

# XIV Jornadas de Genética e Biotecnología



## IV Jornadas Ibéricas de Genética y Biotecnología

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# Book of Abstracts

## Genomic Template Stability assessed in almond trees of cv. 'Vairo' treated with biostimulants and boron-based fertilizers

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Almond is highly produced in the NE of Portugal, where late frosts during flowering, low precipitation, and high temperature in summer affect productivity and quality. In addition to late-flowering cultivars, plant biostimulants (PBs) and boron-based fertilizers have been used to improve cell division, vegetative growth, photoassimilates rate, and nutritional status of almond trees. Despite the wide use of PBs in multiple food crops, the scientific evaluation of their effects is scarce. Our team previously analyzed the effects of PBs and boron-based fertilizers in the mitotic cell cycle of almonds and verified the intensification of cell division without significant anomalies. This work focused on the molecular characterization of three-years-old almond trees of cv. 'Vairo' was treated with two PBs (based on seaweed extract and free amino acids) and two boron-based fertilizers (applied on soil and leaves) in a rainfed orchard (NE Portugal) using leaf samples collected through the summer of 2019 in treated trees. Three monthly applications of individual PBs based on seaweed extract (AN), amino acids (AA), and boron ethanalamine (BE) and a unique application of boron on the soil (BS) were made. The molecular stability was assayed by comparing with untreated trees using ISSR, RAPD, IRAP, REMAP, and iPBS markers. The molecular data achieved in 'Vairo,' under the edaphoclimatic conditions where it was studied, revealed that AA, BE, or BS treatments induced higher molecular stability, corroborating our previous cytogenetic results.

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