

RELEASE OF FOUR NEW SORGHUM VARIETIES AND FOUR NEW SORGHUM HYBRIDS BY IAR

D.A. Aba, F.A. Showemimo and S.C. Gupta

Four varieties of sorghum (*Sorghum bicolor* (L.) Moench) were developed by the Institute for Agricultural Research (IAR), Samaru and released in 1996 for commercial production in the sahelian and savanna zones of Nigeria. These are SAMSORG 38, SAMSORG 39, SAMSORG 40 and SAMSORG 41. Their pedigrees and descriptions are as follows:

SAMSORG 38: Formerly NR71176 (SN 192-5-1) was obtained from recurrent selection of exotic germplasm pool from International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). SAMSORG 38 is medium in height (1.00-1.80m), matures between 105 and 125 days, stem thickness is 15 to 25mm, leaves are between 75 and 85cm long, panicles are semi-compact. It escapes terminal drought, lodging and it is resistant to most leaf diseases. SAMSORG 38 has stay green character, the grain colour is cream without tanins, yield varies from 2.45 to 4.85 t/ha and suitable for sahelian and savanna zones.

SAMSORG 39: Originally known as NR 71182 (S17), was obtained from recurrent selection of exotic germplasm introduction from ICRISAT. SAMSORG 39 is medium in height (1.00-1.80m), physiologically matures between 105 and 120 days. The stem thickness is 15 to 20mm. Leaves are 75 - 85cm long, panicles are medium-sized and semi-compact. SAMSORG 39 is tolerant to drought, lodging and resistant to most leaf diseases. It has stay green character. Grain colour is cream without tanin. The grain yield is between 2.00 to 4.18 t/ha. SAMSORG 39 is most

suited for sahel and sudan zones of Nigeria.

The variety ICSV 111 now known as SAMSORG 40 was derived from F_4 progeny following pedigree selection in a three-way cross [(SPV 35 x E 35-1 (CS 3541) - 8 -1)] at ICRISAT. This variety was evaluated collaboratively by ICRISAT and IAR in Nigeria. SAMSORG 40 is medium to tall (1.8 - 2.1m) in height, tan colour and matures in 100 to 110 days. It has a juicy stalk, 15 to 20mm thickness. The leaves are 70 - 80 cm long and 7-10 cm wide. The panicles are semi-compact, elliptic, awnless and tough glumes. Root lodging can occur under sandy soils, high fertility, escapes drought and resistant to most leaf diseases. Cream coloured grains, caudatum shape, tanins are absent and food quality is similar to local sorghum.

SAMSORG 40 yields between 2.28 and 4.87 t/ha and suitable for sudanean zone of Nigeria.

SAMSORG 41: This is called ICSV 400, was derived from F_4 progeny following pedigree selection in a three-way cross [(ICSV 112 91S 12611 x SC 108-3)-3-2-7]-8-2-2] at ICRISAT. This variety was evaluated collaboratively by ICRISAT and IAR in Nigeria.

SAMSORG 41 is medium to tall (1.8 - 2.1m) in height and matures in 105 to 115 days. It has a juicy stalk, slightly sweet with a thickness of 18 -25mm, leaves are 70 - 80cm long, 8-11cm wide and semi-erect. Panicles are semi-loose, long and elliptical, awnless with soft glumes. SAMSORG 41 escapes terminal drought, does not lodge and is resistant to most leaf diseases. The variety

has stay green character. Grains are cream coloured, medium size and caudatum in shape. Tanins are absent, malting quality is superior to local and SAMSORG 40. Good food quality, Grain yield is between 2.00 and 5.01 t/ha and suitable for sudanean zone of Nigeria.

All the four varieties were tested in six locations in the sorghum-growing regions of Nigeria and West Africa from 1992 to 1995. They had about 10% grain yield advantage over the standard check variety SAMSORG 3 and local checks. They exhibited good stability throughout the testing period. Breeder seeds of the four varieties will be maintained and distributed by the Cereals Research Programme of the Institute for Agricultural Research, Samaru, Zaria.

