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ON FARM TRIALS FOR EVALUATION OF FORAGE MAIZE AFRICAN TALL CULTIVAR WITH HIGH YIELDING VARIETIES OF MAIZE

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ABSTRACT

Field trials were conducted in Adopted villages Mohanpur and Kalapur in Kharif 2004 and 2010 in Khata and Bhandsar villages of Rithora town (Veterinary Health Camp Station) area in Bareilly District of UP. African tall variety of forage maize was grown for comparative evaluation for fodder production. High yielding varieties namely Vijay Composite, Sweta, Pragati, Kanchan, Amar and Surya were grown for green forage during March to July (Kharif season) in the adopted villages. Agronomic practices and inputs were provided by IVRI, Izatnagar, Extension Education Division under Institute Project "Fodder Production System" in Bareilly district. It is to be recorded that crops were harvested at 52 to 68 DAS as per farmers requirement. Crops were used for green fodder for 15 days for animal feeding. Vijay Composite produced 468.3q/ha green fodder, Sweta 455.1 q/ha, Pragati 415.6 q/ha, Kanchan 412.4 q/ha, Amar 407.2 q/ha, and Surya 402.5 q/ha palatable and nutrition fodder for milch animals when crops were 55-65, 55-67, 57-67, 58-68, 52-65, 52-62 and 52-67, respectively. African tall produced maximum green fodder 785.7 q/ha while harvested at 53-68 days after sowing (DAS).

Key words : Maize, variety, forage, yield, adopted.

Maize is one of the most important kharif crop of Asian Countries, including India. Maize is also one of the best cereal fodder crop grown during Summer, rainy and/or early winter season. It requires warm and temperature climate and grows well on alluvial soils. It can be grown throughout the year with irrigation facility. African tall, Vijay composite, Moti Composite, Ganga-5 and Jawahar are some varieties. Maintain a seed rate of 40 kg/ha and dibble one seed to a spacing of 15 cm between the seeds in the row which are 30 percent.Corn and maize are both terms that reference the same cereal grain. Corn is primarily used in the North America where as maize is used in the British English vernacular. Maize, referred as Queen of cereals is the third most important cereal crop after rice and wheat in India. Maize serves as both human food as well as animal feed and for. Productivity of maize can be increased by proper nutrient management practices. Maize is a zinc responsive crop and found deficient in soils. Zinc as an essential micronutrient that has significant role in basic plant metabolic processes and enhances the growth, yield and quality of maize by stimulating chlorophyll production, photosynthetic activity, nutrient uptake and protein biosynthesis. The zinc application to maize crop either by seed treatment, soil application or by foliar spray byusing inorganic have shown significant impact on growth, yield, nutrient uptake, quality and economics from investigations of eminent researchers with increasing trend in productivity. Application of zinc at 20-25 kg ha-1 to maize gave maximum grain yield (7500 kg ha^{-1}) and benefit cost ratio (2.4) in maize Soybean (Glycine max) is presently grown almost exclusively as a protein and oil seed crop in the USA, but it was provisionally a popular summer annual soft legume. The forage yield of potential of soybean can be as high as 5 to 10 tons per acre. Yield of soybean can be maximized by planting early. Like other forage legumes, soybean forage has many valuable traits as fodder, soybean leaves and stems can be grazed, ensiled or dried to machinery. The foliage in veg palatable to cattle and has a high nutritive value and good digestibility (Kolvisto, 2006). Soybean was initially used as forage crop when introduced into the United States in the 1980s. Cluster beans (Guar) (Cyamopsis tetragonoloba) is an errect, bushy annual herbaceous length upto 3 meters high with tetra trifoliate leaves upto 10 cm long. Which is very much suitable for mixed cropping to enhance leguminous part of fodder. Maize produces rich nutrition green fodder which is a good source of carbohydrates. The green fodder is particularly suitable for silage making. It contains 8-10 % protein and 60% total digestible nutrients. Maize grains contain trypsin inhibitor.

MATERIALS AND METHODS

Field trials were conducted in Adopted villages Mohanpur and Kalapur in Kharif 2004 and 2010 in Khata and Bhandsar villages of Rithora town (Veterinary Health Camp Station) area in Bareilly

Table-1 : Evaluation of Forage Maize African Tall Cultivar with High Yielding Varieties of Maize (2003-04).

Variety	Forage yield q/ha	Harvesting Days	Plant Height	Grain Yield q/ha
African Tall	785.6	55-65	223.6	11.2
Vijay composite	468.4	57-67	175.7	16.9
Sweta	455.3	57-67	176.6	19.2
Pragati	415.9	58-68	173.3	20.3
Kanchan	417.4	55-65	174.3	18.3
Amar	407.2	55-65	171.7	17.4
Surya	402.5	55-65	170.8	17.1
CD at 0.05%	1.9	7.5	6.3	4.5

