[Editor's comment: The breeding value of such an inferior mutant as "FUSHI" may be compared with the experience of using a chlorophyll deficient and other inferior peanut mutants in cross breeding at BARC Bombay, from which several improved peanut cultivars were derived, such as TG3, TG4, TG17 (ref. Mutation Breeding Newsletter No. 12, p.14)].

Utilization of induced mutations for groundnut breeding in Uganda

Groundnuts (Arachis hypogaea L.) are on high demand in Uganda. There is, therefore, an urgent need to improve groundnut yields through breeding. The main objectives besides yield are the following:

1. To improve disease resistance:
   (a) rosette virus transmitted by aphids (Aphis craccivora);
   (b) leafspot caused by Cercospora arachidicola (early) and Cercosporidium personatum (late).

2. To advance the maturity period of high yielding varieties so as to fit better into the rainfall pattern of the main growing areas.

3. To improve seed uniformity, seed size and quality (protein, oil).

4. To reduce plant height by shortening the internodes so as to have more flower production near the ground.

For mutation breeding three erect groundnut cultivars were used, "Roxo" a recommended commercial variety; "Red Beauty (Bl)" a recommended local variety and "No. 534" a tan skinned variety. Seeds of the three varieties were irradiated in 1976 at the FAO/IAEA Agricultural Section of the IAEA Laboratory Seibersdorf, with 1500 rad of fast neutrons (Nf) or 20 krad of ^{60}Co gamma rays. The pedigree method of selection was used until M9. During 1985 and 1986, seven mutant selections of "Red Beauty" and one from "Roxo" were tested in replicated yield trials. Results are given in the Table.

Mutant line or variety (check)		Yield in shell kg/ha	Wt. of 100 seeds (g)	Shelling % (average)
Bl γ-20	32/25/11/6/1	1070.5	39.75	69.8
	32/25/11/1/32	1372.1	40.25	67.6
	32/25/44/9/18	1049.2	37.50	70.2
	32/25/11/6/19	1029.5	39.25	70.4
	32/25/44/9	1060.7	38.75	74.0
	32/25/9/2	1216.4	38.00	64.3
Bl Nf	13/17/31/2/21	1152.5	40.75	68.6
Bl (check)		1024.6	41.75	73.9
Roxo (check)		1645.9	45.25	56.7

On the basis of plot yields some of the "Red Beauty" mutant lines outyielded the parent but not the commercial variety "Roxo".

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