



A pentafoliate groundnut (*Arachis hypogaea* L.) culture, TCGS-635

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Paripinnate leaves with two pairs of leaflets is the usual condition in groundnut (*Arachis hypogaea* L.). Though rare, variations in number and arrangement of leaflets were reported earlier (1, 2 and 3). Short mutants with reduced leaflet size and imparipinnate leaf and three paired leaflet arrangement that resulted from irradiation and wide hybridization were reported earlier (1&2). A variant with imparipinnate and normal leaflet size was isolated from one of the F_3 progenies of the cross TG-16/TG-17 by Mouli and Kale (3) in which both parents had paripinnate leaves.

In present study, a single plant selection in F_3 generation of the cross combination, Tirupati1/ICGV-86398 had five leaflets per leaf. It bred true in succeeding generations. It was given Tirupati Centre Groundnut Selection number, TCGS-635. The female parent, Tirupati-1 is a high yielding drought tolerant cultivar with four leaflets per leaf. It belongs to *Arachis hypogaea* sub sp. *fastigiata* var. *vulgaris*. It has narrow leaflets that are moderately long. The male parent, ICGV-86398 also possesses four leaflets per leaf. It belongs to *Arachis hypogaea* sub sp. *hypogaea* var. *hypogaea* and is resistant to jassids. Its leaflets were of moderate size. The variant, TCGS-635 has five narrow and small leaflets. The fifth leaflet is the apical one and is slightly smaller than the other four leaflets. The leaves with five leaflets occur in frequency of 33 to 40%. In the mutants/variants isolated by Mouli and Kale [3] and Patil [1] they were in frequency of 12% and 45% respectively.

The variant, TCGS-635 flowered in 27 days, came to full bloom in 33 days after sowing and matured in 95 days in *kharif* and in 100 days in *rabi* conditions. It is an erect bunch and has thin stems with sparsely hairy leaflets. It has field tolerance to *Spodoptera* sp. (when JL-24, a susceptible variety had 63% damaged leaflets TCGS-635 had only 43% damaged leaflets during 1997-98 *rabi* season) and bud necrosis disease (while the susceptible variety JL-24 had 24% affected plants TCGS-635 had only 5.6% affected plants). It gave an average pod yield of 2568 kg/ha⁻² in *rabi* in

Table 1. Morphological attributes of TCGS-635 as per IBPGR-ICRISAT descriptors

Growth habit	: Erect
Branching pattern	: Sequential
Height of main stem (cm)	: 52
Stem pigmentation	: Absent
Stem surface	: Sub-glabrous
Type of Inflorescence	: Compound
Standard petal colour	: Yellow-orange
Colour of standard petal markings	: Dark-orange
Peg pigmentation	: Absent
Leaf colour	: Green
Leaflet length (cm)	: 4.9 (mean from 5 leaves)
Leaflet width (cm)	: 2.6 (mean from 5 leaves)
Apical leaflet length (Fifth leaflet) (cm)	: 3.8 (mean from 5 leaves)
Apical leaflet width (fifth leaflet) (cm)	: 2.5 (mean from 5 leaves)
Length/width ratio	: 1.89
Leaflet shape	: Obovate
Leaflet surface	: Almost glabrous above
Number of seeds per pod	: 2-1
Pod beak	: Slight
Pod constriction	: Slight
Pod reticulation	: Slight
Pod length (mm)	: 24.2 (mean of 10 pods)
Pod width (mm)	: 10.3 mm (mean of 10 pods)
Seed colour	: One colour
primary seed colour	: Rose
Secondary seed colour	: Nil
Seed length	: 11.8 mm (mean of 10 seeds)
Seed width	: 8.06 mm (mean of 10 seeds)
Days to emergence	: 5 (optimum moisture conditions)
Days to 50% flowering	: 33
Days to maturity	: 100
Fresh seed dormancy	: Germination immediately after harvest
Seed dormancy	: 95% germination immediately
Shelling percentage	: 70
Yield	: 1135kg/ha in <i>kharif</i>
Collar rot	: Moderately tolerant (incidence in TCGS-635 -15% and JL-24.31%)
<i>Spodoptera</i> sp.	: Moderately tolerant (as per text.)

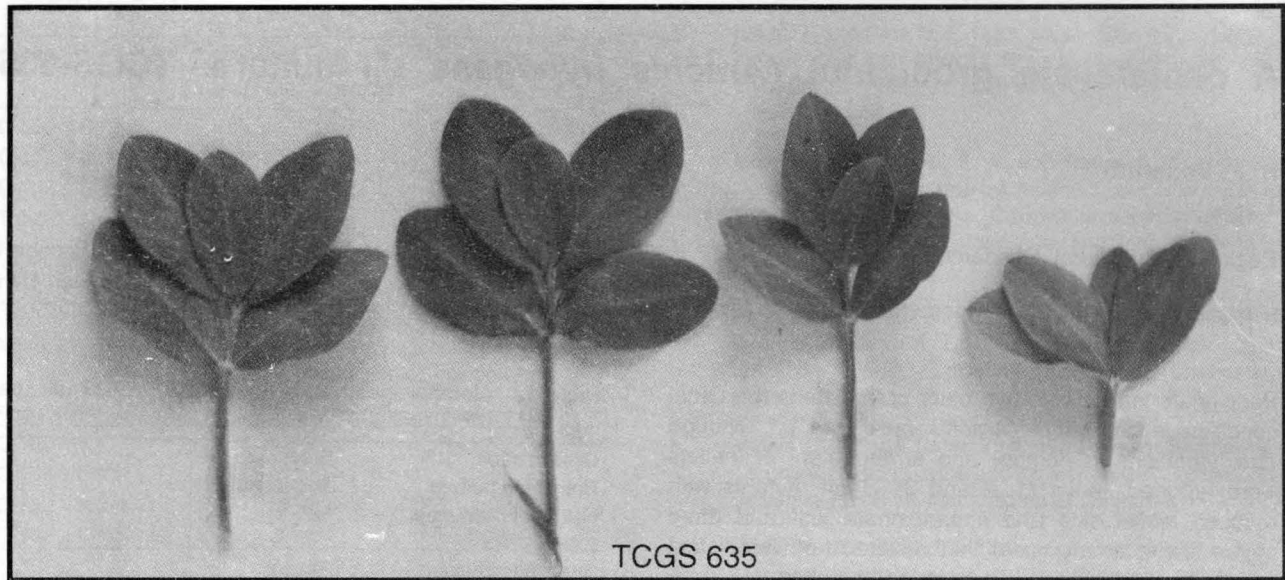


Fig. 1. Pentafoliate leaves of TCGS-635

experimental farm of Regional Agricultural Research Station, Tirupati. The detailed morphological features of the culture are presented in Table 1 as per the IBPGR-ICRISAT descriptors. Pods are mostly two-seeded with slight beak, slight constriction and slight reticulation. Its 100-pod mass is 55g. 100-seed mass is 33g. Testa is light-rose in colour.

References

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