



2024-2025

Pakistan Horticulture Development and Export Company (PHDEC) Annual Report

The Pakistan Horticulture Development and Export Company is proud to present its Annual Report for the fiscal year 2024-2025, PHDEC has reinforced its commitment to fostering sustainable growth and enhancing Pakistan's position in the global horticulture market.



WORKSHOP

PAKISTAN HORTICULTURE DEVELOPMENT & EXPORT COMPANY

Directorate of Floriculture (Training & Research), Peshawar, Lahore

WORKSHOP ON CITRUS BLOOD RED

PAKISTAN, SOUTH EAST ASIAN, SOUTH ASIAN AND EUROPEAN COUNTRIES

10-12 May 2023

Opening Remarks & Purpose of the Workshop:

Export Promotion of Horticulture Industry

Mr. Athar Hussain Khushnir CEO PHDEC

Keynote Session:

Mr. Munawwar Hussain Akmal
Director, Training, Agriculture Department, Govt of Punjab

Mr. Shafiqul Ashraf
Secretary, Ministry of Agriculture, Agriculture Department, Govt. of Punjab

Mr. Naveed Ahmad
Assistant Secretary, Horticulture Subdivision, Islamabad

Dr. Muhammad Aslam Khan
Assistant Secretary, Horticulture

Dr. Shafiq Zafar
Chairman, Horticulture Department of Punjab

Dr. Muhammad Aslam Khan
Chairman, Horticulture Department

MARKET INSIGHTS & EXPORT PROSPECTS

Trade Mission in Qatar

Trade Mission in United Arab Emirates (UAE)

Trade Mission in Kingdom of Saudi Arabia (KSA)

Trade Mission in China

Trade Mission in Turkey

Moderator:

Mr. Khawar Nadeem Managing Agent, Products, PHDEC

Mr. Zulqarnain Zaka Joint Agent, Products, PHDEC

Consultative Session on International Certification with Value Adders and Entrepreneur's

Thursday, Jun 12, 2025 11:00 AM (PST)



Foreword

The Pakistan Horticulture Development and Export Company (PHDEC) is presenting its Annual Report for the fiscal year 2024-2025, a period marked by significant strides in advancing Pakistan's horticulture sector. This year, company focus was to empower growers, processors, and exporters through capacity-building initiatives, innovative practices, and strategic international engagements. By addressing critical challenges such as post-harvest losses, compliance with global standards, and climate-induced adversities, PHDEC has reinforced its commitment to fostering sustainable growth and enhancing Pakistan's position in the global horticulture market.

Our activities, ranging from webinars and workshops to trade exhibitions and B2B engagements, have focused on equipping stakeholders with the knowledge and tools needed to produce high-quality, export-ready products. Initiatives like the promotion of solar tunnel dryers for chilies, mango bagging techniques, installation of mango dehydration units and certified nursery development for cherries underscore our dedication to innovation and quality enhancement. The successful export of cherries to China and the expansion of value-added products like potato chips, peach pulp, fruit powders, fruit leather and olive oil highlight the untapped potential of Pakistan's horticulture sector.

We extend our gratitude to our partners, including the Trade Development Authority of Pakistan (TDAP), provincial agriculture departments, research institutes, and international collaborators, for their unwavering support. Together, we are transforming challenges into opportunities, ensuring that Pakistan's horticultural produce meets the demands of premium international markets while uplifting the livelihoods of our farming communities.

Chairman, PHDEC



Note from the CEO

As we reflect on the accomplishments of 2024-2025, I am immensely proud of PHDEC's role in driving innovation, collaboration, and growth within Pakistan's horticulture sector. This year, we have prioritized capacity building, sustainability, and market access, addressing critical issues such as food safety, climate resilience, and supply chain inefficiencies. Our initiatives, including the sponsorship of 50 stalls at the FoodAg Manufacturing Expo 2025 and the launch of the International Certification Initiative, have opened new avenues for Pakistani startups, entrepreneurs, and exporters to compete globally.

The challenges of climate change, pest management, and compliance with international standards remain significant, but our proactive approach—through targeted workshops, webinars, and partnerships—has empowered stakeholders to overcome these hurdles. The success of our cherry exports to China, the adoption of solar tunnel dryers for aflatoxin-free chilies, and the focus on value-added products like dehydrated peaches and potato-based snacks demonstrate our commitment to innovation and economic growth.

Looking ahead, PHDEC will continue to foster collaboration between growers, processors, and exporters, while advocating for infrastructure development and policy reforms to strengthen the horticulture value chain. I extend my heartfelt appreciation to our stakeholders, team, and partners for their dedication to making Pakistan a global leader in horticulture.

