
Sorghum Variety MRS 94 (SDSV 1594)



- Open-pollinated pure line
- Semi-tall (1.6-1.8 m)
- Matures in 125-130 days
- Large, dark red grains
- Long, cylindrical, compact panicle
- Recommended for dry Middleveld and Lowveld regions of Swaziland



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Plant Material Description no. 55

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

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Purpose of description

MRS 94 is a high-yielding ($3\text{-}4\text{ ha}^{-1}$ yield potential), medium-long duration sorghum variety recommended for cultivation in the marginal agroecological areas of Swaziland; especially in the dry Middleveld (350-500 m altitude) and the Lowveld (below 350 m). It consistently outyielded the popular local variety Ntuli Red by 75% on average. It is one of the first two improved varieties released by the Government of Swaziland (Swaziland Variety Release Committee) in March 1990. It is suitable for both malting and brewing. Commercial seed is available from the Swazi-American (Etsala PH1) Seeds, Mbabane, Swaziland.

Origin and development

MRS 94 is originally a kafir germplasm line identified as IS 3693. From ICRISAT Asia Center (IAC), it was re-introduced into the southern African region by the Southern African Development Community (SADQ/ICRISAT Sorghum and Millet Improvement Project (SMTP), and indexed as SDS 1594.

For two seasons, it was observed together with other lines, in 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 1987/88-1988/89. 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 94. The varieties were finally evaluated in 1989/90-1991/92, under both on-station and on-farm conditions in six agroecological environments.

Synonyms

SDS 1594-1, SDSV 1594, MRS 94.

Performance

MRS 94 ranked second highest in grain yield of three test varieties, across three locations, in 2 years: 1985/86 and 1986/87 (six environments). It yielded less than the hybrid controls PNR 8311 and DC 99 in the same environments. On average, MRS 94 yielded 2.3 t ha^{-1} compared with 1.7 t ha^{-1} for the popular farmers' local variety Ntuli Red (Table 1).

In the second set of six environments in 1987/88 and 1988/89, MRS 94 was the third highest grain yielder among all the six entries, including the hybrid controls. Its mean yield was 2.7 t ha^{-1} compared with 1.6 t ha^{-1} for Ntuli Red (Table 2). Across six environments, MRS 94 consistently outyielded Ntuli Red, by 70% in 1985-87, and 80% in 1987-89.

Plant characteristics

MRS 94 is a medium-long duration (125-130 days) pure line variety. The plant is purple, semi-tall (1.6-1.8 m), and has a low tillering ability. It has medium-sized leaves (60-70 cm long and 8-10 cm wide). The panicle is long (30-35 cm), slim, cylindrical, and compact. MRS 94 has no major disease problems.

Seed characteristics

MRS 94 has very large (100-seed mass 4.13 g), dark red grains that have a thick pericarp but no testa. The grains do not contain tannin. They are fairly hard (4.1 on a 1-5 scale), but have a chalky endosperm. The milling yield is fairly good (80%). MRS 94 is recommended for malting and brewing. It is less prone to attack by birds than MRS 13.

Table 1. Mean grain yield ($t\ ha^{-1}$) of MRS 94 and two varieties in on-station trials at three locations, Swaziland, 1985/86-1986/87.

Cultivar	Type	Locations			Mean
		Malkerns	Luve	Nhlangano	
MRS 94	Open pollinated	2.4	1.7	2.7	2.3
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 94 and two other varieties in on-station trials at three locations, Swaziland, 1987/88-1988/89.

Cultivar	Type	Locations			Mean
		Malkerns	Mangcongco	Big Bend	
MRS 94	Open pollinated	3.9	3.2	1.0	2.7
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



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**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.