NEW SORGHUM HYBRIDS

SAMSORG H-1, SAMSORG H-2, SAMSORG H-3 and SAMSORG H-4 were sorghum hybrids developed and/or evaluated by the Institute for Agricultural Research, Samaru and released in 1996 for the sorghum-growing zones of Nigeria. Their pedigrees and descriptions are as follows:

The hybrid SAMSORG H-1, otherwise known as NSSH 91001 was bred at IAR. This hybrid was developed by crossing a male line ICSA 38 with a restorer line NR 711776. SAMSORG H-1 is medium in height (1.45 to 2.00m), matures in 105 to 120 days, stem thickness is 15 to 25mm, leaves are 75-80cm, long panicles are semi-compact. The hybrid is drought and lodging-tolerant. Resistant to most leaf diseases, has stay green character. Grain colour is cream and tanin-free. Grain yield is between 3.13 and 5.51 t/ha. This hybrid is well adapted to sahel and sudan zones of Nigeria.

SAMSORG H-2 originally known as NSSH 91002 was derived from the cross ICSA 38 x NR 71182 at IAR. SAMSORG H-

2 is of medium height (1.60 -2.00 m), matures physiologically in 110-125 days, stem is 15 to 25mm thick, leaves are 75 to 85cm long, panicles are semi-compact and medium-sized. The hybrid is drought and lodging-tolerant, and it is resistant to major leaf diseases. The hybrid has stay green character. Grain yield is between 3.0 and 5.06 t/ha depending on management. SAMSORG H-2 is well adapted to sahel and sudan zones.

SAMSORG H-3 was bred at ICRISAT, Nigeria by crossing the male sterile line ICSA 38 to the restorer line ICSV 247. This hybrid formerly known as ICSH 89002 NG was evaluated collaboratively by ICRISAT and IAR. The hybrid is medium in height 1.8 to 2.1m, matures in 105 to 115 days, stalk is less juicy with insipid juice, stem thickness is 18 to 25mm, leaves remain green even after maturity, Panicles are loose, elliptic, glumes are soft, leathery, thresh freely without awns. SAMSORG H-3 is tolerant to drought and lodging. It is resistant to most leaf diseases. Grain colour is creamy white, caudatum-shaped and tanin-free. Grain yield is between 4.01 and 5.68 t/ha. SAMSORG H-3 is well adapted to sudanean zone of West Africa.

The hybrid ICSH 89009, now known as SAMSORG H-4 was bred at ICRISAT, Nigeria by crossing the male sterile line ICSA 39 to the restorer line 101 MR 906. This hybrid was evaluated collectively by ICRISAT and IAR. SAMSORG H-4 is medium in height (1.8 and 2.1m), matures in 105 to 115 days. Stalks are less juicy with insipid juice, stem thickness is 18 to 25mm, leaves are 75 to 85 cm long and 8-11cm wide. This hybrid has stay green character. Panicles are semi-loose, cylindrical, glumes are leathery, grains thresh freely and awns are absent. SAMSORG H-4 is drought and lodging - tolerant and resistant to most leaf diseases. Grains are cream-coloured, caudatum-shaped and tanin-free. Grain yield

is between 3.88 and 5.36 t/ha depending on management. The hybrid is suitable for sudanean zone of Nigeria.

The four hybrids were evaluated collaboratively by ICRISAT and IAR in a multilocal trials across 24 environments between 1992 and 1995 in the sorghum-growing zones of Nigeria and West Africa. They exhibited good stability performance throughout the testing period. However, under good management conditions

SAMSORGI H-3 could yield as much as 6.0 t/ha with seed weight of 25 - 28 g/1000 seeds. Breeder's seed of the four hybrids will be maintained and distributed by the Cereals Research Programme of the Institute for Agricultural Research, Samaru, Zaria.

Dis. D.A. Aba and F.A. Showenimo are of the Department of Plant Science, IAR/ABU, Zaria while Dr. S.C. Gupta is with ICRISAT, Kano.