Species Datasheet

Datasheet No. A-061.112.016
(family.genus.species)

DBT- Network Programme

1.Taxon:

Species**:** *Zeuxinestrateumatica*(L.) Schltr.
Subspecies:
Variety:
Cultivar
Hybrid

Image file

2. Synonyms:

*Adenostylisemarginata*Blume
*Adenostylisintegerrima*Blume
Adenostylisstrateumatica (L.) Ames
Adenostylissulcata (Roxb.) Hayata
Neottiastrateumatica (L.) R.Br.
Orchisstrateumatica L.
*Pterygodiumsulcata*Roxb.
*Pterygodiumsulcatum*Roxb.
Spiranthesstrateumatica (L.) Lindl.
*Strateumazeylanica*Raf.
*Zeuxineboniii*Gagnep.
Zeuxinebracteata Wight
Zeuxinebrevifolia Wight
Zeuxineemarginata (Blume) Lindl.
Zeuxineintegerrima (Blume) Lindl.
*Zeuxineprocumbens*Blume
Zeuxinerobusta Wight
*Zeuxinerupicola*Fukuy.
*Zeuxinestenochila*Schltr.
Zeuxinestrateumatica var. *laxiflora*I.Barua
Zeuxinestrateumatica f. *rupicola* (Fukuy.) T.Hashim.
Zeuxinestrateumatica var. *rupicola* (Fukuy.) S.S.Ying
Zeuxinesulcata (Roxb.) Lindl. ex Wight
Zeuxinesulcata (Roxb.) Lindl.
*Zeuxinewariana*Schltr.

3.Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angisperms
- Clade: Monocots
- Order: Asparagales Link
- Family: OrchidaceaeJuss.
- Subfamily: Orchidoideae
- Tribe: Cranichideae
- Subtribe:Goodyerinae

Bentham and Hooker(1862)
Kingdom: Plantae
Division: Phanerogamia
Class: Monocotyledonae
Series: Microspermae
Ordo: Orchideae
Tribus: Neottieae
Subtribus: Spirantheae
Genus: *Zeuxine*Lindl.
Species:*Zeuxinestrateumatica* (L.) Schltr.

- Genus:*Zeuxine*Lindl.
- Species: *Zeuxinestrateumatica* (L.) Schltr.

4.Distribution:

Global: Turkmenistan, Tazikistan, Uzbeckistan, Afghanistan, Iran, China, western Himalayas, Pakistan, Sri Lanka,India (eastern Himalayas), Nepal, Myanamar, Thailand, Malaysia, Laos, Cambodia, Vietnam, Java, Sumatra, Borneo, Moluccas, Sulawesi, Philippines, New Guinea Taiwan, the Ryukyus and Japan and has been introduced to south Florida, Mexico and south through the Americas

India: Andhra Pradesh**,** Assam, Bihar, Karnataka, Madhya Pradesh, Orissa, Punjab, Rajasthan, Uttar Pradesh

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

6.Threat Status:

IUCN:

BSI:

7.Habit and Habitat:terrestrial tuberous herb, grows in moist localities in plains up to 1000 m, either on open grassland or in sandy soil among the bushes of *Saccharumspontaneum*

8.Life Form: Cryptophytes

9.Economic Importance:medicinal (In India the tubers of this orchid are used as a source of tonic in combination with roots of *Cymbidium aloifolium*)

10. Probable Progenitor of:

11.DNA

C-value **Methodology**

12.Basic chromosome number(s):x=10[1, 2, 3,9]

13. Zygotic chromosome number(s):2n=50[1, 2, 3,9] ,

20 to 100[13],

20, 22-64, 30-56, 42, 50, 60, 100[13]**,**

20, 22, 40, 50, 100[6, 7, 11]

14. Gametic chromosome number(s):n=10, 20[2, 3, 7, 13]

15.Specialized chromosomes (B chromosomes/Sex chromosomes/Polytene chromosomes/Neocentric chromosomes):

Image file

16.Ploidy level:2x,4x,5x,6x,10x (2n=20,40,50,60,100) and also aneuploidy types at 4x and 6x levels (2n=42,44, and 64)[1, 2, 3, 6, 7, 9, 11, 13]

Image file

17.Agametoploidy:

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

19.Genomic formula:

20.Aberrant chromosome number(s)(aneuploidy, aneusomaty, polysomaty): Aberrant chromosome numbers in some PMC's found in cytotypes at 4x and 6x level [13]

21.Somatic chromosomes: The pollen mitosis of diploid cytotype (n=10) shows 9 metacentric and 1 acrocentric chromosome[7, 13]

Karyotype

Chromosome size

NOR chromosome(s)

Degree of asymmetry

Image file

22. Banding pattern(s):

Image file

23.Physical mapping of chromosomes:

In situ hybridization

Image file

Fluorescent in situ hybridization:

Image file

24.Genomic in situ hybridization:

Image file

25. Linkage map:

Image file

26.Chromosome associations:

Female meiosis

Male meiosis Cytotype 1: Diploid (2n=20) regular 10 II at metaphase-I, some cases of precocious disjunction of bivalents and non conjugated chromosomes[1, 2, 3, 7, 11, 13]

Cytotype2: 2n=22 showing 11 bivalent at M-I[7, 11]

Cytotype 3: Tetraploid, 2n=40, 20II at early M-I size smaller than those of diploid , various combinations of I,II and chains of IV and precocious separation of bivalents have been observed [1, 2, 3, 7, 11]

Cytotype 4: 2n=30-56, 2n=42 most frequent, PMC's show varied chromosome numbers either due to aneusomaty or because of irregular premeiotic mitosis in archesporial cells I's,II's and multivalents at M-I[13]

Cytotype 5: Pentaploid 2n=50, Completely asynaptic 50 I's scattered all over in the PMC at M-I, these I's may form multiple association of 2-15 chromosomes in the form of chains[1, 2, 3, 7, 11, 13]

Cytotype 6: Hexaploid, 2n=22-64, 2n=60 most frequent, Meiosis abnormal laggards and multipolar spindles[13]

Cytotype 7: Decaploid 2n=100, I's, II's and multivalents at M-I, Chromosome size much smaller than other types[7, 11, 13]

Image file

27.Chromosome distribution at anaphase I: Cytotype 1: Diploid (2n=20) shows 10:10 segregation[3, 13],

Cytotype 2: Diploid (2n=22) 11:11 segragation[7]

Cytotype 3: Tetraploid (2n=40) unequal segregation laggards[2, 3, 7, 11]

Cytotype 4: 2n=30-56, 42 frequent, Laggards at A-I lead to pentads, tetrads, triads, diads and monads[13]

Cytotype 5: 2n=50,Theasynaptic M-I gives rise to 50:50 segregation to form dyads [1, 2, 3]

Cytotype 6: 2n=22-64, 60 frequent, Abnormal segregation leads to formation of pentads, tetrads, triads, diads and monads[13]

Cytotype 7: 2n+100, Faulty segregation some cells show 50:50 distribution[7, 11]

28. Genetic diversity:

Chromosomal level
Image file
DNA level[10]

29.Any other information (Apomixis; Inversion; Male sterility;Pollen grain mitosis; Pollen stainability;Translocationsetc.):