

## NETWORK OUTREACH TECHNOLOGY FOR TEMPERATE FRUIT CROPS

### Details about the project:

1.	<b>Name of the Center with full address</b>	:	College of Forestry, Ranichauri, Tehri Garhwal, VCSG Uttarakhand University of Horticulture and Forestry, Uttarakhand-249 199
2.	<b>Area : Site / Location (Map/Sites in the map)</b>	:	Horticulture Research Block, Ranichauri 30° 18' N latitude 78° 24' E longitude 2000 m altitude
3.	<b>Name of Agro- ecosystem</b>	:	Temperate
4.	<b>Interdisciplinary team work (Institution Involved )</b>	:	Horticulture (fruit science) and Plant Pathology
5.	<b>Name of Principal Investigator with designation &amp; full Address and contact number</b>	:	Dr. Tejpal Singh Bisht Scientist (Horticulture) College of Forestry, Ranichauri Contact no: 8476004176, 9412938995 Email:tejpalbisht23@gmail.com
6.	<b>Name of the scientist (s) involved</b>	:	Dr. Laxmi Rawat, JRO, Plant Pathology
7.	<b>Objective</b>	:	<ul style="list-style-type: none"> <li>• Productivity enhancement of elite apple cultivars on MM- 106 through high density planting.</li> <li>• Plant architectural engineering for higher productivity in apple.</li> <li>• Multi-location testing of elite walnut, almond and apricot genotypes under medium density.</li> </ul>
8.	<b>Mandate crops</b>		Temperate Fruit Crops namely Apple, Apricot, Almond, Cherry and Walnut
9.	<b>Conservation and maintenance of temperate fruit crop germplasm at the center</b>	:	Conservation and maintenance of germplasm of Apple, Pear, Almond, Peach, Apricot, Cherry, Walnut, Kiwi etc.
10.	<b>Impact of the Project / technology generated / varieties tested</b>	:	Farmers of Hilly region of Uttarakhand accepted the technology generated and varieties tested under the mandate of project.
11.	<b>Revenue generated</b>	:	Aprox. Rs. 50,000.00 per annum
12.	<b>Constraints</b>	:	Since Ranichauri is a voluntary centre, many times human resources and financial crunch become constraint in accomplishing the targets. Besides socioeconomic constraints, there are some agroclimatic problems like occurrence of erratic rainfall (heavy rainfalls, heavy wind and long dry spell) and hail storms during March-April when

		<p>Spring-summer crops are in full bloom. Apart from these, damage by wild animals like monkeys, bear and wild pigs is also becoming a great threat to experimental blocks as well as farmers' field.</p>
13.	<b>Salient research achievements</b>	<ul style="list-style-type: none"> <li>• Evaluation of seven elite apple varieties viz. Golden Delicious, Red Delicious, Red Fuji, Red Chief, Oregon Spur and Golden Spur along with commercial check Royal Delicious on mm106 and seedling rootstock is under way.</li> <li>• Multi-location testing of elite apricot genotypes viz., CITH-1, CITH-2, CITH-3 and New Castle under medium density (5x5m) is underway at two different locations viz., Location-1: College of Forestry, Ranichauri and Location-2: Research and Extension Centre, Kanatal Tehri Garhwal.</li> <li>• Multi-location testing of elite walnut genotypes viz., CITH-1, 2, 3, 4, 5, 6, 7, 8, 9, Hamdan and Suleiman provided by CITH, Srinagar under medium density is ongoing.</li> <li>• Evaluation and planting density standardization of seven Introduced Almond cultivars viz., Non-Pareil, Merced, Primorskij, Pranyaj, Waris, IXL, Makhdoom under medium density planting (4 × 4 m) is ongoing .</li> <li>• Experiment is on-going with one spur type cultivar i.e. Oregon Spur along with one standard cultivar i.e. Red Delicious on MM-106 root-stock and MM111 root-stock trained on advance structures of trainings viz., Cordon system, trellis system, head and spread system, spindle bush system, vertical axis system and</li> </ul>

		<p>modified leader system.</p> <ul style="list-style-type: none"> <li>• Experiment on low cost poly house propagation of walnut has been done through tongue grafting and wedge grafting. The plants propagated through wedge grafting on mid of February showed 80% of survival.</li> </ul>
14.	<b>On going Research Activities</b>	<ul style="list-style-type: none"> <li>• Productivity enhancement of elite apple cultivars on MM-106 through high density planting</li> <li>• Medium density orcharding for higher almond productivity</li> <li>• Plant architectural engineering for higher productivity in apple</li> <li>• Multi-location testing of elite walnut genotypes under medium density</li> <li>• Multi-location testing of elite apricot genotypes under medium density</li> <li>• Survey and mapping of major pest and disease of temperate fruits testing of identified genotypes of temperate fruit crops</li> <li>• Rejuvenation of old unproductive apple orchards</li> <li>• Water Harvesting and moisture conservation techniques for rainfed apple production</li> <li>• Water Harvesting and moisture conservation techniques for rainfed apple production</li> </ul> <p>Low cost poly house propagation techniques in walnut</p>