

Cajanus gene pool at ICRISAT genebank

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- ❖ Pigeonpea (*Cajanus cajan* (L.) Millsp. is an important grain legume crop of the tropics and subtropics.
- ❖ It is an excellent source of protein, minerals and vitamins and has multiple uses such as food, feed, fuel, fencing, roofing, basket making and as a soil enricher and soil binder.
- ❖ ICRISAT genebank holds the world's largest collection of 13,632 pigeonpea germplasm accessions from 74 countries including 555 accessions of wild relatives belonging to 67 species of 6 genera.

- ❖ The genus *Cajanus* has 32 species, of which 20 are available at the ICRISAT genebank.
- ❖ *Cajanus* species belonging to primary and secondary gene pools are crossable with cultivated pigeonpea and possess resistance to one or the other biotic and abiotic stresses in addition to having agronomic traits useful in crop improvement.
- ❖ Small seed samples of wild accessions are available for research use following the Standard Material Transfer Agreement (SMTA), from the ICRISAT genebank.

Species/genepool	Plant	Pods	Seeds	No. of accessions	Useful traits
<i>Cajanus cajan</i> (L.) Millsp. (all cultivated) Primary genepool				13,077	Major source of protein in Indian diet and has multiple uses like food, feed, fuel, fencing, roofing, basket making and as soil enricher and soil binder. Also used in traditional medicine
<i>C. acutifolius</i> (F. von Muell.) van der Maesen Secondary genepool				12	Resistance to pod borer and podfly; tolerance to drought and salinity.
<i>C. albicans</i> (W. & A.) van der Maesen Secondary genepool				20	Resistance to Sterility Mosaic Disease (SMD), alternaria blight, pod borer, podfly, pod wasp; tolerance to drought and salinity; high seed protein (> 30%). Crossable with cultivated pigeonpea
<i>C. cajanifolius</i> (Haines) van der Maesen Secondary genepool				5	Progenitor, genetic male sterility, tolerance to salinity, pod borer, podfly and pod wasp. Crossable with cultivated pigeonpea
<i>C. lanceolatus</i> (WV Fitzg.) van der Maesen Secondary genepool				1	No information
<i>C. lineatus</i> (W. & A.) van der Maesen Secondary genepool				10	Resistance to SMD, alternaria blight and drought tolerance. Crossable with cultivated pigeonpea
<i>C. latisepalus</i> (Reynolds & Pedley) van der Maesen Secondary genepool				1	No information
<i>C. scarabaeoides</i> (L.) Thou. Secondary genepool				102	Early flowering, high pod setting; resistance to wilt, SMD, phytophthora blight, alternaria blight, pod borer, podfly, cyst nematode; tolerance to waterlogging; high seed protein (> 28%). Crossable with cultivated pigeonpea
<i>C. sericeus</i> (Benth. Ex Bak.) van der Maesen Secondary genepool				4	Resistance to SMD, phytophthora blight, alternaria blight, pod borer and podfly; tolerance to drought and salinity; photoperiod insensitivity; high seed protein content (> 29%). Crossable with cultivated pigeonpea
<i>C. reticulatus</i> (Dryander) F. von Muell. Secondary genepool				8	Resistance to pod borer and root-knot nematodes; tolerance to drought; high seed protein (33%).

Species/genepool	Plant	Pods	Seeds	No. of accessions	Useful traits
<i>C. trinervius</i> (DC.) van der Maesen Secondary genepool				3	Crossable with cultivated pigeonpea
<i>C. cinereus</i> (F. von Muell.) F. von Muell. Tertiary genepool				1	High seed number per pod
<i>C. confertiflorus</i> F. von Muell. Tertiary genepool				1	No information
<i>C. crassus</i> (Prain ex King) van der Maesen Tertiary genepool				10	Resistance to SMD
<i>C. elongatus</i> (Benth.) van der Maesen Tertiary genepool				1	No information
<i>C. goensis</i> Dalz Tertiary genepool				1	High seed number per pod
<i>C. marmoratus</i> (R. Br. ex Benth.) F. von Muell. Tertiary genepool				2	No information
<i>C. mollis</i> (Benth.) van der Maesen Tertiary genepool				8	High seed protein content (33.4%); high seed number per pod
<i>C. platycarpus</i> (Benth.) van der Maesen Tertiary genepool				17	Resistance to phytophthora and alternaria blight; tolerance to salinity; annuality; photoperiod insensitivity; extra early flowering; high harvest index; high seed protein (27-31.6%); high cystine + methionine (> 29%).
<i>C. rugosus</i> (W. & A.) van der Maesen Tertiary genepool				6	No information

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