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RADIATION-INDUCED "BUNCHY TOP" MUTANT IN GROUNDNUT

A NEW type dwarf mutant (Fig. *A*) in groundnut (*Arachis hypogaea*, L.) with extremely suppressed plant growth as well as reduced leaflet size was isolated during 1974. A comparative morphological characters and the inheritance of the mutant are reported here.

Dormant seeds of a variety, Spanish Improved, were treated with 10 to 60 kR gamma rays. Plants were grown and their susbequent progenies were screened for mutations. The mutant appeared in a M_2 progeny of 50 kR treatment. It was sterile, hence, maintained through the heterozygous progenies where genetic segregation was studied.

The comparative morphological characteristics of the mutant and the unirradiated parent are given in Table I. The basal two leaves in the mutant seedlings

TABLE I

Characteristics of the parent and the mutant

Characters	Spanish Improved	Mutant
Height (cm)	71·0 ± 2·11	8·5 ± 1·15
Number of branches (primary and secondary)	6 + 7	6 + 6
Number of nodes on stem	34·0 ± 1·2	32·0 ± 1·9
Internode length (cm)	2·5 ± 0·2	0·3 ± 0·11
Leaflet size (length × breadth) :		
basal node	2·8 × 1·8	2·4 × 1·5
upper node	7·3 × 3·8	1·3 × 0·7
Rachis length (cm)	8·4 ± 0·4	1·2 ± 0·12
Flowering and pod setting	Present	Absent

TABLE II

Genetic segregation of the mutant character

Genration	Number of progenies	Segregation: Phenotype: Normal	Mutant	χ^2 (3:1)	Genotype: Dominant homozygote	Hetero-zygote	χ^2(1:2)
M_1	1	13	..	..	..	..	..
M_2	13	405	..	—	—	—	—
M_3	1	29	9	0·035	..	..	..
M_4	28	569	168	1·90	10	18	0·05
M_5	50	744	252	0·04	17	33	0·017
Total heterozygotes	.. 79	1342	429	0·56	27	51	0·057

had normal leaflets and hence it could not be distinguished from the normal parent for about two weeks after germination. Subsequently, suppression of plant height and leaflet growth was quite distinct in the mutant (Fig. *B*) resulting in only 10–15% of the normal plant height. However, at harvest the number of nodes and the number of branches in the mutants were similar to those of the parent. The extremely stunted stem and branches with minute leaves (Fig. *C*) gives a "bunchy top" appearance to the mutant which did not produce flowers and pods. The dwarf mutants reported, so far, in groundnut[1-6] do not show extreme form of stunted growth and minute leaflets as in the "bunchy top" mutant.

FIGS. *A*–*C*. *A*. Sterile "bunchy top" mutant. *B*. Plants, Spanish Improved (left) and mutant. *C*. Leaves, Spanish Improved (left) and mutants.

Segregation for mutant type was noticed in one of the M_3 progenies during *kharif* 1974. Studies in M_4 and M_5 generations (Table II) showed monohybrid segregation and recessive nature of the mutant character. Genotypic segregation also confirmed the same. Accordingly the expression is controlled by a pair of recessive genes which may be designated as d^{stu} d^{stu} denoting stunted character.

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ACHAETOMIUM INDICUM RAI *ET* CHOWDHERY SPEC. NOV.: A NEW SPECIES OF THE GENUS *ACHAETOMIUM* FROM INDIAN 'USAR' SOILS

THE genus *Achaetomium* was established by Rai *et al.*[1]. It includes nine species, all described from Indian soils (Rai *et al.*[1–5]). The present paper deals with a new species, *A. indicum* spec. nov. This differs from the other known species in the size and shape of perithecia, asci, and ascospores. It shows close affinities with *A. strumarium*, but is distinct in having larger perithecia, asci, and ascospores. *A. indicum* has the largest ascospores (19·0–29·0 μm), so far known in this genus. Moreover, each ascospore has two polar germpores, whereas *A. strumarium* has only one

Achaetomium indicum spec. nov. (Figs. 1–4)

Coloniae in agro hordeaceo sat rapide crescentes, mycelio copioso leviter rosaceum. Ascocarpi superficiales, aggregati, raro dispersi, ostiolati, fixi substrato perhyphas rhizoideas, 300·0–335·0 μm × 222·0–235·0 μm.