

## EVALUATION OF CROP GERMPLASM IN CENTRAL INDIA : CURRENT STATUS

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At present, nearly 30,000 accessions are being maintained at Akola as active collections of various crops, viz., pigeonpea (2380), Chickpea (1482), wingedbean (241), lentil (651), kulthi (1050), Lathyrus (135), soybean (2402), linseed (710), safflower (1933), sesame (5773), groundnut (624), niger (396), castor (244), amarnath (1146), sorghum (177), koJo millet (529), proso millet (401), little millet (502), barnyard millet (528), foxtali millet (1365), finger millet (4321), and okra (2236). The Satellite Centre at Amravati maintains the working collections of 4859 accessions including 3700 accessions of different agricultural crops, viz., mungbean (2834), mothbean (165), uridbean (107), lablabbean (449), ricebean (112) and yambean (33). The horticultural crops maintained are sweet-potato (278), papaya (20), grapes (60), custard apple (41), pomegranate (35), ber (20), citrus species (5) chillies (700), *Simarouba glauca* and other 20 economic crop plants.

The germplasm holdings were characterized for various qualitative and quantitative traits as per the norms of IPGRI descriptors (Table 1). The most promising germplasm in various crops were identified for further testing. Several germplasm lines were also tested in different adaptive trials under All India Co-ordinated Research Projects, viz., AKSS-65, AMSS-34, AKSS-80, AMSS-41 in Soybean; EC-38821-B, EC-38995-A and EC-114273-B in wingedbean; IC-49618, IC-5564, IC-35696, IC-21930 in amaranth; EC-114273-B of wingedbean has been released as AKWB-1 for commercial cultivation in Karnataka and Maharashtra as vegetable. On the basis of preliminary evaluation and consistency in performance, some elite genotypes have been identified and presented in Table 1. However, the donor types identified in various crops for various attributes are presented in Table 2.

**Table 1. List of promising accessions identified**

Crop group	Crop name	Accessions evaluated	Characters evaluated	Promising accessions
Oilseeds	Sesame	5773	34	IC 41977, IC 43224, NIC 8212, NIC 7716, NIC 8200, NIC 7785, NIC 7780 EC 89112, IC 4911, IC 23316, NIC 43102, EC 346172, EC 346198, EC 346231
	Safflower	1933	20	EC 181533, EC 181128, IC 119864, IC 119866, EC 303268, EC 181803 EC 182162, EC 182080, EC 182078, EC 182119, EC 182068, EC 181641.
	Groundnut	624	18	EC 36973, EC 21045, EC 20979, EC 11419, IC 53181, IC 95858, EC 21034
	Niger	396	18	EC 282996, IC 74794, UC 74989, IC 856, IC 15795, IC 16398, IC 53561 IC 15798, IC 119912, IC 119933, IC 119934
	Castor	244	19	EC 168489, IC 47569, C 43696, IC 43694, IC 43705, IC 47259, IC 119811, IC 119812, IC 119814.
	Linseed	710	19	EC 236, EC 1413, EC 4177, EC 41762, IC 59250, IC 59252, IC 61309, IC 61318, IC 61321, IC 61291, IC 62335, IC 63578, IC 96612
	Soybean	2402	25	EC 93403, EC 39025, EC 95808, EC 11741-A, EC 134041, EC 34146-B, EC 93741, EC 251372, EC 251484, EC 251527, EC 274674, EC 274675, EC 309535, EC 257977.
Pulses	Pigeonpea	2383	19	IC 32927, IC 23955, IC 34543, IC 56061, IC 73285, IC 73801, IC 110232, IC 117487, IC 117504, IC 117567, IC 117568.
	Chickpea	1482	18	EC 2199, EC 9449, EC 95044, EC 95191, IC 198633, EC 222975, EC 267470, EC 267504, IC 117829, IC 117865, IC 117758, EC 267256, EC 267307.
	Kulthi	1050	19	IC 9627, IC 56140, IC 56143, IC 56145, IC 18455, IC 26135, IC 26137, IC 43506, IC 110286, IC 110871, IC 120770, IC 120808, IC 120833
	Lentil	651	18	C 60965, IC 60968, IC 62505, IC 57762, IC 62511, IC 33920, IC 53239, IC 78422, EC 223212, EC 223215.

(Table 1 contd.)