Athar Hussain Khokhar
CEO, PHDEC



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Executive Summary

The Pakistan Horticulture Development and Export Company (PHDEC), under the Ministry of Commerce, presents its Annual Performance Report for the fiscal year July 2024 to June 2025. This year marked a transformative period in PHDEC's strategic efforts to modernize Pakistan's horticulture sector, reduce post-harvest losses, promote value addition, and unlock new export opportunities particularly for high-value crops such as mango, cherry, olive, potato, citrus, and chili.

PHDEC through workshops, webinars, seminars, trade expos, and B2B engagements had directly interacted with thousands of growers, exporters, processors, academia, and international buyers. These efforts were focused on three major strategic pillars: i) capacity building and knowledge transfer; ii) export enablement and market access; and iii) innovation and infrastructure Support.

Over 100 capacity building workshops/webinar sessions were organized at nationwide scale on Good Agricultural Practices (GAPs), post-harvest management, pest and disease control, climate change mitigation, value addition, and export procedures.

Through collaborative partnerships with provincial agriculture departments, TDAP, DPP, NLC, research, extension, universities, and the private sector, PHDEC continues to translate policy into practice impacting livelihoods of farming communities across all provinces and strengthening Pakistan's global horticulture footprints.

The following are the main outcomes of the webinars, workshops, and seminars organized in collaboration with supply chain partners of the horticulture crops.

Capacity building sessions on Good Agricultural Practices (GAP)

Over 80 webinars and workshops focus was to promote scientific production, pruning, irrigation, nutrition, and pest control practices.

The crops covered includes mango, citrus, dates, potato, garlic, avocado, onion, olive, chilies, cherry, grapes, floriculture, and mix vegetables.

The mango bagging techniques were demonstrated in Punjab and Sindh to reduce pest damage and improve the appearance of fruit for exports. The bagging adopted at a larger scale (1 million bags) through investment of mango exporters with mango growers.

Cherry orchard GAP training in Gilgit-Baltistan, Kallat/Ziarat, Balochsitan for aligning production with Chinese market standards.

Multiple workshop sessions were held on Mango, Citrus, Dates, Apple, Grapes, Olive, Potato, Onion for promoting improved orchard management practices for producing at international standards.

PHDEC partnered with key research institutes like CRI Sargodha, MRS Shujabad, PRI Sahiwal, NARC, AZRC Umerkot, CEFROT Chakwal, MARC GB for varietal development and quality production.



Post-Harvest Handling & Value Addition

Exclusive training sessions were organized to reduce post-harvest losses at harvesting, post-harvest handling and processing stages of different fruit crops.

Solar tunnels technology is introduced in the Umerkot district of Sindh primarily for chili crop. The same tunnels would be used year around for multiple crops like onion, tomato, ber, banana etc. Training on solar tunnel drying was imparted for its wider adoption by growers and new entrepreneurs.

Training sessions were conducted for the mango and citrus supply chain partners on hot water treatments and waxing techniques used for the relevant export destinations.

The date, banana and cheery crops being emerged as an important venture for export in European, Chinese, Central Asia and Iranian markets. Workshops on these crops were organized to share knowledge and technologies related to harvest, post-harvest and processing operations.

Export Enablement & Market Access

More than 20 specialized sessions were conducted mainly focusing on compliance, quality standards, certification, and logistics to strengthen Pakistan's access to premium markets

The consultative sessions covered certification regimes like GlobalGAP, HACCP, and ISO 22000. Webinars on Phytosanitary certification procedures were organized to improve understanding from both exporting and importing countries perspectives.

The horticulture crops growers and exporters were informed about reefer transportation with technical backstopping from NLC.

Other training topics covered for the exportable commodities on MRL compliance, traceability, and pest-free certification.

Regional Crop Development Initiatives

PHDEC targeted emerging crops and underrepresented regions to promote diversification and inclusive growth on certification of cherries in GB, production potential and global demand of pecan nuts in KP, forest restoration of pine nuts in GB.

Workshops were also organized on IPM, pruning, and certification of olive orchards in Punjab, KP and Balochistan. Session on banana crop held in Tando Allah Yar, Sindh and Othal, Balochistan.

Climate Resilience in Horticulture

Responding to increasing climate threats, PHDEC integrated resilience strategies into field activities covering: i) impact of smog/fog on citrus and potato; ii) use of anti-transpirants, heat-tolerant varieties, and solarization; and climate-smart practices in mango, cherry, floriculture, and chilies.



