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ABSTRACT BOOK

Growth cycle modelling: a genotypic-trait to rate environmental adaptability of strawberry

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The yield of crops with an extended harvest season, such as strawberry (*Fragaria × ananassa* Duch.), is not only a function of the genotype but mainly also of the annual climatic environment and the genotype x environment interaction. This entails plant substantial yield fluctuations, and, therefore, considerable seasonal scheduling modifications of the cultivar fruit amount. Discovering the genetic traits, which underlie specific environmental plant adaptability, requires to identify or develop growing indexes and curves, to use and measure them on reference accessions and to evaluate their time stability. In three different productive cycles, in the same environment, with the same plant type (tray-plant) grown in the same nursery (in-situ), different June-bearing and everbearing genotypes were tested during the whole cropping season using a climatic monitoring, and measuring quantitative and qualitative yield parameters. Earliness Ripening Index (ERI) and Growing Degree Days (GDD) thermic summation were parameters identified and used to model the growing cycle in order to describe the harvest time and harvest patterns. The diversity of data recorded for/from the different accessions, associated with the diversity of the relative values during the three cycles, allows to hypothesize a strong genetic influence on the ability to environmentally adapt. This impacts both in terms of quantity and quality the strawberry production, as well as the profiling of the maturation curve. This analyses and profiling allow to identify the best interaction genotype x environment toward the optimization of the strawberry production.

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