	Mungbean	2834	55	IC 8654-4, EC 24130, PLM 306, PLM 240, PLM 277, PLM 311, PLM 175.
	Wingedbean	241	33	Vegetable type : EC 114273-B, EC 38995-A, EC 38957, EC 38825, EC 178271, EC 178331, EC 178275, EC 178298, EC 178313. Grain type: EC 27886, EC 178303, EC 26942, IC 95240.
	Khesari	150	11	IC 120453, IC 120458, IC 120455, IC 120472, IC 120495, IC 120500, IC 120501, IC 120510, IC 120520, IC 120523.
Millets	Finger millet	4321	10	IE 3144, IE 31, EKR 219, GE 743, GE 983, IE 3464, IE 3143, IC 120380, GE 4354, GE 4363, GE 4342, GE 77, GE 452, GE 582
	Foxtail millet	1365	10	ISE 941, ISE 905, ISE 781, ISE 1363, ISE 426, ISE 1135, ISE 989, ISE 1013, ISE 1042, ISE 1077, IC 120148.
	Barnyard millet	528	10	IEC 288, IC 28445, IC 41788, IEC 157, IEC 562, IEC 565, IC 28435, IEC 104, IEC 170, IEC 331.
	Little millet	502	10	IPMR 388, IPMR 421, IPMR 433, IPMR 728, IPMR 742, IPMR 750, IPMR 862, IPMR 872, IC 120395, IC 120353.
	Proso millet	401	10	IPM 79, IPM 264, IPM 121, IPM 136, IPM 2162, IPM 2618, IPM 2629, IPM 2644, IPM 2700, IC 120356.
	Kodo millet	529	10	IPS 199, IPS 270, IPS 681, IPS 3417, IC 52471, IPS 669, IPS 585, IPS 79, IPS 346, IPS 570, IPS 325, IPS 135.
Pseudo cereal	Amarnath	1146	15	IC 35661, IC 35696, IC 35624, IC 35681, IC 95638, IC 21947, IC 38243, IC 38267, IC 95505, IC 120867, IC 120588, EC 284348
Vegetables	Okra	2236	54	EC 169341, EC 169357, EC 169358, EC 305635, EC 305639, EC 305655, EC 305675, EC 305737, EC 305738, EC 306735, EC 306751, EC 306736, EC 306725, EC 305691.
	Chillies	700	15	BDJ 2254, EC 103820-1, IC 18882
Fruit crops	Papaya	20	10	EC 109088, EC 109089, EC 109090, EC 26495
	Grapes	51	12	EC 38478, EC 38557, EC 26914
Tuber crops	Sweet potato	278	10	EC 5889, EC 13468-A, EC 13469, Pusa lal.

**Table 2. Donor types identified in various crops**

Crop	Characters	Accessions
Soybean	Four seeded pods	EC 172665, EC 172665-A, EC 250581, EC 251528.
	Bold seeds (20-30 g)	EC 301884, EC 39755, EC 232053, EC 257977, EC 257978, EC 301883, P1366, IC 118163
	Resisit. to B.P.	Bragg, EC 34094, EC 95806, EC 106991, EC 106992, EC 106998
	Multiple resistant (BP, SM, PB)	EC 95796, EC 107415, EC 172575, EC 172596, EC 251405, G 1526, G 2202, IC 118086, IC 118096, IC 118101, IC 18383.
	Defoliation resistant	EC 106991, EC 106992, EC 305353.
	Shattering resistant	EC 172575, EC 172630, EC 172648, EC 172659, EC 232044, EC 232048, EC 251411, EC 251418, EC 251457, EC 251478
	High seed germinability/longevity	IC 1182622, EC 241949, EC 241920, IC 202, IC 574, IC 14680, IC 19729, IC 24072, IC 81820, IC 118335, IC 117873, IC 118576, G 2524, IC 118110, EC 39495, EC 172587, EC 99991, EC 172638, EC 172654, EC 251369, EC 251418, EC 251459, EC 241771, EC 274673, EC 241412
	Photoinsensitivity	EC 14483, EC 38137, EC 117633, EC 289099, EC 291391, IC 118237, IC 118238, IC 118240
	Vegetable type	EC 250575, EC 250576, EC 301881, EC 301884, P 1366, IC 118163
	High oil content (23-25%)	EC 95809, EC 39703, EC 76736, EC 16694, EC 37050, EC 37939, EC 95277, EC 95796, EC 102612, EC 107407, EC 110676.
Chickpea	Bold seeds (40-60g)	EC 222917, EC 222978, EC 222991, EC 222992, EC 223125, EC 267224, EC 267424, EC 22307, EC 267318, EC 267489
	Twin pods	EC 267451, EC 267158, EC 267425.
	High pods	EC 219962, EC 220083, EC 267206, EC 267256, EC 267289, EC 267489
	High nodulation	EC 198544, EC 198705, EC 220046, EC 223459, EC 223485, EC 267112, EC 267227, EC 267279
Pigeonpea	Earliness	IC 105322, IC 105327, IC 117511, IC 117568, IC 112421, NIC 12771.
	High pod number	IC 110232, IC 110261, IC 117465, IC 117468, IC 117504, IC 117560, IC 117592.
	Long pods	IC 117504, IC 117511, IC 117557, IC 117560, IC 117577, IC 117581, IC 117585.
	High branches	IC 110323, IC 117464, IC 117468, IC 117502, IC 117530, IC 117567.
Safflower	Tall types	IC 110232, IC 110261, IC 117504, IC 117480.
	High seeds/capitulum	JL 1518, JL 1519, JL 1429

(Table 2 contd.)