Innovation and Technology Transfer

PHDEC facilitated the adoption of modern horticulture technologies through demos and capacity building. The Solar tunnel dryers introduced to reduce aflatoxin contamination in chilies. Automated sorters, vacuum packers, cold chain units were showcased at FoodAg Expo, Lahore.

Dehydration units for mangoes are supported via EDF in South Punjab and Sindh. Similarly cold press olive oil extraction units planned for Punjab and Balochistan provinces.

International Trade Promotion & B2B Engagements

PHDEC facilitated direct market linkages and export deals through trade exhibitions and buyer meetings. A Flagship Event on FoodAg Manufacturing Expo 2025 organized by TDAP where PHDEC sponsored 50 horticulture value-added exhibitors. The outcome was USD 15 million in confirmed deals and USD 50 million in pipeline.

B2B meetings organized with Kazakhstan peach importers, export of cherries to China initiated under GACC registration. Meetings held with buyers from EU, Gulf, ASEAN, and CARs.

Innovation and Technology Transfer

PHDEC facilitated the adoption of modern horticulture technologies through demos and capacity building. Solar tunnel dryers for reducing aflatoxin contamination in chilies; automated sorters, vacuum packers, cold chain units were showcased at FoodAg Expo; and dehydration units for mangoes are installed via EDF in South Punjab and Sindh.

Proposed Workplan 2025–2028

Building upon the achievements of FY 2024–25, PHDEC has developed a comprehensive three-year workplan (2025–2028) to institutionalize horticulture modernization, support value chain development, and expand Pakistan's presence in high-end export markets. The main focus will be on follow-up of workshops for cluster development, farmer's registration, value chain interventions, branding Pakistani products in Pakistan and outside Pakistan. The designated PHDEC certified products shelf will be operated through private sector interface to examine product acceptability, quality control, pricing and product competitiveness for exports. The other important focus will be to develop more than 30 projects identified by provincial governments for EDF funding.

Concluding Statement

Pakistan's horticulture potential remains one of its strongest economic levers for export-led growth. PHDEC's performance in 2024–25 demonstrates how strategic interventions, if sustained and scaled-up, can not only bring prosperity to rural areas but also position Pakistan as a vibrant market which deliver premium value, compliant, and competitive agro-products.



About PHDEC

Pakistan Horticulture Development and Export Company (PHDEC) is a sector-specific organization under the Ministry of Commerce, Government of Pakistan. Mandated to uplift the country's horticulture sector, PHDEC functions as a national coordination platform to promote exports oriented quality production, value addition, certification, and supply chain integration across fruits, vegetables, floriculture, and allied products.

Vision

To vitalize a resilient, market-driven, and globally competitive horticulture sector that contributes to Pakistan's economic growth, food security, and environmental sustainability.

Mission

To promote and position Pakistan's horticultural produce in high-end global markets through integrated, inclusive, and innovation-led interventions. PHDEC strives to enhance productivity, reduce post-harvest losses, strengthen market infrastructure, and empower all actors across the horticulture value chain.

PHDEC Team:

Core Team:

1. Mr. Athar Hussain Khokhar, CEO-PHDEC
2. Dr. Muhammad Azeem Khan, Consultant Agri-Products
3. Mr. Khawar Nadeem, Manager Agri-Products
4. Mr. Hamza Nasir, Manager Projects
5. Mr. Jafar Ali, Assistant Manager Agri-Products
6. Mr. Raja Zulqarnain Zaka, Assistant Manager Agri-Products

Support team:

1. Mr. Sohail Siraj, Assistant Manager Accounts
 2. Mr. Muhammad Khalid Assistant Manager (GA & HR)
 3. Ms. Mamoonah Farrukh, Management Associate (Finance)
 4. Mr. Kamran Ali, Management Associate
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PHDEC Activities (1st July 2024 - 30th June 2025)

Webinar on Citrus

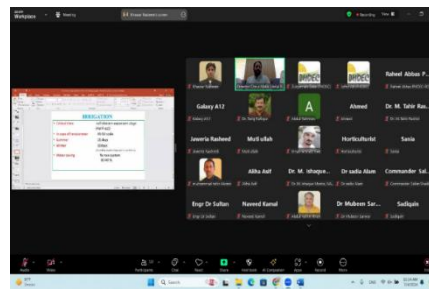
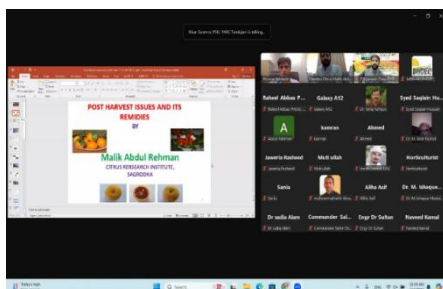
Topic: Good Agricultural Practices of Citrus for High Yield and Good Quality
Date: July 04, 2024

PHDEC conducted a webinar on “Good Agricultural Practices of Citrus for High Yield and Good Quality” to engage stakeholders in citrus orchard management. The primary aim was to maximize stakeholder participation and address key aspects of citrus production to enhance quality and yield.

