during 1986 and 1987 at various locations in groundnut Zones I and m of the All India Coordinated Research Project on Oilseeds (AICORPO). In Zone I it recorded pod yields M.2% higher than JL 24 and 16.8% higher than AK 12-24. In Zone m, under tainted conditions, it recorded pod yields 14.3% higher than JL 24 and 28.8% higher than AK 12-24 (Table 2). In adaptive trials conducted in Ajmer division, Rajasthan, in the 1988 rainy season, RG 141 yielded 1.65 t pods ha-[1] in comparison with the 1.381 ha' of JL 24 and 0.981 ha[1] of AK 12-24. In on-farm demonstrations during the 1988 rainy season it gave 1.80 t ha-[1] pod yield, which compared favorably with the 1.301 ha-[1] pod yield of a local cultivar.

Analysis of 4 years of data from agronomic trials with RG 141 revealed that it gave, on an average, 500 kg ha-[1] more pod yield in advanced (mid-June) sowing (3465 kg ha-[1]) dun from mid-July sowing (2965 kg ha-[1]). In the advanced sowing it gave pod yield 28.2% higher than JL 24 and 25.4% higher than AK 12-24, thus showing its superiority in both advanced- and normal-sowing situations.

The variety RG 141 has shown better resistance to late leaf spot, collar rot, rust, and bud necrosis diseases over seasons/locations than either JL 24 or AK 12-24. The variety matures in 110-115 days. Pods are medium sized with a shelling percentage of 74.0. Seeds are medium sized widi pale pink testas and 50.8% oil content.

Performance of Introduced Confectionery Lines for Yield and Quality Characteristics at ICRISAT Center, India

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About a third of the world's groundnut production is consumed in the form of edible nuts. Large-seeded groundnuts are preferred for direct consumption. Development of large-seeded varieties with improved seed quality characteristics is an important breeding activity at ICRISAT Center. India and at North Carolina State University (NCSU), Raleigh, USA. We obtained 65 large-seeded advanced breeding/germplasm lines from NCSU to broaden the genetic base of our confectionery breeding program at ICRISAT Center. These lines were evaluated along with Chandra, a large-seeded confectionery cultivar released in India, and ICRISAT-bred lines for yield and seed quality characteristics in the rainy and postrainy seasons of 1988-91 at ICRISAT Center.

The NCSU lines were assigned ICGV (ICRISAT Groundnut Variety) numbers. Except for ICGV 89236 and ICGV 90213 which belong to subsp *fastigiata*, all belong to subsp *hypogaea*. The introduced lines, in general, possess uniform, elongated, medium-sized, constricted pods, and tan-colored seeds. However, most of them were low yielders and had lower 100-seed masses than Chandra and ICRISAT-bred lines. After evaluation in four successive rainy and postrainy seasons, we identified five lines, ICGV 88424 (NC Ac 18420), ICGV 88429 (NC Ac 18437), ICGV 88438 (GP NC 343 x NC 17367), ICGV 88448 (NC Ac 18437), and ICGV 89235 (NC 18016), that are either superior to, or comparable with Chandra in pod yield, shelling percentage, 100-seed mass, and oil and protein contents (Table 1). The seed quality of these lines, as measured by their oleic (O)/ Linoleic (L) acid ratio, is better than that of Chandra and locally bred lines at ICRISAT Center. These lines have now been included in the International Confectionery Groundnut Varietal Trial (ICGVT) for wider testing. The fourth ICGVT, which includes ICGVs 88424, 88429, and 88438, has been sent to 19 countries. Results of the trial are awaited. ICGV 88448 and ICGV 89235 are included in the Fifth ICGVT, and this set with 24 entries is now available to our cooperators.

Table L Mean performance of five introduced confectionery groundnut lines at ICRISAT Center, rainy and postrainy seasons, 1988-199L

Genotype	Pod yield (tha-i)	Shelling (%)	100-seed mass (g)	Oil (%)	Protein (%)	O/L ratio
ICGV 88424	**3.02**	**66**	**75**	**49**	**22**	**2.4**
ICGV 88429	**2.79**	**66**	**75**	**48**	**21**	**1.9**
ICGV 88438	**2.82**	**66**	**86**	**49**	**22**	**2.3**
ICGV 88448	**3.32**	**65**	**80**	**48**	**23**	**2.2**
ICGV 89235	**2.24**	**68**	**84**	**48**	**23**	**2.3**
Control						
Chandra	**2.57**	**66**	**74**	**47**	**23**	**1.5**

Lines with high average performance, stable seea mass, and high O/L ratio have been crossed with locally bred confectionery lines. These are ICGV 88424, ICGV 88438, ICGV 88448, ICGV 88430 (NC Ac 18440), ICGV 88442 (NC 6 x Early bunch), ICGV 89235, and

ICGV 90213 (NC Ac 17921 x NC 8C). Of these, ICGV 90213 was a better parent than the others in producing a wide range of segregants in early generations. Some of the progenies derived from such crosses are now in yield trials at ICRISAT Center.

