	6,35	9,49	13,21	11,1
Semnificaţia		xxx	xxx	xxx	xxx

Dl 5% = 1,23t/ha; Dl 1% = 2,42t/ha; Dl 0,1% = 3,32 t/ha;

CONCLUSIONS

Results of research conducted on sorghum in terms of Caras Severin Racasdia allow us to draw some conclusions regarding the influence of hybrids and fertilization on yield of green mass and raw juice.

In the experimental field from Caras-Severin Racasdia have good results in all productions made from sorghum.

Climatic conditions during sowing and harvesting were largely a favorable influence on the sorghum harvest sugar levels.

In case sorghum from measurements of field and laboratory found that the most valuable hybrid F135ST that the highest yields of green mass.

The soil on which were placed the experiences they provide nutritional support for proper growth and development of sorghum plants.

BIBLIOGRAPHY

1. ANTOHI IOAN, BENCZIK IOAN,BORCEAN IOAN,BUTNARU GALLIA,CAHIŢĂ COSMA DORINACIUCANU ION,DRĂGULESCU AUREL,DRÂNCEANU DAN,GHIDĂU SORIN,GOIAN MIRCEA,LĂZUREANU AUREL,MATU SORIN,NEGUŢ GHEORGHE,ONU NICOLAE,OTIMAN PĂUN,PAPURĂ DUMITRU,POP AUGUSTIN,ROKOST TICAN LENUŢA,ROOSZ SORINA DANA,RUSU IOAN,*TABĂRĂ*

VALERIU,TABLE LIVIU,ZAPIRTAN MARIA – „SORGUL ZAHARAT"- monografie,1991, USAB Timişoara, editura Helicon, Timişoara,

2. DRĂGHICI IULIAN,GHEORGHE DUMITRU,MĂRINICĂ GHEORGHE,ŞEARPE DOINA,ANTOHE IOAN

„ TEHNOLOGIA DE CULTIVARE A SORGULUI HIBRID PENTRU BOABE PE SOLURILE NISIPOASE IRIGATE", Staţiunea de Cercetare-Dezvoltare pentru Cultura Plantelor pe Nisipuri Dăbuleni, pag 2-5, 2010

3. GHEORGHE BILTEANU- Fitotehnie, vol 1, editura Ceres ,2003,pag.343-357

4. ION ANTOHE "REALIZĂRI ÎN AMELIOREAREA SORGULUI LA FUNDULEA" AN. I.N.C.D.A. FUNDULEA, VOL. LXXV, 2007, VOLUM JUBILIAR) pag. 137 la 145

5. MARIA TOADER, GHEORGHE VALENTIN ROMAN,„Importanţa speciilor de cereale şi pseudocereale pentru agricultură şi alimentaţia umană".

6. MUNTEANU MARCEL - LIVIU ; VALERIU TABĂRĂ **„**Cercetări privind potenţialul producţiei de sorg zaharat şi pentru boabe**"** Teză de Doctorat - Timişoara 2013.