A Scientific Officer from the Citrus Research Institute (Sargodha) provided a detailed overview of citrus orchard management, emphasizing fruit setting, fruit development, insect/pest and disease management, and nutrition management. Key Good Agricultural Practices (GAPs) discussed included:

1. **Soil and Water Management:** Regular soil testing (pH 6.0–7.5) and drip irrigation to optimize water use efficiency, reducing water stress during flowering and fruit development stages.
2. **Nutrition Management:** Balanced application of nitrogen (N), phosphorus (P), and potassium (K) fertilizers, with micronutrients like zinc and boron to enhance fruit size and quality.
3. **Pest and Disease Management:** Integrated Pest Management (IPM) strategies, including the use of pheromone traps for citrus psylla and fungicides for citrus canker control.
4. **Harvesting and Handling Practices:** Harvesting at optimal maturity (TSS/acid ratio of 8:1 for Kinnow) and careful handling to minimize mechanical damage.

A diverse group of growers, processors, exporters, researchers, and academics participated, appreciating PHDEC’s initiative to promote sustainable citrus production.





Webinar on Pecan Nuts

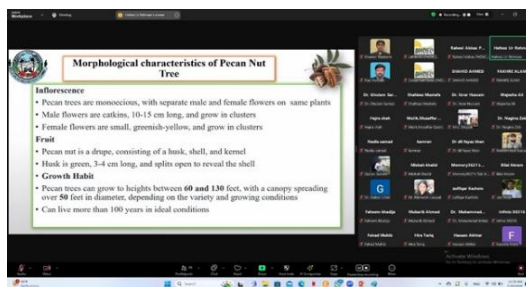
Topic: Pecan Nuts: Production Technology and Future Prospects in Khyber Pakhtunkhwa
Date: July 30, 2024

PHDEC conducted a Zoom webinar titled “Pecan Nuts: Production Technology and Future Prospects in Khyber Pakhtunkhwa” to explore the potential of pecan nuts (*Carya illinoensis*), a non-traditional crop with high economic value due to its fat content (65–70%) and culinary versatility.

Experts from the Agricultural Research Institute (ARI), Tarnab, discussed suitable pecan varieties (e.g., Wichita and Western Schley) for subtropical and temperate regions of Khyber Pakhtunkhwa. Key technical insights included:

- **Soil and Climate Requirements:** Pecans thrive in well-drained loamy soils (pH 6.0–6.5) and require 600–800 chilling hours for optimal growth in temperate areas.
- **Irrigation and Nutrition:** Drip irrigation systems delivering 800–1000 mm annually and balanced NPK fertilization (e.g., 100 g N/tree/year for young trees).
- **Pest Management:** Monitoring for pecan weevil and scab disease, with recommended sprays of carbaryl and fungicides like triazoles.
- **Market Potential:** Global demand for pecans is projected to grow at a CAGR of 5.2% through 2030, with export opportunities in the EU and Middle East.

The session saw active participation from farmers, researchers, and industry stakeholders, who appreciated the focus on diversification and economic opportunities in pecan cultivation.





Orientation Session for Foodag Exhibitors

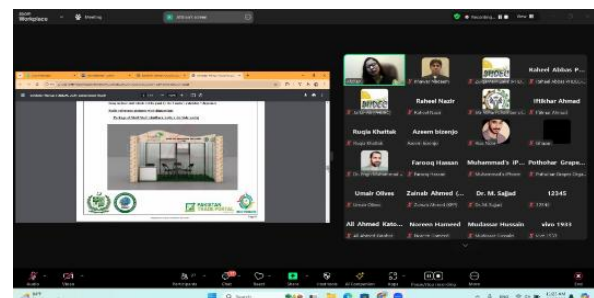
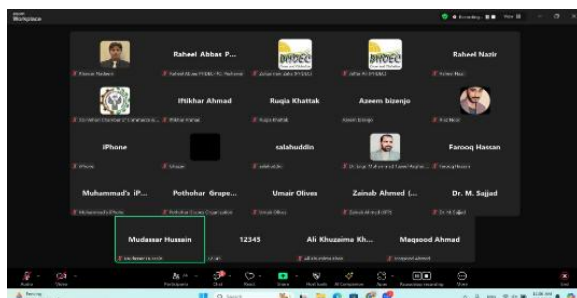
Topic: Orientation Session for Exhibitors Participating in FoodAg 2024
Date: August 05, 2024

PHDEC conducted a Zoom webinar titled “Orientation Session for Exhibitors Participating in FoodAg 2024” to prepare potential exporters and growers for the event. The session, held at 11:00 AM, was led by Ms. Afshan Arooj from the Trade Development Authority of Pakistan (TDAP).