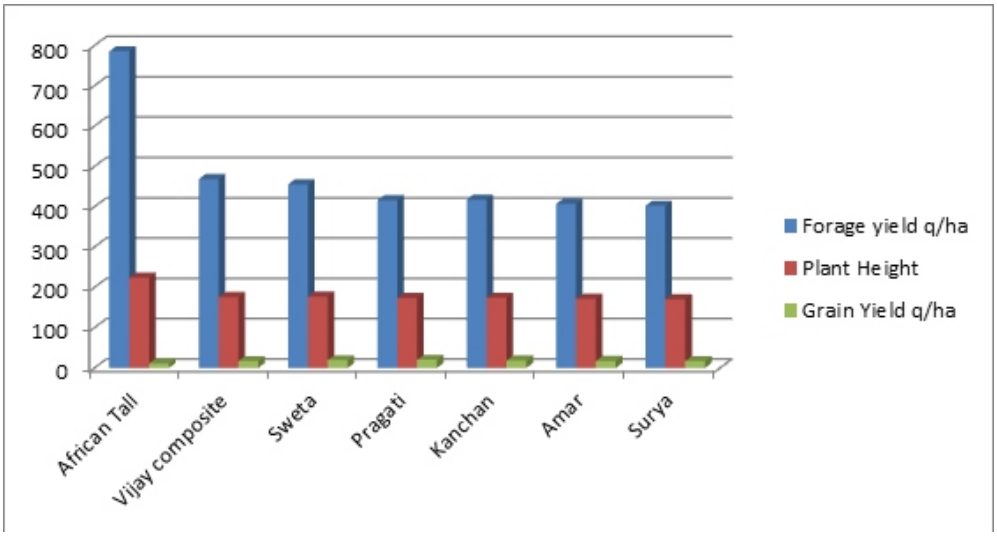

Fig.-1 : Evaluation of Forage Maize African Tall Cultivar with High Yielding Varieties of Maize (2003-04).

Table-2 : Evaluation of Forage Maize African Tall Cultivar with High Yielding Varieties of Maize (2010-11).

Variety	Forage yield q/ha	Harvesting Days	Plant Height	Grain Yield
African Tall	905.6	55-65	228.6	18.7
Vijay composite	585.3	57-67	182.7	21.6
Sweta	620.5	57-67	183.6	23.2
Pragati	528.7	58-68	178.3	24.4
Kanchan	515.6	55-65	175.6	19.6
Amar	505.4	55-65	174.9	20.5
Surya	501.3	55-65	174.5	20.2
CD at 0.05%	14.5	7.5	6.3	3.0

District of UP. African tall variety of forage maize was grown for comparative evaluation for fodder production. High yielding varieties namely Vijay Composite, Sweta, Pragati, Kanchan, Amar and Surya were grown for green forage during March to July (Kharif season) in the adopted villages. Agronomic practices and inputs were provided by IVRI, Izatnagar, Extension Education Division under Institute Project "Fodder Production System" in Bareilly district. Treatment : T1- Africal Tall variety, T2- Vijaycomposite maize variety, T3- Sweta maize, T4- Pragati Maize Cultivar were grown 2003-04 and 2010-11 under project in villages or in adopted project villages surrouding Rithora. Crops were harvested at growing stage from 55 to 68 days, farmers used trial crop as their livestock stall feeding. Crops were trial with all agronomic practices as on were collect trials were conducted as per the requirements of farmers. Trials were conducted in RBD experimental design with 3 replications. The plot size was according to the availability of the farmers.

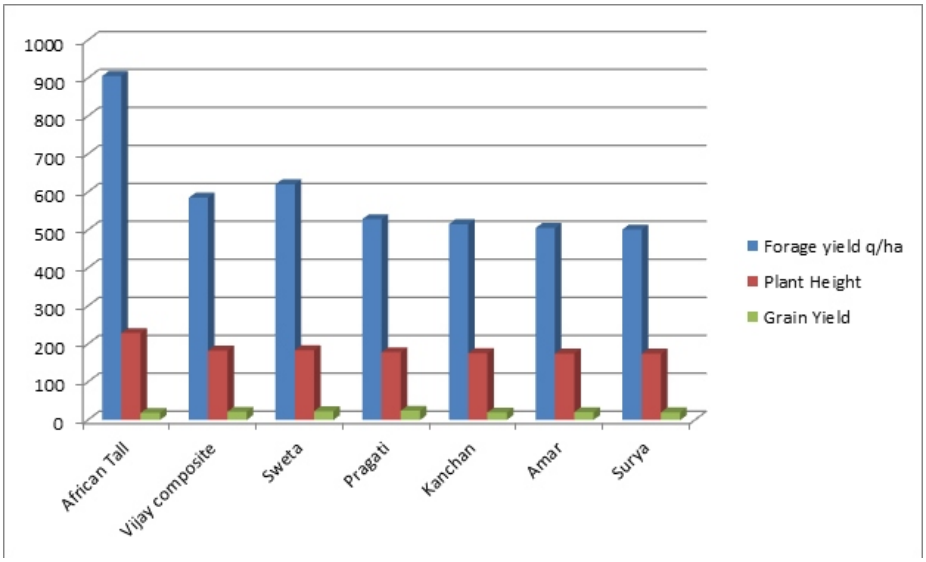

Fig.-2 : Evaluation of Forage Maize African Tall Cultivar with High Yielding Varieties of Maize (2010-11).

RESULTS AND DISCUSSION

Data shows that seed yield and fodder yield were improved in 2010-11 over the 2003-04. The reason may be awareness of the packages of the practices by the farmers regarding forage maize production technology. The variety produced maximum green fodder 785.6 q/ha and followed by Vijay composite 468.4q/ha. However the grain yield was found highest in Pragati (20.3 q/ha) followed by Sweta (19.2 q/ha).

The yield of African tall was higher in 2010-11 (905.6 q/ha) and seed yield of was also higher of Pragati (24.4 q/ha) over the 2003-04. The yield of 2010-11 were shows that the adaptability of maize crop and soiled fertility and productivity were better than 2003-04 (Table- 2 and Fig.-2).

CONCLUSION

African tall maize proved higher forage yielder maize variety followed by Sweta and followed by Vijay composite. However, grain yield produced by Pragati was maximum followed by Sweta. The yields were improved 2010-11 over the 2003-04 in all the varieties. The crops were adopted by the farmers for fodder and grain as a dual purpose to make their farming more profitable. Kanchan, Amar and Surya is lower than the Pragati and other varieties.

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