

# Genetic Variability in Indian Mustard (*Brassica Juncea*) with Special Reference to Erucic Acid and Oil Content

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**Abstract**—Awareness about the nutritional quality of the oil and meal and this has shifted the emphasis towards breeding for high yield with quality traits in rapeseed mustard. Fats and Oils are one of the important components of our diet. They provide the most concentrated source of energy and also help in absorption of certain vitamins viz. A,D,E and K. Fatty acid composition of an oil is extremely important as the presence or absence of different fatty acids and their relative amounts determine the nutritional quality of the oil. High amounts of saturated fats like palmitic fatty acid is undesirable due to elevate blood cholesterol levels. Presence of polyunsaturated fatty acids i.e. linoleic and linolenic acid is good for health, they prevent serum cholesterol accumulation. However, high amounts of linolenic acid (>14%) decreases the shelf life of oil. Indian mustard cultivars have high amounts of nutritionally undesired components, erucic acid. Erucic acid is a mono-unsaturated omega-9 fatty acid. Erucic acid inhibits the synthesis of this long chain fatty acids lead to inhibition of polyunsaturated fatty acids. Most of Brassica varieties cultivated in our country containing high level of erucic acid. Efforts are being made to develop varieties which contain less than 2 per cent erucic acid through biotechnological and breeding programme. Therefore, the present investigation was carried out to evaluate the oil and erucic acid content using gas chromatography. 15 genotypes of mustard cultivated in India were screened for erucic acid and oil content. The oil content ranged from 32.67 to 41.93%. Maximum oil content i.e. 41.93% was observed in RSPR-01 genotype. However, genotype PM-21 had showed minimum oil content. Significant differences ( $p \leq 0.05$ ) were observed among the brassica juncea genotypes for the erucic acid content. Erucic acid content ranged from 0.80–49.00% in oil. whereas maximum erucic acid content were recorded in Kranti (49.00%) followed by RSPR-03, Nav Gold (48.70%) and RSPR-01 (43.77%) respectively. Minimum erucic acid content were noted in PM-24 (0.80%) and PM-21, PM-22 and Pusa Karisma showed significantly at par. Significantly variability for the erucic acid and oil content were observed in the present study can be utilized in crop improvement programme to develop low erucic acid content brassica Juncea genotype with maximum oil content.