

New Variety Release – Sweetpotato

CIP-1

Origin

CIP-1 was generated through polycross. Its maternal parent was BIS 183 (accession number B0053), one of the clones bred by the Bogor Research Institute for Food Crops (BORIF) in 1990. CIP-1 was selected after several performance tests during the dry and rainy seasons in several locations including Martapura (South Sumatra), Way Tuba (Lampung), Sribawono (Lampung), Bogor (West Java), Lembang (West Java), and Malang (East Java).

Description and performance

CIP-1 is semi-compact plant type (75-150 cm), not twining, and does not have pubescence. The leaves are moderately lobed with 5 leaflets, and the shape of central leaf is semi-elliptic. Abaxial leaf vein pigmentation is mostly purple. Petiole length is short (10-20 cm), and its color is green with purple at both ends. Vine internode length is very short (<3 cm), and its diameter is thin (4-6 mm). Vine is green with purple nodes. Both mature and immature leaf colors are green with purple veins on the upper surface. Overall shape of vine is rather slender with many stems. Storage root shape is round elliptic to long oblong, uniform in size, and good-looking. Storage root arrangement is open cluster. Skin color is cream, and flesh is white.



Culture

CIP-1 is very widely adaptable to several soil types. The best soil for this variety is sandy loam. The optimum harvesting time is 120 days after planting at the lowland, and 150 days for highland (~1,600 m asl). Without fertilizer, the average storage root yield was 12.4 t/ha. The average dry matter content was 33.5 %, and the average starch content was 22.9 %. CIP-1 is moderately resistant to scab, canopy covers most of the soil surface and 1-3 stems of this variety produced flower within a plot of 20 plants.

Farmers in Bogor like to grow this variety because of high yielding capacity and good taste. They named this variety as CIP.

Uses

Considering the dry matter and starch content, and also storage root skin and flesh color, this variety is suitable to grow for dual purpose, table consumption and processing.

CIP-2

Origin

This variety (clone number AB94001.8) was selected from the family AB94001, a cross between KYUSHU 102 as female and KANTO 106 as male parent. The seed family was originally introduced from the National Agriculture Research Center, Japan in March 1994.

Description

The plant type of this variety is semi-compact (plant height 75-150 cm). It is non-twinning, and does not have any pubescence. General shape of the leaf is cordated (heart-shaped), slightly lobed with three teeth lobes. Abaxial leaf vein color is mostly purple. Vine internode length is very short (<3 cm), while diameter is intermediate (7 - 9 mm). Vine is mostly dark purple, but the tip is green. Petiole length is intermediate (21-30 cm). Petiole is green, but some parts are purple. Mature leaf color is green with purple veins on upper surface. Immature leaf is green. CIP-2 is highly resistant to scab, and canopy score is 3.5 (cover most of soil surface) out of 4.0. Storage root arrangement is open cluster, with cream skin and white flesh color. Storage root is round elliptic, uniform in size and shape.

Culture

The performance of this variety was relatively stable under three different environments, Bogor, the humid tropics with poor soil condition, Lembang, cooler climate in highland, and Malang, medium elevation with highly fertile soil. The harvest time of this variety is 120 days after planting at lowland and 150 at highland (~1,600 m asl).

During the rainy season in 1996 and the dry season in 1997, this variety was able to produce 21.4 t/ha as average yield. Farmers in Cibening, West Java like this variety because of high yield, good shape, and plant vigor although it was grown under the drought condition. It has very good marketability.



Uses

Average dry matter content is 38.0 %, and average extractable starch content 27.7 %. This variety is highly recommended for processing industry. Taste is also very good after boiling. Sensory tests done by village people in Malang area indicated this variety has very good taste. Flour made from this variety was as white as that from wheat, and recovery rate was more than 35%.

Table 1. Yield of CIP -1 and CIP -2 tested in three locations during the rainy season in 1996 and the dry season 1997.

| Variety | Yield 1996 | | | Average | Yield 1997 | | | Average |
|---------|------------|--------------------|---------|---------|------------|--------------------|---------|---------|
| | Malang | Bogor ¹ | Lembang | | Malang | Bogor ¹ | Lembang | |
| | | | | t/ha | | | | |
| CIP-1 | 16.2 | 6.9 | 15.1 | 12.7 | 8.2 | 9.4 | 18.8 | 12.1 |
| CIP-2 | 30.4 | 14.1 | 25.9 | 23.5 | 24.6 | 11.1 | 21.8 | 19.2 |

¹ No fertilizer was applied for trials in Bogor.

Table 2. Storage root dry matter content of CIP-1 and CIP-2 measured in three locations during the rainy season 1996 and the dry season 1997.

| Variety | DM 1996 | | | Average | DM 1997 | | | Average |
|---------|---------|-------|---------|---------|---------|-------|---------|---------|
| | Malang | Bogor | Lembang | | Malang | Bogor | Lembang | |
| | | | | % | | | | |
| CIP-1 | 30.8 | 33.2 | 32.2 | 32.1 | 31.0 | 34.2 | 35.3 | 33.5 |
| CIP-2 | 37.8 | 34.8 | 37.1 | 36.5 | 39.1 | 39.5 | 39.7 | 39.4 |

Table 3. Extractable starch content of CIP-1 and CIP-2 measured in three locations during the rainy season 1996 and the dry season 1997.

| Variety | Starch content 1996 | | Starch content 1997 | | |
|---------|---------------------|--|---------------------|-------|---------|
| | Lembang | | Malang | Bogor | Lembang |
| | | | % | | |
| CIP-1 | 22.5 | | 18.7 | 22.4 | 27.7 |
| CIP-2 | 25.4 | | 25.9 | 28.0 | 31.5 |