Preliminary results in the Iberian Peninsula of Pilowred®: a new low-vigour-conferring rootstock resistant to nematodes for almond

María José Rubio Cabetas, CITA, Spain; mjrubioc@cita-aragon.es (presenting author)
Circe María Gómez Aguas, CITA, Spain
María Teresa Espiau Ramírez, CITA, Spain
Beatriz Bielsa, CITA, Spain

The almond crop [*Prunus amygdalus* (L.) Batsch, syn *P. dulcis* (Mill.)] has recently introduced new planting systems allowing more sustainable and efficient management. Vigour control nowadays is a major trait within rootstock breeding programmes, together with resistance to biotic and abiotic stresses. In this work, we compared the results of a new almond x peach rootstock, Pilowred®, released by Centro de Investigación y Tecnología Agroalimentaria de Aragón (CITA) in different trials including five commercial rootstocks: Monegro®, Garnem®, Rootpac® R, Rootpac® 20 and Rootpac® 40. Pilowred® rootstock is resistant to root-knot nematodes (RKN) as is Garnem®; however, Pilowred® exhibits greater water use efficiency than Garnem®. Trials were established in six locations throughout the Iberian Peninsula with different planting distances: In Portugal, Beja (6 x 3.5 m); in Spain, Huelva, (6 x 3 m), Córdoba (6 x 1.25 m), Teruel-1 (7 x 6 m), Teruel-2 (7 x 7 m), Zaragoza-1 (6 x 4.4 m), and Zaragoza-2 (6 x 5 m). The cultivars used in each trial were chosen according to their flowering time (late blooming: Soleta®, Isabelona® and Lauranne®; extra-late blooming: Vialfas® and Mardia®) and combinations were selected based on specific edaphoclimatic conditions. Trees were established in 2020 and 2021. The trunk cross-sectional area (TCSA) was assessed over 4 years. The results showed statistical differences among the scion-rootstock combinations with Pilowred® and Rootpac® 20 showing lower TCSA. Conversely, Garnem® exhibited greater growth and variability compared to other rootstocks, suggesting a differential response depending on the cultivar. Notable differences in growth were observed among trials, with Lauranne® and Mardia® showing higher TCSA values across several rootstocks. The differences among low-vigour rootstocks will be discussed in response to planting distance and genetics of the different rootstock-scion combinations.

Low vigour, rootstock breeding, root knot nematodes, water use efficiency