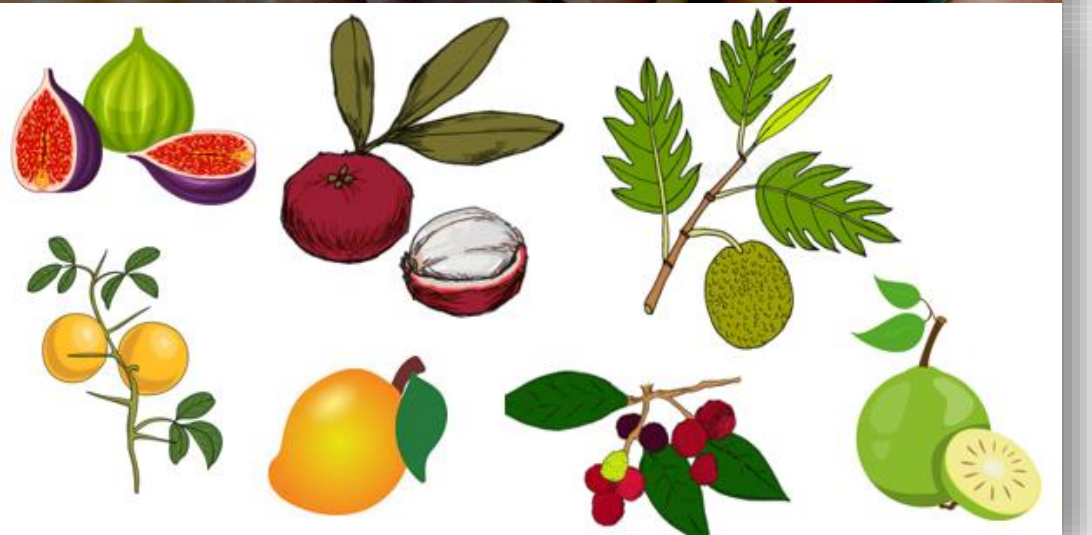

Project title

Developing a community-based model for the cultivation of locally adapted climate-resilient fruit crops and their processing in the Kumaon region of Uttarakhand

Presenter (s)

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and

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1. Introduction to project:

Lead Organisation: **G. B. Pant University of Agriculture and Technology, Pantnagar-263145,U.S. Nagar,Uttarakhand**

Lead applicant: **Dr Omveer Singh, Professor, Horticulture (PHT), Department of Horticulture, College of Agriculture, G. B. P.U.A.T., Pantnagar-263145**

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Other Partners:

Dr Pratibha, Assistant Professor (Horticulture), Department of Horticulture, G. B. P.U.A.T., **Pantnagar**-263145
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Dr Rajani Pant, SMS (Horticulture), **KVK,** Sui, Lohaghat, **Champawat,** G. B. P.U.A.T., Pantnagar-263145

Target areas: The Hill districts of Kumaon region of Uttarakhand i.e. **Pithoragarh and Champawat,**

Targeted Fruit Crops: **Malta, Pear, Kaphal, and other locally adaptable fruits.**

Problem statement and justification:

* Elite germplasm of Malta, Gola pear, and Kaphal are being lost as they are not being properly conserved. Existing orchards are old and senile, and needs to be replaced with new plants.
* Lack of quality planting materials and scientific knowhow about planting of fruit crops.
* Huge decay of locally available fruits at farmer's level, poor value chain;
* Unorganized and inaccessible markets force the farmers to sell their produce to intermediaries at very low prices.

Need of proposed research and development initiatives:

* Nutritional security of low-income families is still a challenge.
* Climate change and lack of awareness has led to decline in yield and area of fruit cultivation.
* Infrastructural limitations, lack of technical knowhow and market dynamics are not favourable for reducing post-harvest losses.

2. Project Objectives:

1. To identify the potential areas for cultivation of targeted fruit crops.
2. To develop quality planting materials of targeted fruit crops.
3. To promote fruit plantation of targeted crops.
4. To impart trainings and awareness on fruit cultivation, nursery production, value addition and processing of fruit crops.
5. Capacity building of selected beneficiaries through distribution of inputs.

3. Methodology and implementation approach(1):

1. Survey of potential areas for cultivation of targeted crops
2. Selection of targeted community: women's groups
3. Development of land use models viz., homestead orchards, school or anganwadi nutrition garden or any other community centre if available.
4. Initial procurement of planting materials of targeted crops from reliable sources.
5. Production of quality planting materials of targeted crops through asexual propagation methods for future supply at our centre.