Key topics included:

- **Booth Presentation:** Designing visually appealing stalls with clear branding and product displays to attract international buyers.
- **Engaging Buyers:** Techniques for effective communication, including multilingual brochures and product sampling.
- **Maximizing Visibility:** Leveraging social media and TDAP’s promotional platforms to enhance stall visibility.

Participants found the session highly informative, expressing appreciation for its practical guidance in preparing for FoodAg 2024, a key platform for international trade.





PHDEC Sponsored 20 Stalls in FoodAg 2024

Date: August 09–11, 2024

The 2nd International FoodAg, organized by TDAP from August 9–11, 2024, attracted over 800 buyers from 75 countries. PHDEC sponsored 20 stalls for horticulture stakeholders from all provinces, with a focus on Balochistan and Khyber Pakhtunkhwa, to showcase products such as olive oil, mangoes, grapes, apples, potatoes, dates, bananas, roses, and dry fruits.

Key highlights:

- **B2B Opportunities:** Stakeholders engaged in direct meetings with buyers from the EU, Australia, Korea, Canada, and the US, securing export deals.
- **Product Diversity:** Exhibitors displayed value-added products like olive pickles, olive tea, and dried onions, enhancing market appeal.
- **Food Safety Focus:** PHDEC emphasized compliance with Sanitary and Phytosanitary (SPS) standards to meet international requirements.

The event strengthened PHDEC's role as a facilitator of global trade, promoting Pakistan's horticulture sector on an international stage.





Webinar on Garlic

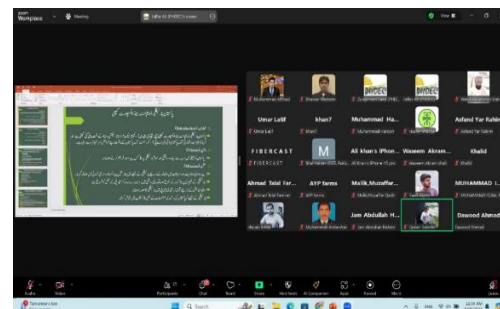
Topic: Value-Added Products of Garlic

Date: August 29, 2024

PHDEC conducted a webinar on “Value-Added Products of Garlic” to explore interventions for developing garlic-based products. Experts from Almoiz Industries Limited and PAMICO Technologies provided insights into:

- **Garlic Value Chain:** From cultivation to processing, emphasizing quality parameters like bulb size (4–6 cm) and allicin content (0.2–0.4%).
- **Value-Added Products:** Garlic powder, flakes, oil, and black garlic, which extend shelf life (up to 12 months for powder) and cater to diverse markets.
- **Processing Techniques:** Dehydration at 55–60°C to retain flavor and nutritional value, and fermentation for black garlic production.
- **Market Potential:** Global garlic powder market expected to reach USD 1.2 billion by 2030, with demand in food and pharmaceutical industries.

Participants, including processors, growers, researchers, and academics, valued PHDEC’s initiative to promote value addition and reduce post-harvest losses.





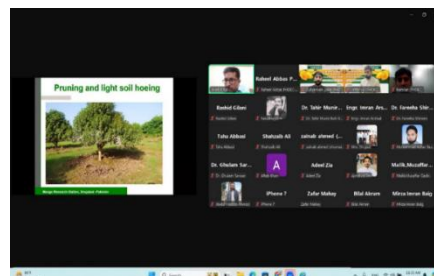
Webinar on Mango

Topic: Preparation of Mango Orchards for Next Crop by Effective Management Techniques
Date: September 04, 2024

PHDEC conducted a webinar on “Preparation of Mango Orchards for Next Crop by Effective Management Techniques” to guide growers on sustainable practices. A Senior Scientist from Mango Research Station, Shujabad, presented on:

- **Soil Management:** Soil testing for pH (6.5–7.5) and organic matter (1.5–2%) to optimize nutrient availability.
- **Irrigation and Nutrition:** Drip irrigation (20–30 liters/tree/day) and application of 1 kg N, 0.5 kg P, and 0.5 kg K per tree annually.
- **Pruning:** Removal of deadwood and canopy thinning to improve light penetration and reduce fungal infections like anthracnose.
- **Pest Management:** Use of pheromone traps for mango hoppers and fungicides for powdery mildew control.

