

under the All India Coordinated Research Project on Oilseeds (AICORPO) in 1988/89 postrainy season; it produced 16% more pod yield (2490 kg ha⁻¹) than JL 24 (2148 kg ha⁻¹) and 19% more seed yield (1709 kg ha⁻¹) than JL 24 (1434 kg ha⁻¹).

Registration of Groundnut Cultivar Venus (ICGV 87853)

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Purpose of description

The Mauritius Sugar Industry Research Institute recommended and released the groundnut (*Arachis hypogaea*) cultivar ICGV 87853 as 'Venus' for cultivation in 1998 (MSIRI 1998). Venus has significantly outyielded the popular cultivar Cabri by 48% and was more stable in yield than Cabri. The seeds of Venus are larger than those of Cabri and are accepted for boiled nuts. Venus is resistant to rust (*Puccinia arachidis*) and is recommended for cultivation both as a pure crop and as intercrop with sugarcane in Mauritius.

Origin and development

ICGV 87853 was developed from a cross between Kadiri 3 (ICG 799) and a stable interspecific derivative, CS-9.

Kadiri 3 is a released Virginia cultivar grown in India. CS-9 is a derivative of a cross between PI 261942 and *Arachis cardenasii* with multiple disease and insect resistance and is registered as ICGV 87165 (Moss et al. 1997). ICGV 87853 was developed by bulk method of selection.

Performance

In the four foliar diseases resistance trials conducted at ICRISAT, Patancheru, India during rainy season in 1990 and 1991, ICGV 87853 with a mean pod yield of 1.58 t ha⁻¹ outyielded the improved Virginia cultivar ICGS 76 by 43.7% and Kadiri 3 by 64.6% (Table 1). In another set of four drought tolerance trials conducted at ICRISAT during 1990-92 rainy and postrainy seasons, ICGV 87853 with a mean pod yield of 1.83 t ha⁻¹ outyielded the popular Spanish cultivars, TMV 2 by 22.8% and ICGS 11 by 6.4%. In Mauritius, it has shown a mean pod yield superiority of 47% across 26 trials conducted at different locations during 1994-97 (Govinden and Ismael 1997) (Table 2). Venus with $Y = 1.08x + 0.16$ ($r^2 = -0.90$) compared to $Y = 0.87x - 0.38$ ($r^2 = 0.86$) of Cabri was more stable and predictable in its pod yield performance in Mauritius (Ismael and Govinden 1998).

Plant characters

ICGV 87853 belongs to the Virginia bunch botanical group (*Arachis hypogaea* subsp *hypogaea* var *hypogaea*). It has decumbent-3 growth habit; alternate flowering; and medium-sized, oval, dark green leaves. It has an average of six primary and four secondary branches. Its plant height is about 32 cm. The flower is yellow with orange crescent and red markings on the standard petal. ICGV 87853 matures in about 120 to 125 days during the rainy season and 135-140 days during the postrainy season at

Table 1. Pod yield of groundnut cultivar ICGV 87853 (Venus) and control cultivars at ICRISAT, Patancheru, India during rainy season in 1990 and 1991.

| Cultivar | Pod yield (t ha ⁻¹) | | | | Mean |
|--------------------|---------------------------------|------------------------|-----------|-----------|------|
| | 1990 (HI) ¹ | 1990 (LI) ² | 1991 (HI) | 1991 (LI) | |
| ICGV 87853 | 1.55 | 1.02 | 2.11 | 1.65 | 1.58 |
| ICGS 76 (control) | 1.11 | 0.65 | 1.60 | 1.05 | 1.10 |
| Kadiri 3 (control) | 0.81 | 0.56 | 1.48 | 0.98 | 0.96 |
| SE | ±0.100 | ±0.174 | ±0.068 | ±0.162 | |
| CV (%) | | 23 | 15 | 17 | |

1. HI = High input (60 kg P₂O₅ ha⁻¹; 400 kg gypsum ha⁻¹), supplemental irrigation, full protection from insects, and no protection from diseases.

2. LI = Low input (20 kg P₂O₅ ha⁻¹). rainfed, and no protection from insects and diseases.

Table 2. Pod yield at 8% moisture content of groundnut cultivar ICGV 87853 (Venus) and Cabri in various trials conducted in Mauritius from 1994 to 1997.

| Year | Season | No. of trials | Mean pod yield (t ha ⁻¹) | |
|--------------------------------|---------------|---------------|--------------------------------------|-------|
| | | | ICGV 87853 ¹ | Cabri |
| 1994 | Second season | 1 | 3.16 | 1.16 |
| 1995 | First season | 2 | 1.30 | 0.89 |
| 1995 | Second season | 5 | 4.16 | 2.19 |
| 1996 | First season | 4 | 2.08 | 1.87 |
| 1996 | Second season | 6 | 4.96 | 3.12 |
| 1997 | First season | 8 | 4.81 | 4.29 |
| Overall mean (26 trials) | | | 3.97 | 2.70 |
| First season mean (14 trials) | | | 3.53 | 2.81 |
| Second season mean (12 trials) | | | 4.48 | 2.57 |
| LSD (0.05) First season | | | | 0.52 |
| LSD (0.05) Second season | | | | 0.66 |

