Physicochemical and quality characteristics of canola seed oils from different genotypes

Abstract

Traditional canola cultivars contain high amounts of erucic acid and glucosinolates. Therefore, one of the main breeding objectives is reduction of the anti-nutritional components content (erucic acid and glucosinolates) from canola. Due to this fact, the objective of the current study was to evaluate the quality of canola oil from different genotypes (2A, 11A, 7A, Serw 4 and 9A) and to assure their safety for human and animal consumption. In our study, all canola oil genotypes exhibited different physicochemical properties due to their fatty acid composition. All the oils indicated desirable quality as they had very small percentages of free fatty acids, high values of unsaponifiable matter, and low values for oxidative stability tests which were under the limits allowed in the regulations. 11A, Serw 4 and commercial canola genotypes are rich in unsaturated fatty acids namely oleic acid (C18:1), linoleic acid (C18:2; n-2) and linolenic acid (C18:3; n-3) respectively. 11A and Serw 4 canola seed oil genotypes exhibited the lowest contents of erucic acid among all oil samples. From the present study, it can be concluded that genotypes 11A and Serw 4 canola oil were better than 2A, 7A and 9A genotypes and could be recommended as a basis for further genotype studies to assess the basis for breeding canola genotypes low in erucic acid**.**