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# Production potential of different kharif fodder crops under scarce rainfall zone of Andhra Pradesh

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**Abstract**
Field experiment was conducted during kharif season of 2019-20 to evaluate the performance of fodder crops/varieties. The treatments consist of 6 fodder crops/varieties i.e. Co.Fs.29 jowar variety, SSG-898 jowar variety, bajra, sunhemp, horsegram and pillipesara. Highest values of growth parameters and forage yield were obtained from Co.Fs.29 jowar variety. Pillipesara was significantly recorded the lowest values of growth and yield parameters.

**Keywords:** *Kharif* fodders, Co.Fs.29 jowar variety, scarce rainfall zone of Andhra Pradesh

### Introduction
India having large number of livestock population in the world and feed requirement mainly met from dry crop residues and grazing. Land allocation to cultivation of green fodder crop is limited and hardely ever exceeded 5% of gross cropped area (GOI, 2009) [2]. Birthal and Jha (2005) [1] have found feed scarcity as the main limiting factor to improving livestock productivity. In this concern production of high yielding fodder varieties is very much essential for increasing productivity per unit area and unit time.
The research carried out in Proddatur region of Kadapa district which comes under scarce rainfall zone of Andhra Pradesh. Average annual rainfall of this region is 700 mm. Majority of soils are black cotton soils.
Fodder crops are highly divergent as they are area and season specific. In different parts of country various fodder varieties were developed which are highly location specific. Intensify forage production through improved high yielding varieties is only the solution to bridge the gap between demand and supply. This investigation was carried out to find a high yielding fodder variety in scarce rainfall region of Andhra Pradesh.

### Materials and Methods
An experiment on production potential of different kharif fodder crops i.e. CO.FS.29 variety of jowar, SSG-898 of jowar, bajra, sunhemp, horsegram and pillipesara under scarce rainfall zone of Andhra Pradesh was carried out at the Livestock Farm Complex, Proddatur during kharif season of 2019-20. The experiment was laid out in a randomised block design with three replications. The observations recorded are plant height, Leaf area index and fodder yield as per standard process. The data was statistically analysed by using SPSS for its significance.

### Results and Discussion
#### Plant height
Plant height of different fodders measured at 30,60 and 90 days after sowing. The data revealed that significantly affected the plant height by different genotypes of crops. The tallest plants were produced in jowar CO.FS.29 variety at all stages. Which was significantly higher over jowar -898 variety, bajra, sunhemp and horsegram. While shortest plants was recorded in pillipesara in all stages of crop growth. The main cause of those differences in plant height are due to differences in genetic make up of genotypes of different crops. Significant differences among the varieties regarded plant height also been reported by Kumar *et al*. (2018) [4] and Gangaiah and Kundu (2018) [3].

#### Leaf Area Index
LAI was found to be significantly influenced by difference crops at 30,60 and 90 days after sowing. The highest leaf area index was associated with CO.FS.29 variety of Jowar which was

significantly superior to rest of the crops/varieties. The lowest LAI recorded in the pillipesara fodder crop.

**Green fodder yield**

Green fodder yield differed markedly by different kharif fodder crops. Significantly higher fodder yield was recorded in CO.FS.29 Jowar variety over other crops. The lowest green fodder yield was noticed in the pillipesara fodder crop. similar results have also been reported by Gangaiah (2004) [5], Singh *et al*. (2014) [6].

**Table 1:** Biometric observations of different fodder crops

| Parameter | Days | Fodder Variety | | | | | | SEM | F×D | *P* Value | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cereal | | | Legume | | | | | | |
| | | Jowar (898) | Bajra | Jowar (CO FS-29) | Sunhemp | Horse gram | Pillipesara | | | C | L |
| Plant Height (Cms) | 30 d | 65.67$^{b}$ | 63.67$^{a}$ | 69.73$^{c}$ | 22.37$^{c}$ | 8.47$^{b}$ | 7.17$^{a}$ | 1.27 | <0.01 | ** | ** |
| | 60 d | 195.57$^{b}$ | 163.17$^{a}$ | 199.73$^{b}$ | 113.77$^{b}$ | 40.97$^{a}$ | 35.83$^{a}$ | 2.54 | <0.01 | ** | ** |
| | 90 d | 195.87$^{b}$ | 186.00$^{a}$ | 238.87$^{c}$ | 102.10$^{c}$ | 47.30$^{b}$ | 42.50$^{a}$ | 2.42 | <0.01 | ** | ** |
| Leaf Area Index | 30 d | 0.069$^{b}$ | 0.040$^{a}$ | 0.084$^{c}$ | 0.072$^{c}$ | 0.057$^{b}$ | 0.034$^{a}$ | 0.01 | <0.01 | ** | ** |
| | 60 d | 0.120$^{a}$ | 0.076$^{a}$ | 0.412$^{b}$ | 0.112$^{c}$ | 0.022$^{a}$ | 0.074$^{b}$ | 0.01 | <0.01 | ** | ** |
| | 90 d | 0.136$^{a}$ | 0.080$^{a}$ | 0.446$^{b}$ | 0.153$^{c}$ | 0.021$^{a}$ | 0.087$^{b}$ | 0.01 | <0.01 | ** | ** |
| Forage Yield (Kg/hectare) | - | 40.66$^{b}$ | 26.00$^{a}$ | 47.83$^{c}$ | 27.34$^{c}$ | 23.73$^{b}$ | 21.48$^{a}$ | 0.75 | - | ** | ** |

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