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# Sorghum Variety Pirira 2 (ICSV 112)

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- Photoperiod-insensitive
- Medium height (1.5-1.8 m)
- Matures in 110-120 days
- Creamy-white, corneous, hard grain, threshing percentage 56.5%
- Recommended for the humid lower Shire Valley of Malawi



**ICRISAT**

**Plant Material Description no. 61**

International Crops Research Institute for the Semi-Arid Tropics  
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## Purpose of description

Pirira 2 is a high-yielding, medium-duration, sorghum variety recommended for general cultivation in Malawi, and specifically for the hot, humid, lower Shire river basin. It was released by the National Cultivar Release Committee of Malawi to replace the soft-grained commercial variety, PN 3.

## Origin and development

Pirira 2 is a pure line developed at ICRISAT Asia Center (IAC) by pedigree selection from a multiple cross involving five parents: IS 12622C, 535, IS 3612C, 2219B, and E 35-1. Pedigree selection in self-pollinated progenies of F<sub>2</sub>, F<sub>3</sub>, F<sub>4</sub>, and F<sub>5</sub> was done progressively at IAC and at two other locations. In 1979, the F<sub>6</sub> bulk was distributed to several locations worldwide for testing. It was also included in ICRISAT multiloational yield trials along with other materials. Pirira 2 outyielded all other varieties, and was then given to collaborating national programs for further testing and adaptation. The national and collaborative trials were conducted by the Malawi national agricultural research system at Kasinthula and Ngabu Research Stations in the Shire Valley of Malawi, and the Southern African Development Community (SADC)/ICRISAT Sorghum and Millet Improvement Program (SMIP), Bulawayo, Zimbabwe from 1984/85-1992/93.

## Synonyms

SPV 475, ICSV 112, SV 1, M 39335

## Performance

Pirira 2 had the highest grain yield among five ICRISAT cultivars and two controls when tested across six environments in 5 years (between 1984/85 and 1992/93), in Malawi. On average, it yielded 2.25 t ha<sup>-1</sup> compared with 1.42 t ha<sup>-1</sup> for the commercial variety PN 3, and 2.29 t ha<sup>-1</sup> for the commercial hybrid DC 75, used as controls in three different environments (Table 1).

In farmers' fields, Pirira 2 was evaluated with three cultivars including two improved varieties (Kuyuma, Seredo), and one farmers' local (Thengalamanga). Across eight locations (F<sub>1</sub>-F<sub>8</sub>), Pirira 2 yielded 2.03 t ha<sup>-1</sup> compared with 1.99 t ha<sup>-1</sup> for the farmers' local variety, and 0.82 t ha<sup>-1</sup> for Kuyuma (Table 2).

## Plant characteristics

Pirira 2 is a medium-duration (110-120 days), photoperiod-insensitive variety with a tan plant and medium-sized leaves. It grows to a medium height of 1.5-1.8 m, and has an elliptic, large, open, well-exserted panicle. It is resistant to most leaf diseases

in the Shire Valley, but is susceptible to shoot fly (*Atherigona soccata*) and stem borer (*Chilo partellus*) attack, if sown late.

## Seed characteristics

Pirira 2 has creamy-white, medium to large grains (100-seed mass 2.9 g) with white, intermediate corneous endosperm and thin pericarp. The grains have no testa. They are medium hard (3.2 on a 1-5 scale) with flour milling yield of 78.10% (lower than Pirira 1, another high-yielding sorghum variety released in Malawi) and 13.3% water absorption. The grain is "sweet", because it does not contain tannin. Its flour is whiter (Agrtron readings 77.7 dry and 58.6 wet) than that of Pirira 1, and is acceptable for food. The grain is harder than that of PN 3 whose grain hardness is 2.5.

**Table 1. Mean grain yield (t ha<sup>-1</sup>) of Pirira 2 and five other sorghum varieties in on-station national advanced trials, Chitedze Research Station, Malawi, 1984/85-1992/93.**

Cultivar	1984/85	1985/86	1988/89	1990/91	1992/93	Mean
Pirira 2	2.69	2.80	1.30	2.23	2.22	2.25
SPV 346	2.86	2.50	1.46	0.52	-	1.84
SPV 472	2.47	1.99	0.71	-	-	1.72
SPV 386	2.12	1.75	1.21	-	-	1.69
SPV 815	1.80	2.78	0.43	-	-	1.67
SPV 245	2.04	1.96	0.50	-	-	1.50
Controls						
PN 3 (open pollinated)	0.99	2.36	0.90	-	-	1.42
DC 75 (hybrid)	-	-	-	0.97	3.61	2.29

**Table 2. Mean grain yield (t ha<sup>-1</sup>) of Pirira 2 and two improved sorghum varieties in on-farm verification trials at eight locations in Malawi, 1992/93.**

Cultivars	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	F <sub>4</sub>	F <sub>5</sub>	F <sub>6</sub>	F <sub>7</sub>	F <sub>8</sub>	Mean
Pirira 2	0.50	1.45	1.54	4.40	-	1.01	3.93	1.40	2.03
Kuyuma	0.35	1.15	0.73	-	-	0.35	-	1.31	0.82
Seredo	-	-	-	-	2.96	-	2.88	0.18	2.01
Control									
Thengalamanga (local variety)	-	0.90	-	-	3.29	-	-	1.80	1.99



**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.