

GENOTYPE, ENVIRONMENT AND GE INTERACTION
EFFECT ON SOYBEAN OIL COMPOSITION

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ABSTRACT

Changing the content of the five major soy-oil fatty acids is important to enhance food, fuel and other applications of soybean oil. In addition to genetic effects, the growth environment can significantly affect oil composition. This study addressed the influence of location, planting date, and irrigation on the fatty acid composition of soybean seed oil in genotypes with normal and modified fatty acid levels and evaluated stability of fatty acid composition across environments for the same set of genotypes. Irrigation consistently affected the content of saturated fatty acids. Significant interactions of planting date with locations and genotypes were found for all fatty acids. Genotypes differed in stability of fatty acid profile across environments. Therefore, both mean fatty acid content and stability of fatty acid profile are important traits to evaluate in breeding soybean genotypes with enhanced fatty acid composition adapted to a wide range of growing conditions.