1. Mean pod yield superiority of ICGV 87853 over Cabri in 26 trials is 47%.

Table 3. Reaction of ICGV 87853 and control groundnut cultivars to foliar diseases at ICRISAT, Patancheru, India during rainy season in 1990 and 1991.

| Cultivar | Late leaf spot ¹ | | | | Rust ¹ | | | |
|--------------------|-----------------------------|---------------------------|--------------|--------------|-------------------|--------------|--------------|--------------|
| | 1990 (HI) ² | 1990 (LI) ³ | 1991 (HI) | 1991 (LI) | 1990 (HI) | 1990 (LI) | 1991 (HI) | 1991 (LI) |
| ICGV 87853 | 7 | 6 | 6 | 7 | 3 | 3 | 4 | 3 |
| ICGS 76 (control) | 8 | 9 | 7 | 8 | 8 | 7 | 8 | 8 |
| Kadiri 3 (control) | 9 | 9 | 9 | 9 | 9 | 8 | 8 | 9 |
| SE | ±0.3 | ±0.4 | ±0.6 | ±0.5 | ±0.2 | ±0.3 | ±0.4 | ±0.3 |
| CV (%) | 7 | 8 | 11 | 10 | 6 | 9 | 5 | 11 |

1. Scored on a 1-9 scale, where 1 = no disease, and 9 = 81-100% foliage damaged.

2. HI = High input (60 kg P₂O₅ ha⁻¹; 400 kg gypsum ha⁻¹), supplemental irrigation, full protection from insects, and no protection from diseases.

3. LI = Low input (20 kg P₂O₅ ha⁻¹), rainfed, and no protection from insects and diseases.

ICRISAT, Patancheru. In Mauritius it took about 140-150 days to mature.

Pod and seed characters

ICGV 87853 usually has 2-seeded pods, which are characterized by a small beak, slight constriction, and moderate reticulation. The average pod length is 34 mm, and pod width is 10 mm. Its shelling turnover on average is 68%. Its 100-seed mass ranges from 32 g to 52 g depending on the season and location. The seeds of ICGV 87853 are tan and a higher proportion of them (57.5%) fall under the Virginia medium grade and a smaller proportion under Spanish no.1 and split grades.

Reaction to diseases and pests

In four trials conducted at ICRISAT, Patancheru, ICGV 87853 was resistant to rust (Table 3) with a mean score of 3.2 compared to a mean score of 7.8 for ICGS 76 and 8.5 score for Kadiri 3 on a 1-9 disease rating scale (Subrahmanyam et al. 1995). ICGV 87853 was moderately tolerant to late leafspot compared to the susceptible cultivar Kadiri 3 (Table 3).

References

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Huayu 16: A New High-yielding, Improved Quality Groundnut Cultivar with Wide Adaptability for Northern China

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China is one of the major groundnut (*Arachis hypogaea*)-producing countries in the world. It ranks second in area and first in production of groundnut in the world. The average yield of groundnut in China increased by 188.5% in 1998 compared with 1949. Selection and extension of new groundnut cultivars has played an important role in increasing the productivity of groundnut in the country (Qiu Qingshu et al. 1996). But most of the current high-yielding cultivars in northern China, such as Luhua 14, Luhua 11, and Jiyou 4, have resistance only to the abnormal climatic conditions (drought or waterlogging), and their quality characteristics are not satisfactory. It is essential to develop new high-yielding cultivars with improved comprehensive characteristics.

Table 1. Average pod yield and seed yield of groundnut cultivar Huayu 16 in provincial trials and demonstration tests in Shandong and Hebei provinces, China.

| Cultivar | Pod yield (t ha ⁻¹) | Pod yield increase over control (%) | Seed yield (t ha ⁻¹) | Seed yield increase over control (%) |
|---|------------------------------------|--|-------------------------------------|---|
| A. Provincial trials¹ | | | | |
| Shandong | | | | |
| Huayu 16 | 3.97 | 11.36 ² | 2.92 | 14.15 ³ |
| Luhua 11 (control) | 3.56 | | 2.56 | |
| Hebei | | | | |
| Huayu 16 | 4.13 | 11.38 ² | 3.12 | 16.51 ³ |
| Jiyou 8 (control) | 3.71 | | 2.68 | |
| B. Demonstration plots⁴ | | | | |
| Shandong | | | | |
| Huayu 16 | 4.83 | 10.74 ² | 3.54 | 13.21 ³ |
| Luhua 11 (control) | 4.37 | | 3.13 | |
| Hebei | | | | |
| Huayu 16 | 3.77 | 7.48 | 2.88 | 12.09 ² |
| Jiyou 8 (control) | 3.60 | | 2.57 | |

1. Mean of 19 sites in Shandong in 1996/97 and 6 sites in Hebei in 1997/98.

2. Significant.

3. Highly significant.

4. Mean of 6 sites in Shandong and 3 sites in Hebei in 1998.