

PLANT PHYSIOLOGY RECOMMENDATIONS

Sr. No.	Details of Technology
1.	<p>Comparative field study of growth of Safed musli planting materials generated through conventional and tissue culture method (2023)</p> <p>Stevia plant grown under soil less drip (Dutch Bucket) system using half MS media nutrient solution gave higher leaf yield with better quality. In soil less drip system stevia plant can be harvested thrice. Moreover, half MS media nutrient solution was found to better plant growth in terms of primary branches per plant (5.0 at 3rd cutting), chlorophyll content (44.04 SPAD value at 2nd cutting), fresh leaf weight (39.22 g/plant at 2nd cutting; 36.84 g/plant at 3rd cutting), dry leaf weight (8.92 g/plant at 2nd cutting; 7.02 g/plant at 3rd cutting), total leaf fresh (80.49 g) and dry weight (17.24 g) per plant with maximum stevioside (9.01 % at 1st cutting; 10.12 % at 2nd cutting) and rebaudioside A (4.47 % at 1st cutting) content. Furthermore, Half MS media showed less expenditure as compared to other nutrient media.</p>
2.	<p>Standardization of soilless culture in stevia (<i>Stevia reboundiana burtoni</i>) (2022)</p> <p>The conventional Safed musli planting materials (fasciculated root) grown in <i>kharif</i> season exhibited higher survival rate (83.88%), which was 30.61 % higher than tissue culture raised plantlets (64.22%) in field condition. Maximum number of fasciculated root per plant (13.72), length (9.43 cm), girth (2.70 cm), fresh weight (21.31 g) and dry weight (4.48 g) with greater dry matter recovery rate (21.74 %) and saponin content (2.16%) was found in conventional planting materials, which fetched higher net return.</p>
3.	<p>Enhancement of seed germination in Charoli (<i>Buchanania lanzan</i>) (2022)</p> <p>Charoli (<i>Buchanania lanzan</i>) seed should be dipped in water for 24 hours followed by 24 hours shade drying for better germination percentage (61.29 %), germination index (1.26), maximum root length (9.81 cm), root dry weight (11.92 mg) with greater vigour index I (1144.4) and vigour index II (4511.1).</p>
4.	<p>Effect of harvesting stage on morpho-physiological and essential oil constituents of <i>Ocimum spp.</i> (2020)</p> <p>It is advised to harvest the Sweet Basil (Gujarat Anand Basil 1; <i>Ocimum basilic01um</i>) variety at seed setting stage (110-115 DAS) to get higher number of leaves per plant (4949) and methyl chevicol (8.0%) content in oil and to harvest at flowering stage (90-95 DAS) can get higher industrial value in terms of linalool (48.0%) content in oil. Further, it is advised to harvest <i>Closimum (Ocimum gratissimum)</i> species at flowering stage (105-110 DAS) in order to obtain the highest oil yield (0.5%) with 85.8% eugenol content in oil.</p>
5.	<p>Influence of chemicals and PGRs on growth and dry biomass yield of Dodi (<i>Leptadenia reticulata</i> (Retz.) W. & A.) (2016)</p> <p>The farmers of middle Gujarat Agro-Climatic Zone III growing dodi crop in <i>kharif</i> season are recommended to spray urea 2% with potassium chloride (KCl) 2% at 45 and 75 days after planting for getting higher dry biomass yield as well as net return.</p>
6.	<p>Canopy manipulation to study yield and quality in Ashwagandha (<i>Withania somnifera</i>) (2015)</p> <p>The farmers of middle Gujarat Agro-Climatic Zone III growing ashwagandha crop are recommended for canopy manipulation of 50% leaf removal randomly at 75 days after sowing for getting higher dry quality root yield as well as net return.</p>