

mutation frequency ranging from 2.24 to 22.85% was observed. Screening of M_2 and of subsequent generations yielded a broad spectrum of mutations. Some of the mutants are agronomically useful. Among them, mutant "T₂14" resulting from 25 kR gamma rays + UV, was found to possess better germinability (+15%), earliness (5 days) and high yield during both rainy and post-rainy seasons in 1986 and 1987, when compared with the parent variety "Bragg". The mutant has smaller seed-size (TGW 125 g) than the parent (145 g). In soybean, large-seeded varieties were reported to have poorer seed germinability [2]. Thus, the better germinability of the mutant might be related to its reduced seed size. Seeds of the mutant show a light brown colour of the hilum in contrast to the black hilum of "Bragg". In other characters the mutant is similar to "Bragg".

The mutant should have potential for commercial cultivation in India. For confirmation of its agronomically superior performance, it is undergoing national evaluation in multilocal trials under "All India Co-ordinated Research Project on Soybean (ICAR)". The strain has been named "NRC-2".

REFERENCES

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Induced mutation altering flower colour in Chrysanthemum

XA0201041

"Flirt" is a double Korean type, small flowered Chrysanthemum of red colour. Rooted cuttings were treated with 1.5 - 2.5 krad gamma rays. A chimeral flower colour mutant was detected after 1.5 krad treatment. After purification through repeated cuttings a mutant clone was developed and released as commercial cultivar "Man Bhawan". It produces bi-coloured flower-heads: yellow and red at full bloom stage becoming completely yellow later on. By chromatography, 6 pigment spots could be identified in the variety "Flirt" but only 5 in the mutant, violet (hRf 69.83) being absent. Spectrophotometric analysis of petal extracts showed presence of three peaks in both "Flirt" and "Man Bhawan" at full bloom stage but only two in "Man Bhawan" at fading stage.

From: DATTA, S.K., (National Botanical Research Institute, Lucknow 226001, India). J. Nucl. Agric. Biol. 16 (1987) 217-218.

"Hari" a mutant cross derived rice variety released in India

TR-RNR-21 is a derivative from a cross between "IR-8" and "TR-5", the latter being a N_f -induced dwarf mutant of the salt tolerant variety SR-26-B. In initial yield evaluations at BARC during 1972-78 it gave higher yields of 54% in monsoon season and 19% in dry season over "Jaya" and compared favourably with "IR-8" and "Sona".



During 1975-80, trials were conducted by the Andhra Pradesh Agricultural University (APAU), Rajendranagar and the All India Co-ordinated Rice Improvement Project (AICRIP), at Rajendranagar, Hyderabad. In these trials TR-RNR-21 was compared with "Pankaj", "Jaya", RP-4-14, "Sona", "Surekha", RNR-323341 and "Prabhat". Compared with the highest yielding check and all the seven checks combined, overall average yields of TR-RNR-21 were higher by 10.1 and 19.8% respectively.

Since 1981, TR-RNR-21 was included in minikit trials of Andhra Pradesh State. Results from over 90 locations of the Telangana region show that mean grain yield of 3843 kg/ha was 19% more than the yield of the local checks. In view of its consistently superior performance, TR-RNR-21 was released as 'Hari' in 1987 for general cultivation in the irrigated transplanted conditions of the Telangana region of Andhra Pradesh, excepting the endemic gall midge prone areas.

'Hari' is a medium duration variety maturing within 135-140 days. It is a semi-dwarf (93 cm), erect, compact and non-lodging type with dark green foliage; anthocyanin pigment absent; grain long (10.1 mm), slender with kernel length/breadth ratio of 3.54; kernel flinty, white, translucent and non-glutinous; white belly absent; TGW 25.2 g; protein content 7.1%; bulking, milling and head recovery - 80, 74.5 and 68% respectively; cooking quality good. It is not affected seriously by blast, tungro virus, sheath blight and brown leaf spot diseases and green leaf hopper, leaf folder and stem borer insect pests. A characteristic of this variety is that the flag leaf is long, stays far above the panicle and remains green till maturity.

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Multifoliate leaf mutants of mungbean and urdbean

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Both mungbean (Vigna radiata (L.) Wilczek) and urdbean (Vigna mungo (L.) Hepper) are characterized by trifoliate leaves.

In the M₂ of mungbean cultivar "Pant Mung-2" after treatment with 40 kR gamma rays a mutant was identified in which each leaflet is substituted by a trifoliate leaf, giving 9 or even more leaflets. The mutant was established as a true breeding line. The character is controlled by a single recessive gene which was designated mfl.

In urdbean, the same type of mutation was detected in the M₂ of the cultivar "Netiminumu" after treatment with 50 kR gamma rays. Also this mutant character (designated mfl) shows monogenetic recessive inheritance.

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Gamma ray induced somatic mutations in rose

XA0201044

Budwood of 32 rose cultivars (Rosa spp.) was exposed to 3-4 krad of gamma rays and eyes were grafted on Rosa indica var. odorata root stock. Radiosensitivity with respect to sprouting, survival and plant height, and mutation frequency varied with the cultivar and dose of gamma rays. Somatic mutations in flower colour/shape were detected as chimera in 21