

Species Datasheet

Datasheet No. A-140.002.032
(family.genus.species)

DBT- Networ

1. Taxon:

Species: *Vigna unguiculata* (L.) Walp.

Subspecies:

Variety:

Cultivar:

Hybrid:

Image file:

2. Synonyms: *Dolichos biflorus* L., *D. catjang* Burm.f., *D. catjang* L., *D. hastifolius* Schnizl., *D. lubia* Forssk., *D. melanophthalmus* DC., *D. melanophthalmus* DC., *D. monachalis* Brot., *D. obliquifolius* Schnizl., *D. sinensis* L., *D. sphaerospermus* (L.) DC., *D. tranquebaricus* Jacq., *D. unguiculata* L., *D. unguiculatus* L., *Liebrechtsiascabra* De Wild., *Phaseolus sphaerospermus* L., *P. unguiculatus* (L.) Piper, *Vignabrachycalyx* Baker f., *V. catjang* (Burm.f.) Walp., *V. catjang* Savi, *V. catjang* (Burm.f.) Walp., *V. scabra* (De Wild.) T. Durand & H. Durand, *V. scabrida* Burt Davy, *V. sinensis* (L.) Savi ex Hausskn., *V. sinensis* (L.) Savi ex Hassk., *V. sinensis* subsp. *sinensis*, *V. sinensis* var. *spontanea* Schweinf., *V. unguiculata* subsp. *unguiculata*, *V. unguiculata* var. *unguiculata*

3. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Eudicots
- Clade: Rosids
- Order: FabalesBromhead
- Family: FabaceaeLindl.
- Subfamily: Faboideae Rudd
- Genus: *Vigna*Savi
- Species: *V. unguiculata* (L.) Walp.

Bentham and Hooker (1862)

Kingdom: Plantae
Division: Phanerogamia
Class: Dicotyledons
Subclass: Polypetalae
Series: Calyciflorae
Cohors: RosalesBercht. & J. Presl
Ordo: LeguminosaeJuss.
Subordo: PapilionaceaeGiseke
Genus: *Vigna*Savi
Species: *V. unguiculata* (L.) Walp.

4. Distribution:

Global: India, widely grown in Tropics

India: Kerala, Lakshadweep, Maharashtra, Orissa, Tripura, Uttarakhand, Uttar Pradesh, West Bengal

5. Indigenous/Exotic/Endemic; Cultivated/Wild: Cultivated and Wild

6. Threat Status:

IUCN:

BSI:

7. Habit and Habitat: Erect, twinning herb; grassland, bushland

8. Life Form: Therophytes

9. Economic Importance: Pulse crop grain is used widely for human nutrition, especially in Africa. It is one of the most important tropical dual-purpose legumes, being used for

vegetables (leaves and flowers), and grain, as fresh cut and carry forage, and for hay and silage, high potential as a green manure, can be used as animal feed or for soil enhancement.

10. Probable Progenitor of: Wild *V. unguiculata* progenitor of cultivated *V. unguiculata*^{12,145,146}

11. DNA

C-value **Methodology**

12. Basic chromosome number(s): $x=11$ ¹

13. Zygotic chromosome number(s): $2n=22$ ^{1, 4, 6, 27 - 38,71}

14. Gametic chromosome number(s): $n=11$ ⁴

15. Specialized chromosomes (B chromosomes/Sex chromosomes/Polytene

chromosomes/Neocentric chromosomes): B chromosomes⁴

Image file

16. Ploidy level: Diploid^{1, 4, 6, 27 - 38,71}

Image file

17. Agametoploidy:

18. Nature of polyploidy (auto, segmental, allo, autoallo):

19. Genomic formula:

20. Aberrant chromosome number(s) (aneuploidy, aneusomaty, polysomaty):

21. Somatic chromosomes: ^{1,6,27,29,34,37,38,71}

Karyotype Majority metacentric chromosomes

Chromosome size Small

NOR chromosome(s) 2

Degree of asymmetry Symmetrical

Image file

22. Banding pattern(s): C-banding^{28,29,36}; CMA/DAPI banding³⁷

Image file

23. Physical mapping of chromosomes:

In situ hybridization: 18S - 5.8S - 26S and 5S ribosomal gene families³³; 18s- 5.8s - 25s

rRNA genes, 5s rRNA genes, telomere- like sequences, and a family

of centromeric repetitive DNA sequences³⁰; Ty1-copia-like Retrotransposable Elements³²

Image file

Fluorescent in situ hybridization: 18S - 5.8S - 26S and 5S ribosomal gene families^{6,31,35,37}

Image file

24. Genomic in situ hybridization:⁶

Image file

25. Linkage map: ^{39,40,41,42,43}

Image file

26. Chromosome associations:

Female meiosis

Male meiosis: 11 II⁴

Image file

27. Chromosome distribution at anaphase I: 11:11⁴

28. Genetic diversity:

Chromosomal level^{31,34,38}

DNA level^{7, 8, 9,10, 21, 44-68,72}

29. Any other information (Apomixis; Inversion; Male sterility; Pollen grain mitosis;

Pollen stainability; Translocations etc.): Pollen stainability: 82-99%⁴