Induced Mutants of Taxonomical Importance in Groundnut

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The cultivated groundnut, *Arachis hypogaea* L., has been divided into two subspecies based on several morphological differences. The subspecies *hypogaea* is further subdivided into variety *hypogaea,* Virginia type, and variety *hirsuta,* Peruvian runner type. The Virginia type is characterized by either erect (Virginia bunch) or prostrate (Virginia runner) growth habit. The subspecies *fastigiata* Waldron is further subdivided into variety *fastigiata,* Valencia type, and variety *vulgaris,* Spanish type (Krapovickas 1968). Two inconclusive theories have been put forward to explain die possible origin of the two subspecies (Singh 1988). First, it is possible that *A. hypogaea subsp fastigiata* evolved from an amphidiploid hybrid between A and B genome species, and *A. hypogaea* subsp *hypogaea* subsequently evolved through a mutation in subspecies *fastigiata* that produced occasional vegetative branches in an otherwise sequential branching pattern. Alternatively, subspecies *hypogaea* and *fastigiata* may have evolved from different A and B genome species combinations.

The mutants isolated in our laboratory lend indirect support to the theory of monophyletic origin of the sub-

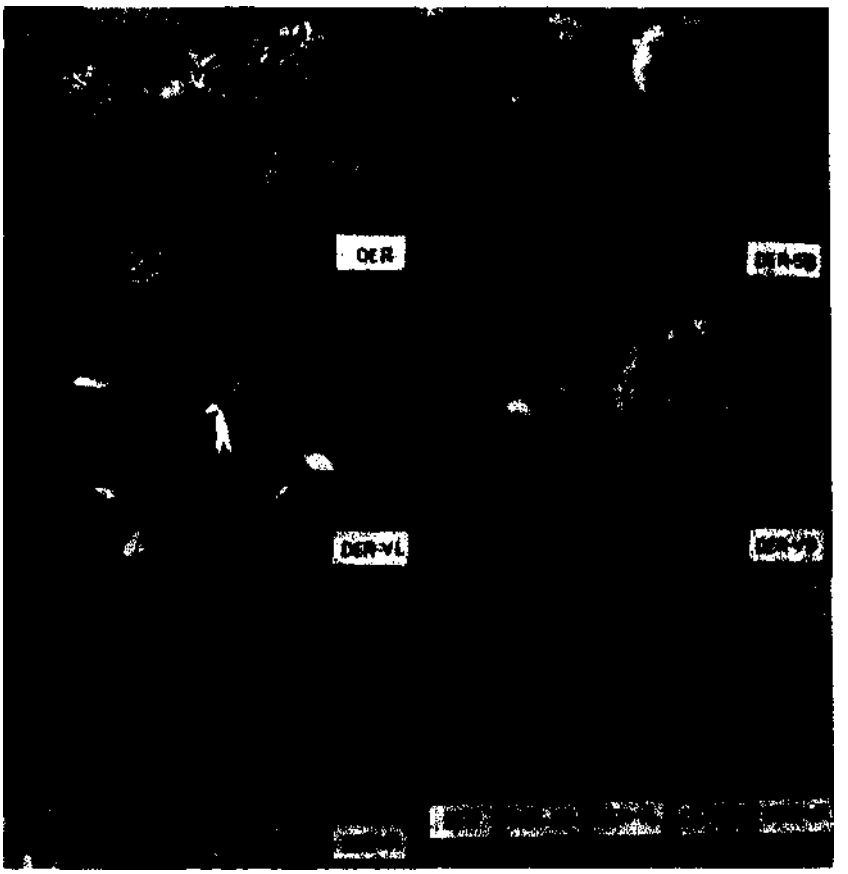

Figure L Growth habit and pod and seed features of mutants derived from ethyl methane suUbnate-treated Dharwad Early Runner (DER) groundnut genotype.