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Short Communication

Evaluation of Oat Genetic Resources

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The genetic resources of *Avena*, mainly exotics, maintained at NBPGR totals 1000 accessions, which present an array of non-descript types, commercially grown varieties, improved lines and different species (Table 1). The majority of accessions were assembled in the past two decades. The available germplasm was introduced from more than 26 countries (Table 2).

TABLE 1. GENETIC RESOURCES OF *avena* SPECIES MAINTAINED AT NBPGR, NEW DELHI

Diploid (2n = 14)	Tetraploid (2n = 28)	Hexaploid (2n = 42)
A. brevis (2)	*A. abyssinica* (8)	*A. sativa* (881)
A. canariensis (2)	*A. barbata* (4)	*A. byzantina* (42)
A. damascena (1)	*A. magna* (4)	*A. chinensis* (1)
A. hirtula (2)	*A. murphyi* (1)	*A. fatua* (4)
A. longiglumis (3)	*A. vaviloviana* (1)	*A. ludoviciana* (1)
		A. macrostachya (1)
A. pilosa (1)	*A. weistii* (2)	*A. nuda* (17)
A. prostrata (1)		*A. sterilis* (10)
A. strigosa (10)		
A. ventricosa (1)		

Number of accessions are given in parentheses

TABLE 2. OAT GERMPLASM RESOURCES (EXOTIC & INDIGENOUS) AUGMENTED BY NBPGR

Country	Accessions	Country	Accessions
Argentina	62	Israel	4
Australia	117	Italy	3
Belgium	1	Kenya	1
Canada	46	Netherlands	4
Chile	1	New Zealand	2
Cyprus	1	Portugal	14
Denmark	2	Sweeden	7
Eucador	1	Switzerland	2
Finland	4	United Kingdom	24
France	2	USA	506
German Democratic Republic	2	USSR	38
Federal Republic Germany	17	Yugoslavia	2
Hungary	62	Miscellaneous	55
India	20		
Total germplasm			1,000

Preliminary Evaluation

The germplasm collections were grown in augmented block design (Federer, 1956) in single row plots of 3.0 m long and 0.45 m apart using 5 checks. The data were recorded on 5 competitive plants from each accession, using 32 quantitative and qualitative descriptors and descriptor states. The descriptor list was prepared by NBPGR.

The germplasm collections exhibited good amount of variability, for all the traits except tillers per plant, florets per spikelet and outer glume width. Mean, range and coefficient of variation for different traits are given in Table 3. Comprehensive catalogue, based on the data collected and arranged in computer readable form, has been prepared.

TABLE 3. MEAN, RANGE AND CO-EFFICIENT OF VARIATION IN *Avena* GERMPLASM FOR DIFFERENT QUANTITATIVE TRAITS

Descriptor/Descriptor State	Mean	Range	CV (%)
Leaf length (cm)	32.26	13.77- 61.97	17.96
Leaf width (cm)	1.63	0.33- 4.91	26.69
Flag leaf length (cm)	20.14	4.30- 44.70	24.22
Flag leaf width (cm)	1.49	0.62- 3.31	25.99
Leaves on the main culm	6.57	3.67- 9.95	10.17
Culm diameter (cm)	0.54	0.26- 0.97	17.58
Nodes on the main culm	5.89	2.38- 9.51	20.67
Longest internode length (cm)	17.87	7.38- 37.37	20.67
Tillers/plant	5.66	0.74- 9.50	18.54
Peduncle length (cm)	35.96	13.12- 62.08	21.16
Axis length (cm)	27.07	4.84- 56.80	23.96
Axis nodes	7.87	4.71- 11.63	12.32
Spikelets/panicle	58.27	17.12-135.84	30.75
Florets/spikelet	2.11	0.82- 3.15	14.96
Outer glume length (cm)	2.61	0.55- 3.95	10.04
Outer glume width (cm)	0.59	0.15- 0.99	15.74
Plant height (cm)	126.85	31.50-221.90	14.87
Green fodder yield (1 m row)	1.76	0.16- 7.66	38.87
Seed yield/5 panicles (g)	53.72	1.85-107.53	55.00
100 grain weight (g)	3.66	0.95- 6.17	23.22

Promising Varieties/Strains Identified

Several promising introductions for grain, green fodder and multi-purpose types were identified in the preliminary evaluation/experimental trials. Some of the collections obtained from Australia, USA and Canada were identified as short duraion grain types. Medium early to late fodder/dual purpose types were from Australia, UK, USSR and USA. These promising types include grain varieties—NP 101 (ex Australia), Rapida (ex USA) and dwarf oat selections like NP 101 (medium tall type with lax panicles) and EC 56175 (short statured, stiff straw with compact panicles), both from Australia.

REFERENCE

Federer, W. T. 1956. Augmented design. Hawaiian Planter's Record. 55 : 191-207.