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Combining ability analysis for root yield in ashwagandha (Withania somnifera (L.)

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Combining ability analysis was carried out for days to 50% flowering, Plant height (cm), No. of primary branches per plant, No. of secondary root per plant, root girth per plant (cm), root length per plant (cm), fresh root yield per plant (g), dry root yield per plant (g), No. of secondary root per plant, No. of berries per plant and biological yield in a systematic set of crosses involving 3 lines and 6 testers. The analysis of variance of combining ability for most character revealed significant variability among parents, cross, Line x Tester, and parents vs. crosses. Among the line RAS-7 was found best combiner for days to 50% flowering, No. of primary branches per plant, root girth per plant (cm), root length per plant (cm), fresh root yield per plant (g) and No. of berries per plant where as, RAS-15 showed best general combiner for plant height (cm) and IGAU-1 for dry root yield per plant (g) and for No. secondary root per plant. Among the tester MWS-310 and Poshita were rate as best general combiner for root yield per plant (g). The cross RAS-7X Poshita and IGAU-1XWS-90-111 recorded significant heterosis for fresh root yield per plant (g) and its contributing traits. The crosses RAS-15XMWS-310 and RAS-7X Poshita recorded significant heterosis for dry root yield per plant (g). This cross may be considered for exploitation for the production of root yield in ashwagandha. This might be due to favourable dominant gene, over dominance or epistataic gene.

Biography

Alice Tirkey has completed her PhD in Genetics and Plant Breeding from IGKV, Raipur (C.G), India. She is working as Scientist in College of Agriculture, IGKV, Raipur (C.G), India. She has worked in rice quality, hydrid development, screening of drought in rice crop of safflower and presently working in crop improvement in medicinal and aromatic plants viz. screening of quality and quantitative traits and developing hybrids. She has good publication in all the above said crops in reputed journal and has published more than 15 papers.

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