Wild Genepool of Pearl Millet at ICRISAT Genebank

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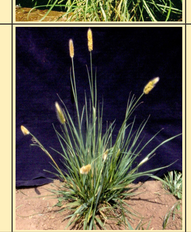
- Pearl millet (*Pennisetum glaucum* (L.) R. Br.) is an important food and forage crop in Africa and Asia, and important forage in the Americas
- It has great potential because of its suitability to the extreme limits of agriculture
- Defused belt stretching from Senegal to Western Sudan is the center of origin of pearl millet
- Domesticated 4000 years ago and reached Eastern Africa, then spread to India 3000 years ago and to southern Africa 2000 years ago
- Many wild relatives of pearl millet that have adapted to diverse climates and developed resistance to pests and diseases exist in nature, and are useful in pearl millet improvement
- ICRISAT genebank at Patancheru, India conserves 22,211 germplasm accessions including 750 accessions of 24 wild species of genus *Pennisetum*, from 51 countries
- Of over 140 species of genus *Pennisetum*, only 24 are conserved at the ICRISAT genebank
- Small seed samples of wild accessions are available for research use under the Standard Material Transfer Agreement (SMTA) from the ICRISAT genebank.

Species name	Plant	No. of accessions	Genepool and ploidy	Traits of importance	Life cycle and Reproduction
P. monodii (Maire) Brunken *(P. violaceum)*		335	Primary genepool, 2n=2x=14	Progenitor, source for new cytoplasm and fodder	Annual, Sexual
P. mollissimum Hochst.		48	Primary genepool, 2n=2x=14	Fodder	Annual, Sexual
P. schweinfurthii Pilger.		5	Secondary genepool, 2n=2x=14	Source for large seeds and fodder	Annual, Sexual
P. purpureum Schum. (Napier/ elephant grass)		35	Secondary genepool, 2n=4x=28	Good source for cut and carry green fodder. Used as living fence, thatching, hay and silage, and in paper making	Perennial, Vegetative/ Sexual
P. alopecuroides (L.) Spreng. (Swamp foxtail)		1	Tertiary genepool, 2n=2x=18	Ornamental	Annual, Sexual
P. hordeoides Steud.		1	Tertiary genepool, 2n=2x=18	Fodder	Annual, Sexual/ Apomixis
P. pedicellatum Trin. (Deenanath grass)		134	Tertiary genepool, 2n=4x=36	Downy mildew resistance. Used as good green fodder, used for thatching and making mats	Annual, Sexual
P. polystachion L. Schult. (Mission grass)		88	Tertiary genepool, 2n=6x=54	Downy mildew and rust resistance, good fodder, hay for horses	Annual/ Perennial, Sexual/ Apomixis

Species name	Plant	No. of accessions	Genepool and ploidy	Traits of importance	Life cycle and Reproduction
P. ramosum (Hochst.) Schweinf.		6	Tertiary genepool, 2n=2x=10	Used as forage before flowering	Biannual, Sexual/ Apomixis
P. cenchroides Rich.		5	Tertiary genepool, 2n=4x=36	Fodder	Perennial, Sexual
P. ciliare L. Mant. Syn: Cenchrus ciliaris L. Mant. (Buffel grass)		11	Tertiary genepool, 2n=4x=36	Permanent pasture, hay and silage, drought tolerance	Perennial, Sexual/ Apomixis
P. clandestinum Hochst. Ex Chiov. (Kikuyu grass)		1	Tertiary genepool, 2n=4x=36	Pasture grass, soil binder	Perennial, Vegetative/ Sexual
P. divisum (Forssk.) Ex. Gmel.		7	Tertiary genepool, 2n=4x=36	Fodder	Perennial, Sexual
P. flassidum Griseb.		6	Tertiary genepool, 2n=4x=36	Ornamental, fodder	Perennial, Sexual/ Apomixis
P. hohenackeri Hochst. Ex Steud. (Moya grass)		8	Tertiary genepool, 2n=2x=18	Used for thatching, rope and paper making	Perennial, Sexual/ Apomixis
P. lanatum Leeke.		1	Tertiary genepool, 2n=2x=18	Forage	Perennial, Apomixis

Species name	Plant	No. of accessions	Genepool and ploidy	Traits of importance	Life cycle and Reproduction
P. macrostachyum (Brongn.) Trin.		1	Tertiary genepool, 2n=7x=63	Ornamental	Perennial, Sexual
P. macrourum Trin. (Needle grass)		1	Tertiary genepool, 2n=4x=36	Fodder	Perennial, Vegetative
P. mezianum Leeke.		4	Tertiary genepool, 2n=4x=32	Source for drought tolerance	Perennial, Sexual/ Apomixis
P. orientale L.C. Rich.		33	Tertiary genepool, 2n=4x=36	Drought tolerance, good soil binder and forage grass	Perennial, Sexual/ Apomixis
P. setaceum (Forssk.) Chiov. (Fountain grass)		11	Tertiary genepool, 2n=3x=27, 2n=6x=54	Ornamental, used as hedges	Perennial, Sexual/ Apomixis
P. squamulatum Fresen.		2	Tertiary genepool, 2n=6x=54	Source for winter hardiness, green fodder	Perennial, Apomixis
P. thunbergii Kunth.		4	Tertiary genepool, 2n=2x=18	Ornamental	Perennial, Sexual
P. villosum Fresen. (Feather top)		2	Tertiary genepool, 2n=5x=45	Ornamental	Perennial, Sexual/ Apomixis/ vegetative

Further Reading

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