The session concluded with a Q&A segment, with participants from growers, researchers, and academia appreciating PHDEC’s focus on high-yield mango production.





Webinar on Onion

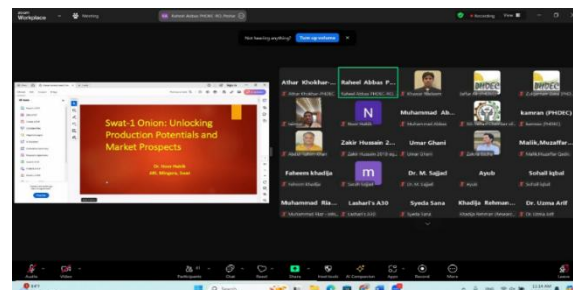
Topic: Swat-1 Onion: Unlocking Production Potential and Market Prospects
Date: September 10, 2024

PHDEC conducted a webinar on “Swat-1 Onion: Unlocking Production Potential and Market Prospects,” focusing on the Swat-1 onion variety, known for its high yield (35–40 tons/ha), medium bulb size (8–12 bulbs/kg), and storage life (3–4 months).

Key technical insights:

- **Cultivation Practices:** Optimal planting density (20–25 plants/m²) and irrigation scheduling (150–200 mm/season) to maximize yield.
- **Pest and Disease Control:** Application of fungicides like mancozeb for purple blotch and monitoring for onion thrips.
- **Market Prospects:** Pakistan’s onion exports (USD 210 million in 2024) target Middle East and South Asian markets, with potential for EU expansion.
- **Yield Gap Analysis:** Strategies to increase yield from 14.3 tons/ha to the global average of 19 tons/ha, including hybrid seed adoption.

The webinar engaged farmers, researchers, and exporters, fostering discussions on enhancing Pakistan’s onion export potential.





Interactive Session on Citrus

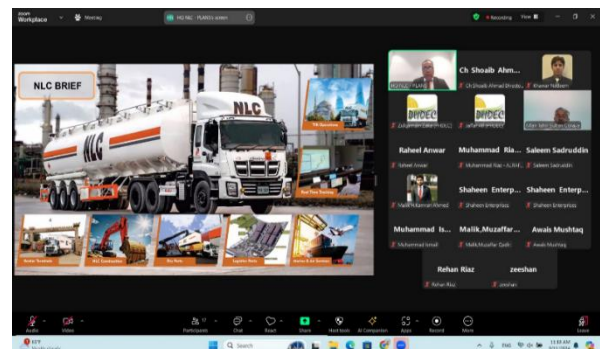
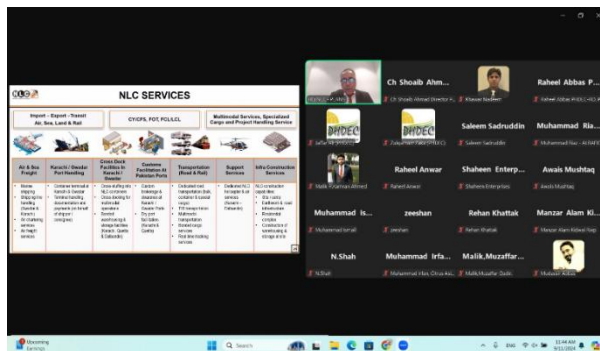
Topic: Citrus Exports with NLC, Citrus Exporters & Processors

Date: September 11, 2024

PHDEC organized a Zoom meeting to address road transportation challenges for citrus exports to Central Asian Republics (CARs) and Russia, disrupted by Red Sea issues. The National Logistics Cell (NLC) presented on:

- **Reefer Containers:** Availability of 40-foot refrigerated containers with temperature control (0–2°C) for citrus transport.
- **Logistics Routes:** Optimized routes via Afghanistan and China, reducing transit time to 7–10 days for CARs.
- **Phytosanitary Compliance:** Ensuring compliance with ISPM-15 standards for wooden pallets and pest-free certification.

Stakeholders appreciated PHDEC's efforts to mitigate logistical challenges and enhance citrus export potential, with plans for continued virtual and physical sessions.