3. Methodology and implementation approach(2):

1. Training and inputs supply on orchard and nursery establishment.

2. Implementation of agro-ecological cultivation practices; guidance on soil testing, biological control methods (sticky traps, pheromone traps, trichoderma etc), mulching etc

3. Training will be imparted on shelf-life enhancement and development of value added and processed products of targeted fruit crops.

Work-timeline – Minimum three years

First year: Recruitment of personnel, survey of target crops and sites, establishment of propagating structures, selection of targeted community, Training programmes on nursery production, and postharvest management practices, Planting of fruit crops at selected sites.

Second year: Selection of targeted community, training programmes on nursery production, and postharvest management practices, Planting of fruit crops at selected sites and their monitoring, Procurement/distribution of minor instruments/implements/inputs to selected community members.

Third year: Training programmes on nursery production, and postharvest management practices, Procurement/distribution of minor instruments/implements/inputs to selected community members, Planting of fruit crops at selected sites and its monitoring, report preparation.

5.Social and nutrition impact pathway – Project outcomes/Impact:

1. Motivation to grow fruit crops in the kitchen gardens.
2. Increase in availability and intake of fruits in the households.
3. Trained women and youth can start production of planting materials and can also act as nursery managers for providing technical guidance on rootstock production, budding and grafting etc. to other community members.
4. Trained women and youth can start their own small scale fruit processing units by preparation of RTS, Squashes, dried product etc. They can also preserved the fruit pulp and supply to bigger units.
5. Once production of fruits and processed products starts at community level, it can be integrated with govt schemes such as aanganwadi, mid day meal kitchen etc

Slide 6. Environmental and climate advantages

1. Data of soil analysis helpful in formulating measures for increasing nutritional status of soil.

2. Focus on composting of locally available farm residues for improving soil health.

3. Incorporation of biological control methods to reduce the dependence on chemical pesticides.

4. Inclusion of locally adapted climate resilient fruit crops, varieties and management practices to reduce the impact of climate change and climate variability.

5. Conservation of water through techniques like mulching and low cost drip irrigation facilities for increasing water use efficiency.

7. Scaling, sustainability and cost efficiency:

1. Distribution of minor food processing equipments to selected women groups.
2. Establishment of low-cost drip irrigation facility at community level.
3. Distribution of small nursery implements for carrying out various activities.
4. Alignment with ongoing govt schemes at specified sites will be considered for enhancing sustainability and cost effectiveness of project.

8.Budget summary and risk and mitigation strategy

Key Cost Heads	First Year (lacs)	Second Year (lacs)	Third Year (lacs)	Total
Manpower 1. Young Professional -I, 01 no. @ 30000/- month	3.60	3.60	3.60	10.80
2. Skilled Field Worker- 01 Nos. @ 15000/- per month	1.80	1.80	1.80	5.40
Planting materials, field supplies and related items	1.00	0.75	0.75	2.50
Nursery Development (50m^2 automated polycarbonate polyhouse -01 N	3.00	---	---	3.00
Survey & Monitoring, Community mobilization (TA/DA/POL)	2.00	2.00	1.75	5.25
Trainings	2.00	2.00	2.00	6.00
Low-cost drip system and plant protector	---	1.25	1.25	2.50
Basic horticultural tools/implements, and processing equipments	1.00	1.25	1.00	3.25
Miscellaneous including stationery, computer accessories, chemicals and glasswares, minor repair/maintenance etc	1.50	1.50	1.00	4.00
Total (Rs Lacs) =	15.90	14.15	13.15	43.20
Institutional charges @ 10%				4.320
Grand total (Rs Lacs) =				47.320

8. Risk & Mitigation Strategy

Risk:

Mortality of plants, Animal Grazing, natural calamity, Unavailability of raw materials for nursery and processing, water scarcity etc.

Mitigation strategies:

* Gap filling of mortal plants in the initial two years after planting;
* Plant protectors to prevent animal grazing.
* Site replacement in case of natural calamity.
* Procurement of raw materials from other places if not available locally.
* Shift in focus towards fruit types and varieties that are better suited to market demand or local conditions.
* Mitigating drought condition through mulching and low-cost drip irrigation system

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Thanks