	Bold seeds (5-7 g)	JL 1515, JL 896, EC 100523, JL 1339, JL 158, JL 160, JL 1370, JL 128, IC 6114
	High oil content (42-43%)	EC 100508, JL 1516, JL 1518, JL 1429, PC 100507, PI 343774, JL 1342, JL 1002, JL 151, Tara
Linseed	Earliness	EC 526, EC 1395, EC 14621, EC 41650, IC 61280, IC 61320, IC 96609
	Resist. to powdery mildew	EC 41495, EC 41767, IC 53288, IC 96513, IC 96514, IC 96532
	High oil content (46-47%)	EC 12538, IC 59008, IC 61306, IC 61322, IC 96506, IC 96745, IC 96646, IC 96649, IC 96749, IC 96663, IC 96751, IC 96666, IC 96752, IC 96680, IC 10544
Horsegram	Earliness	IC 49289, IC 105489, IC 120774, IC 120777, IC 120828, IC 120845.
	Long pods	IC 11387, IC 11405, IC 94591, IC 120837, IC 120825, NIC 11402.
	High pods	IC 105820, IC 120774, IC 120777, IC 120816, IC 120833, IC 120837
Lentil	Earliness	IC 27695, IC 53234, IC 53239, IC 60377, IC 60698, IC 95655, EC 223229
	Multiple seeds	IC 62508, IC 62509, IC 62558, IC 73120, IC 73122, IC 78498
	Bold seeds	EC 223212, EC 223220, EC 267596, EC 26730, EC 267709
	High pods	IC 33920, IC 53239, IC 78422, IC 78472, IC 78476, IC 78578
Okra	Earliness	EC 305611, EC 305612, EC 305639, EC 305616, EC 305609, EC 316053
	Long fruits	EC 305681, EC 305708, EC 305740, EC 316050, EC 316069, EC 316080
	Short fruits	EC 305741, EC 305739, EC 306701, EC 306736, EC 306743
	Less seeded fruits	EC 329371, EC 329366, NIC 9362, NIC 9376, NIC 9387, NIC 9487, NIC 10316
	Resist. to YMV	EC 305612, EC 305635, EC 305652, EC 305672, EC 305685, EC 306736
	High bearing	EC 305635, EC 305639, EC 305665, EC 306730, EC 306735, EC 305738
Sesame	Earliness	IC 96079, IC 96080, IC 96075, IC 96199, IC 54044, EC 178378
	High bearing	IC 43041, IC 43172, IC 52526, IC 96125, EC 13384, EC 132832
	Single culmed	EC 132132, IC 54004, IC 54006, IC 54016, IC 54025, IC 54054
	Basal branched	EC 132827, EC 133844, IC 41923, IC 41946, IC 31843.

Several crop catalogues were published viz., frenchbean (Patel *et al.*, 1981), Soybean (Bhatia *et al.*, 1983), sesame (Umesh Chandra *et al.*, 1984), Okra Part

II (Thomas *et al.*, 1991), okra Part III (Bisht *et al.*, 1993), sesame (Loknathan *et al.*, 1993), soybean (Verma *et al.*, 1993), linseed (Verma *et al.*, 1993), safflower, (Patel *et al.*, 1995) and kulthi (Patel *et al.*, 1995).

#### Maintenance of wild species:

Okra	<i>Abelmoschus ficulneus</i> , <i>A. callei</i> , <i>A. moschatus</i> , <i>A. manihot</i> , <i>A. tuberculatus</i>
Safflower	<i>Carthamus</i> , <i>lanatus</i> sub spp. <i>turkestanicus</i> , <i>C. lanatus</i> , <i>C. oxyacantha</i>
Soybean	<i>Glycine soja</i> , <i>G. tomentella</i> , <i>G. tabacina</i> , <i>G. canescens</i>
Sesamum	<i>Sesamum alatum</i> , <i>S. radiatum</i> , <i>S. indicum</i> (black seeded wild), <i>S. mulayanum</i>

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