Abstract
Since most of the soybean [Glycine max (L.) Merr.] cultivated in Argentina is transgenic and processed in the agroindustry, there is a growing concern about seed composition of non transgenic genetic resources. An efficient tool to improve the proportions of the main fatty acids (FA) is the study of the genetics correlations between the lipidic seed composition and agronomical variables, as a basis for selection. The aim of the study was to determine the relationships between the main FA (oleic, linoleic, linolenic, palmitic and stearic) and grain yield. A total of 22 advanced (F6) and not genetically modified soybean lines were evaluated in Marcos Juárez (Córdoba) and Villa Mercedes (San Luis), Argentina, using a RCBD with two replicates per site. Grain yield, seed weight, oil content and FA contents were determinated. To study the genetically determined correlations between variables, principal components analysis was carried out for the residues of a genotype×variable factorial model for the across-site means, centered on mean trait effects. Results were shown in biplots that permit to identify genetic correlations between variables, to compare genotypes on a multivariate bases, and to visualize associations between genotypes and variables. The use of this method allowed the selection of genotypes with an improved fatty acid profile and higher grain yield.