FUNCTIONAL ASSOCIATES IN ROOTING AND SURVIVAL OF FOLIATED APICAL BUD CUTTING OF GUDMAR
(*GYMNEMA SYLVESTRE* R. BR.)

POOJA YADAV[1] AND G.S. YADAV[2]*

[1]*Department of Genetics and Plant Breeding, Rajmata Vijayraje Scindia Krishi Vishwa Vidyalaya, Race Course Road, Gwalior-474002, Madhya Pradesh, India.*
[2]*Puneet Sadan, Lokmanya Tilakward No.37, Khalepara Kangoli, Sub Post Dharampura No.2, Jagdalpur 494001, Chhattisgarh, India*
*Corresponding author email: yadavdrgs@gmail.com

ABSTRACT: *Gymnema sylvestre* R. Br. is the most important medicinal species of family Asclepiadaceae regarded as one of the plants with vested anti diabetic properties. The plant is fairly well used for controlling obesity in the form of *Gymnema* tea, associated with the group of acids termed as gymnemic acids. It has been observed that there could be a possible link between obesity, Gymnemic acids and diabetes. The leaves chewed confers a remarkable property of paralyzing the taste of glands for few hours against sweet and bitter taste, hence called "Gurmar" or "Gudmar" or "Sugar destroyer" and is utilized to reduce blood glucose. The experiment was conducted at Kangoli, Dharampura, Dist. Bastar (Jagdalpur), Chhattisgarh, India at 19° 5' 29" N latitude, 81° 59' 20"E, 553 m AMSL during March-June 2018. Propagation of *G. sylvestre* through foliated apical bud cutting adduced 96.15 % rooting and 96.92% survival under intermittent mist conditions. The different associates in rooting of foliated apical bud cuttings of *G. sylvestre* surmised different magnitude of positive and negative correlation. Out of 45 combinations of independent and criterion associates, 14 combinations of significant associates, adjudicated regression function between the independent and criterion variables of rooted foliated apical bud cuttings. The Fisher's ratio for regression between the different associates considered in the present investigation conferred different level of significance. The rooting percentage in *Gymnema sylvestre* significantly decreased with the increase in length of the cuttings following the equation of $Y=42.17-0.335X$. Likewise, the rooting percentage also decreased with the increase in the number of leaves per cutting having the regression function of $Y=28.875-0.2275X$. The length of the longest roots for the adduced value of rooting percentage followed the negative trend with the equation as $Y=31.695-0.2349X$ in the foliated apical bud cuttings. The number of leaves being dependent variables significantly increased with the increase in the length of the apical bud cuttings predicting the equation $Y=0.3567+0.6671X$ having positive trend between the associates. The regression line predicted the formula for the weight of single leaf in foliated apical bud cuttings of *G. sylvestre* as $Y=0.33712-0.0037X$ with the increase in the length of the cuttings having significant Fisher's ratio of regression between the predictor and predicted variables ($F=8.1408**$, $P < 0.01$, $DF=11$). The mean length of the longest roots significantly increased with the increase in the length of the apical bud cuttings in *G. sylvestre* with diverged scattered points of positive trend where two associates meet following the equation for prediction as $Y=5.3647+0.3759X$. The weight of a single leaf in foliated apical bud cuttings decreased with the increase in the number of leaves, having a negative trend with the equation $Y=0.3779-0.0062X$. The regression function between number of leaves and weight of a single leaf presented appositive trend having the equation for weight of single leaf as $Y=0.1256+0.0192X$ with the increasing number of leaves. The mean length of the roots evinced significant increase with the increase in the number of leaves per cutting presenting the equation for mean length of the roots as $Y=4.4726+0.0126X$ with the significant Fisher's ratio of variance for the regression ($F=155.5831**$, $DF=11$, $P < 0.01$). The regression line divined the formula for the weight of the roots in foliated apical bud cuttings of *G.sylvestre* as $Y=0.9177-1.9481X$ with the increase in the weight of single leaf conferring a negative trend. The mean length of the roots significantly decreased with the increase in the