

## **Performance of dual purpose maize line for grain, green fodder, stover yield under the semi-arid condition**

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### **Introduction**

Maize is the third most important cereal crop of the world and so also in India (Nadagoud *et al.*, 2012). The diverse use of maize is rapidly increasing the demand of the crop and is replacing crops such as rice, sorghum, legumes and wheat in some areas (CIMMYT, 2013). Maize is largely treated as a single-purpose crop grown for grain, ignoring its potential for stover. Utilization of maize as dual purpose can meet the demand of both the poultry industry for grain and good quality stover for cattle feed. Maize stover the part of the crop left over after grain harvest, provides a promising option for feeding livestock in India (CIMMYT, 2013). The performance of line may not be same under different environments or years. But, a line may be said to be good if its performance is consistence. The newer maize lines/ hybrids have higher buffering capacity as well as disease tolerance than the older one. Keeping this in view, the present investigation was carried out to evaluate the maize lines for dual purpose.

### **Materials and Methods**

Nine promising maize line with 2 national forage maize checks (African Tall [Ck-1] and J-1006 [Ck-2]) were evaluated in randomized block design with 3 replications from 2011 to 2014. The experiment was conducted at Indian Grassland and Fodder Research Institute, Jhansi, India. Each line were sown in six rows of 4m long. Observations were recorded in each lines for 9 characters including the green fodder yield, grain yield and stover yield. The green fodder yield data were taken in 4 m<sup>2</sup> area. All the data were analyzed for analysis of variance as method suggested by Gomez and Gomez (1984).

### **Results and Discussion**

Analysis of variance showed significant differences among the lines for all the characters. Considering the yield parameters, the lines IGMF-1 showed highest grain yield and stover yield in the years 2011 and 2013 (Figs. 2 & 3) but had the longest maturity days, over the years. In the year 2012, line IGMF-7 showed highest grain yield and stover yield with a medium maturity days, whereas, in the year 2014, IGMF-1 and IGMF-5 showed highest grain yield and stover yield, IGMF-5 was an early maturing line over the years. The highest green fodder yield was produced by IGMF-3 & 4 in the year 2011 and 2014; IGMF-4 & 7 in the year 2012 and 2013 (Fig.1). The pooled analysis indicated that the lines IGMF-4 and IGMF-3 for green fodder yield, IGMF-1, IGMF-2, IGMF-7 for grain yield and IGMF-4 and IGMF-1 for stover yield, were the highest producers over the years. Among the early maturing lines IGMF-2 and IGMF-5 were to the best among all. The LSD comparison indicated that among early maturing lines IGMF-2 and 5 have non-significant difference for grain yield and stover yield, but, has significant differences for green fodder yield.

### **Conclusion**

The line IGMF-2 may be used as dual purpose for early maturity group. IGMF-7 for medium maturity group and IGMF-1 for long maturity group may be utilized for cultivation and further breeding programme.

### **References**

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