Mutation breeding of barley at Krasnodar

Chemical mutagen application gave good results in breeding for earliness, short culm and winter hardiness. A very early mutant "54M17" was obtained from treating "Regia" with NEH. It was crossed with a powdery mildew resistant mutant 52M1 from "Vogelsanger Gold" treated with NDH. A cold resistant mutant tolerating -13°C for 24 h is "KNIISKh 60 M_1" (from EI treated "Cyclon") and cold resistance is also high in a line "KNIISKh 249" obtained from a cross involving "Paoly", mutant 52M1 and "Novator".

From: SHEVTSOV, V.M. (N.I. Institut Sel'skogo Khozyaistva imeni Luk'yanenko, Krasnodar USSR). In: "Advances in Agricultural Science", Moscow Nauka 1987; PBA 58 No. 5755 (1988).

In-vitro culture performance of rice cultivars

Four California rice varieties (L-202, S-201, M-202 and Calmochi 101) and one Texas rice (Lemont) were tested for embryogenic calli produced from mature seeds. Of these varieties S-201, M-202 and Calmochi 101 derived from mutant crosses as follows (mutant parent underlined).

S-201	(Calrose 76 x Cs-M3) x S6
M-202	(IR8 x Cs-M3) x (10-7 x M-101)
Calmochi 101	Tatsumi mochi x (M7 x S6)

S-201 was the only cultivar that produced many shoots from virtually all portions of the embryogenic callus. M-202 produced the highest no. of shoots at the upper level of hormone (BAP). Regeneration of Calmochi 101 was rather poor. The frequency of albino shoots was also different for the varieties tested:

0.027	for L-202	0.00	for Calmochi 101
0.016	for S-201	0.045	for Lemont
0.037	for M-202		

Albino shoots were found only with 0.1 mg l^{-1} BAP in the regeneration medium, except for Lemont which produced albinos without cytokinin.

From: OARD, J.H. and RUTGER, J.N. (Dept. of Agronomy and Range Science, University of California, Davis CA 95616, USA). Crop Science 28 (1988) 565-567.

Modification of barley powdery mildew resistance controlled by the gene Ml-al2

The barley line Sultan 5 carries resistance gene Ml-al2. Seeds were treated with EMS or NaN_3. Among 10381 M_1-spike progenies inoculated with Ml-al2 a-virulent isolates of Erysiphe graminis, 25 segregated for less resistant infection type. Among 10 mutants analyzed, 9 had mutant allels of Ml-al2 and one had a recessive mutant gene in a different locus acting as a "suppressor" of Ml-al2.

From: TORP, J. and JÖRGENSEN, J.H. (Agric. Res. Rep. Risö National Lab., 4000 Roskilde, Denmark). Canad. J. of Genetics and Cytology 28 (1986) 725-731; Rev. of Plant Path. 67 (1988) 133.