# Sorghum Variety MRS 13 (SDSV 1513)

- **Open-pollinated pure line**
- **Dwarf-semi-dwarf (1.3-1.4 m)**
- **Matures in 110-125 days**
- **Medium-sized red grains**
- **Large, elliptic, semicompact panicle**
- **Recommended for dry Middleveld and Lowveld regions of Swaziland**

**ICRISAT**
**Plant Material Description no. 54**

International Crops Research Institute for the Semi-Arid Tropics
Patancheru 502 324, Andhra Pradesh, India

**1995**

## Purpose of description

MRS 13 is a high-yielding, medium-duration sorghum variety recommended for general cultivation in Swaziland, especially in the dry Middleveld (350-500 m altitude) and Lowveld (below 350 m) of southern Swaziland. It is one of the first two improved varieties released by the Government of Swaziland (Swaziland Variety Release Committee) in March 1990. Commercial seed of this variety is available from Swazi-American (Etsala PH1) Seed, Mbabane, Swaziland.

## Origin and development

MRS 13 is originally a kafir germplasm line identified as IS 2391. From ICRISAT Asia Center (IAC), India, it was re-introduced into the southern Africa region by the Southern African Development Community (SADC)/ICRISAT Sorghum and Millet Improvement Project (SMIP), and indexed as SDS 1513.

For two seasons, the line was observed together with other lines in the observation breeding nurseries at Malkerns Research Station in Swaziland. Individual head-row selections were made from the line bulks. Seed was increased during the 1985 and 1986 off-seasons, and evaluated in a preliminary yield trial in 1985/86, in an advanced yield trial in 1986/87, and in multilocational national elite variety trials in 1987/88 and 1988/89. In winter 1988, single-plant progenies from the selected lines were sown for uniqueness purification tests and certification by the Swaziland Seed Quality Control authorities and the Swaziland Seed Multiplication Project. They were then bulked separately to comprise MRS 13. The varieties were finally evaluated in 1989/90-1991/92 under both on-station and on-farm conditions in six agroecological environments.

## Synonyms

SDS 1513, SDSV 1513, MRS 13

## Performance

MRS 13 had the highest grain yield among three test varieties, and second highest compared with those of the hybrid controls PNR 8311 and DC 99 across three locations in 2 years (1985/86 and 1986/87) and six environments. On average, MRS 13 yielded 2.5 t $ha^{-1}$ compared with the local variety Ntuli Red (1.7 t $ha^{-1}$) and the commercial hybrids DC 99 (4.6 t $ha^{-1}$) and PNR 8311 (2.6 t $ha^{-1}$) (Table 1). In a second set of trials (1987/88 and 1988/89), MRS 13 had the highest overall grain yield among five entries tested in a different set of six environments. The mean yield of this variety was 3.2 t $ha^{-1}$ compared with the local variety Ntuli Red (1.6 t $ha^{-1}$), and the previously highest-yielding commercial variety DC 99 (2.9 t $ha^{-1}$) (Table 2). MRS 13 outyielded Ntuli Red by 80% in the first set of six environments and by 100% in the second set.

## Plant characteristics

MRS 13 is a medium-duration (110-125 days) pure line variety. The plant is purple, produces one or more tillers, and grows to a height of 1.3-1.4 m. Its leaves are medium-sized (60-70 cm long and 8-10 cm wide). The panicle is fairly large (26-28 cm), semicompact, and elliptic. MRS 13 has no major disease problems.

## Seed characteristics

MRS 13 has medium-sized (100-seed mass 2.4 g), bright red grains with a thin pericarp. The grains have no testa and do not contain tannin. They are hard (3.7 on a 1-5 scale) with white endosperm and good milling (flour) yield of 82%. They are also suitable for malting, but are highly recommended for milling.

**Table 1. Mean grain yield (t ha$^{-1}$) of MRS 13 and two varieties in on-station national trials at three locations, Swaziland, 1985/86 and 1986/87.**

| | | Locations | | | |
|---|---|---|---|---|---|
| Cultivar | Type | Malkerns | Luve | Nhlan-gano | Mean |
| MRS 13 | Open pollinated | 2.3 | 1.6 | 3.6 | 2.5 |
| SDS 1503 | Open pollinated | 1.8 | 0.9 | 2.7 | 1.8 |
| ICSV 112 | Open pollinated | 2.9 | 1.2 | 2.6 | 2.3 |
| Controls | | | | | |
| Ntuli Red | Local variety | 1.8 | 1.2 | 2.2 | 1.7 |
| PNR 8311 | Commercial hybrid | 3.3 | 2.1 | 2.4 | 2.6 |
| DC 99 | Commercial hybrid | 5.1 | 1.9 | 3.5 | 4.6 |

**Table 2. Mean grain yield (t ha$^{-1}$) of MRS 13 and two varieties in on-station national trials at three locations, Swaziland, 1987/88 and 1988/89.**

| | | Locations | | | |
|---|---|---|---|---|---|
| Cultivar | Type | Malkerns | Mang-congco | Big Bend | Mean |
| MRS 13 | Open pollinated | 3.8 | 4.8 | 1.0 | 3.2 |
| SDS 1503 | Open pollinated | 3.7 | 2.5 | 0.6 | 2.3 |
| ICSV 112 | Open pollinated | 3.4 | 2.8 | 1.7 | 2.8 |
| Controls | | | | | |
| Ntuli Red | Local variety | 2.2 | 1.9 | 0.6 | 1.6 |
| PNR 8311 | Commercial hybrid | 3.0 | 3.2 | 1.2 | 2.5 |
| DC 99 | Commercial hybrid | 3.9 | 3.4 | 1.4 | 2.9 |

**ICRISAT**

**Plant Material Descriptions**

**from the**

**International Crops Research Institute for the Semi-Arid Tropics**

Brief descriptions of crop genotypes identified or developed by ICRISAT, including:

- germplasm accessions with important agronomic or resistance attributes;
- breeding materials, both segregating and stabilized, with unique character combinations;
- cultivars that have been released for cultivation.

These descriptions announce the availability of plant material, primarily for the benefit of the Institute's cooperators. Their purpose is to facilitate the identification of cultivars and breeding lines and to promote their wide utilization. Requests for seed should be addressed to the Director General, ICRISAT, or to appropriate seed suppliers. Materials for research are sent by ICRISAT to cooperators and other users free of charge.

ISBN 92-9066-304-9 Order code: PME 054 Printed at ICRISAT Asia Center 252-94