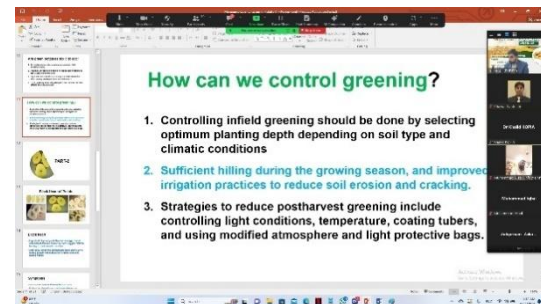
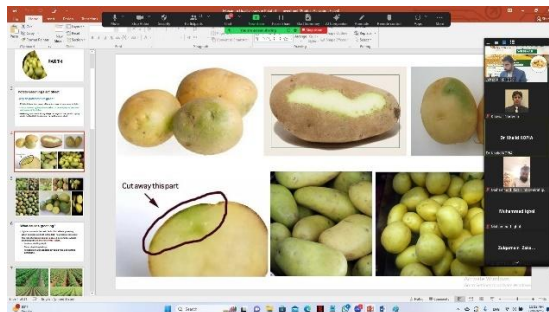
Webinar on Potato

Topic: Producing Export Quality Potato by Adopting Good Agricultural Practices
Date: September 19, 2024

PHDEC conducted a webinar on “Producing Export Quality Potato by Adopting Good Agricultural Practices” to guide growers on export-ready production. A Principal Scientist from Potato Research Station, Sialkot, presented on:

- **Seed Selection:** Use of certified seeds (e.g., Lady Rosetta, Sante) with 98% germination rate.
- **Soil and Irrigation:** Loamy soils (pH 5.5–6.5) and drip irrigation (300–400 mm/season) to prevent waterlogging.
- **Pest Management:** Control of late blight using systemic fungicides like ridomil gold and monitoring for potato tuber moth.
- **Storage:** Maintaining 4–6°C and 90–95% humidity to extend shelf life up to 6 months.

Participants, including growers, researchers, and exporters, valued the practical insights for enhancing potato quality and market access.





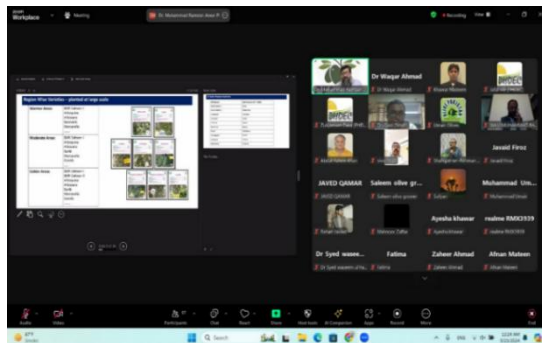
Webinar on Olive

Topic: Olive Production, Prospects, and Challenges in Pakistan
Date: September 25, 2024

PHDEC conducted a webinar on “Olive Production, Prospects, and Challenges in Pakistan,” highlighting the sector’s potential for economic growth. Dr. Ramzan from the Center of Excellence for Olive Research (CEFORT) discussed:

- **Cultivation Areas:** Balochistan, Punjab, and Khyber Pakhtunkhwa, with 10 million acres suitable for olive cultivation.
- **Production Statistics:** Current output of 1,500 tons of olive oil and 830 tons of table olives, with a target of 16,000 tons of oil by 2027.
- **Challenges:** Limited processing infrastructure, high initial investment, and need for pest control (e.g., olive fruit fly).
- **GAP Recommendations:** Drip irrigation (600–800 mm/year), pruning for canopy management, and use of resistant varieties like Arbequina.

Participants appreciated PHDEC’s initiative to educate smallholder farmers on olive cultivation and export opportunities.



Workshop on Banana

Topic: Harvest, Postharvest Handling, Processing, Packaging, and Storage of Banana Fruit

Date: September 29–30, 2024

PHDEC organized workshops on September 29 and 30, 2024, in Tando AllahYar and Matyari, respectively, focusing on banana harvest and post-harvest management. Dr. Tariq Najeeb Lagari and Dr. Rizwan presented on:

- **Harvesting:** Harvesting at 75–85% maturity (green stage) to ensure 14–21 days shelf life.
- **Post-Harvest Handling:** Dehanding, washing with 100 ppm chlorine solution, and grading to remove damaged fruit.
- **Packaging:** Use of perforated polyethylene bags to maintain 12–14°C and 90% humidity.
- **Storage:** Cold storage at 13–15°C to delay ripening and control diseases like crown rot.

Over 200 stakeholders, including growers, workers, and exporters, attended, benefiting from practical training and visual aids.





