RESEARCH ARTICLE

CORRELATION AND PATH ANALYSIS IN ASHWAGANDHA (*WITHANIA SOMNIFERA* L.) FOR DRY ROOT YIELD

S. Venugopal*, M. Padma, M. Rajkumar, N. Seenivasan, P. Saidaiah and G. Sathish

Sri Konda Laxman Telangana State Horticultural University, Rajendranagar, Hyderabad
Email: venugopal.sripathi@gmail.com

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Abstract: The experiment was laid out in a completely Randomized Block Design with 29 ashwagandha accessions as treatments during *Kharif*, 2018 at Medicinal and Aromatic Plant Research Station, Sri Konda Laxman Telangana State Horticultural University, Rajendranagar, Hyderabad. Each treatment was randomly replicated thrice. The results on genotypic and phenotypic correlation reveal that mostly genotypic correlation coefficient is comparatively higher than the intensity of phenotypic correlation coefficient. This indicates less influence of environment in association studies. The positive and significant correlation was observed between dry root yield per plant with root diameter, main root length, leaf length, starch estimation, leaf width, fresh leaf weight, dry leaf weight, days to flower initiation, plant height and number of secondary roots per plant. Direct selection based on these traits would result in simultaneous improvement of aforesaid traits and dry root yield per se in ashwagandha. Although correlation coefficients indicate the nature of association among the characters, path analysis splits the correlation coefficients into measures of direct and indirect effects, thus providing an understanding on the direct and indirect contribution of each character towards yield. From the foregoing discussion, it can be concluded that main root length, root diameter, leaf weight and days to flower initiation had positive correlation and positive direct effect on dry root yield per plant. These are identified as superior yield components. Hence, the genotypes which exhibited better performance for these characters can be used in further improvement of ashwagandha.

Keywords: Ashwagandha, Phenotypic correlation, Genotypic correlation, Path analysis, Dry root yield per plant

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*Corresponding Author

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