

## Registration of *Guduru Tef* [*Eragrostis tef* (Zucc.) Trotter] Variety

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**Abstract:** *Guduru* is the common name for *teff* [*Eragrostis tef* (Zucc.) Trotter] with the pedigree name of DZ-10-1880. It out-yielded the standard check, *Dukem*, across all on-stations. In on-farm trials, *Guduru* maintained its superiority over the standard check, *Dukem* with 13% grain yield advantage. *Guduru* has wide yield adaptability in its grain yield performance. It has good traits such as uniform agronomic characters, high biomass, and thick stalk and with low lodging problem. It also has very white seeds and high market value as well as, disease resistance.

### 1. Agronomic and Morphological Characteristics

*Guduru* is a white seeded variety with a white flower that was evaluated for its agronomic traits across test locations and years. It has thick stalk erect growth habit but bending at maturity. *Guduru* (6.5 tons/ha) has higher mean biomass than that of the standard check, *Dukem* (6.1 tons/ha). This high biomass of *Guduru* was mainly attributed to its high tillering habit and better plant height than that of *Dukem*. On average, *Guduru* heads in 70 days and matures in 132 days after emergence, and the standard check, *Dukem* is earlier than *Guduru* with 4 days for heading and 10 days for maturity. On mean basis, *Guduru* had 115 cm plant height, 46 cm panicle length, a seed size of 0.3 g per 100 seeds and with a fairly loose panicle. The standard check, *Dukem* had plant height of 91 cm. Summary of agronomic and morphological characters of *Guduru* are given in Table 1.

### 2. Yield Performance

*Guduru* was tested at early breeding stages from 1999 to 2001 at Arjo, Gedo and Shambu and it out yielded the standard check, *Dukem* throughout the trials. In multi-location trials, where 14 varieties were tested for two years (2002 and 2003) at Arjo, Gedo, Gute, and Shambu, the mean grain yield of *Guduru* was 1.8 tons/ha with 12% grain yield advantage over the standard check, *Dukem*. In on-farm trials, *Guduru* maintained its superiority over the

standard check, with the mean yield of 1.7 tons/ha compared to 1.5 tons/ha for *Dukem*.

### 3. Disease Reaction

*Guduru* and *Dukem* were resistant for leaf rust (*Uromyces eragrostidis* Tracy) and head smudge (*Helmentosporium miyakei* Nisikado) diseases.

### 4. Stability Performance

Yield stability in fourteen *teff* varieties was studied for two years across four locations. Stability parameters were calculated by the method of Eberhart and Russel (1966). The result showed that *Guduru* had unity regression coefficient associated with high mean grain yield implying that it has good general adaptability.

### 5. Conclusions

The *teff* variety, *Guduru* out-yielded the standard check, *Dukem* and local check. It had stable yield across years and locations. *Guduru* has high biomass, which is a very important trait for animal feed. It also has very white seed compared to the standard check, *Dukem*, and has high market value. It is, therefore, released for the highlands of Arjo, Gedo, Gute and Shambu in Western Ethiopia.

### 6. Reference

Eberhart, S.A. and Russell, W.A. 1966. Stability parameters for comparing varieties. *Crop Science* 6: 36-40.

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Table 1. Agronomic and morphological characteristics of *teff*, *Guduru* (DZ-10-1880).

Adaptation area:	
Altitude (masl)	1850 - 2500
Rainfall (mm)	1000 - 1200
Fertilizer rate; DAP (kg/ha)	100
Planting date	July
Seed rate (kg/ha)	25 – 30
Days to heading	70
Days to maturity	132
Panicle length (cm)	46
Plant height (cm)	115
Growth habit	Erect and slight bending at maturity
Flower color	White
Seed color	White
100 seed weight (g)	0.3
Crop pest reaction	Resistant to major diseases and pests
Leaf rust	2
Head smudge	2
Yield (ton/ha):	
Research field	1.5-2.3
Farmer field	1.4-2.0
Year of release	2006