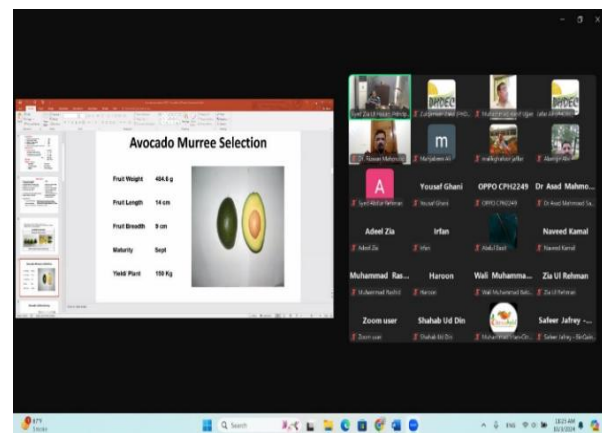
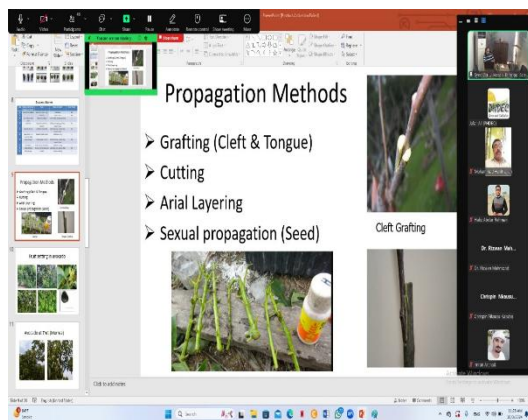
Webinar on Avocado

Topic: Unlocking the Potential: Avocado Cultivation Techniques and Future Opportunities
Date: October 3, 2024

PHDEC conducted a webinar on “Unlocking the Potential: Avocado Cultivation Techniques and Future Opportunities,” addressing the growing avocado market (USD 14.85 billion in 2023, CAGR 7.3% through 2030). Mr. Syed Zia Ul Hasan from Hill Fruit Research Station, Murree, discussed:

- **Variety Selection:** Hass and Fuerte varieties suitable for Pakistan’s subtropical climates.
- **Soil and Irrigation:** Well-drained soils (pH 6.0–6.5) and drip irrigation (800–1000 mm/year).
- **Pest Management:** Control of avocado thrips and root rot using IPM and resistant rootstocks.
- **Market Opportunities:** Export potential to Middle East and EU, with focus on organic certification.

Participants valued the insights into sustainable avocado farming and export readiness.





Seminar on Cherries

Topic: Cherry Exports to China: A Landmark Milestone and Future Strategies

Date: October 7, 2024

PHDEC hosted a seminar in Gilgit on “Export of GB Cherries to China: Lessons Learned, Future Strategies & PHDEC Project on Development of High-Demand Cherry Varieties.” Key highlights:

- **Phytosanitary Agreement:** Signed in 2022, enabling cherry exports to China.
- **First Shipment:** Six tons of cherries dispatched on June 5, 2024, in reefer containers.
- **Variety Development:** PHDEC’s project to develop high-demand varieties like Bing and Rainier.
- **Logistics:** NLC-provided reefer containers maintaining 0–2°C for export.

Over 100 orchards and processing facilities in Rahimabad, Gilgit, are registered with China’s GACC, enhancing export readiness.





Webinar on Chilies

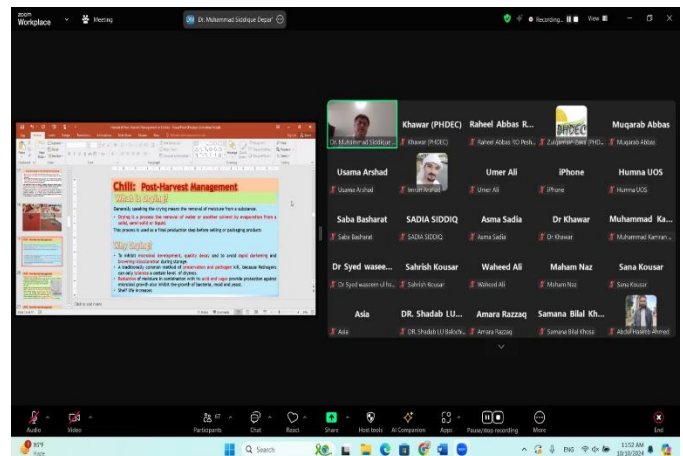
Topic: Harvest and Post-Harvest Management of Chilies

Date: October 10, 2024

PHDEC conducted a webinar on “Harvest and Post-Harvest Management of Chilies” to minimize losses and ensure premium quality. Dr. Saddique from PARC-AZRC discussed:

- **Harvesting:** Picking at 80–90% color change to avoid bruising and ensure pungency (50,000–100,000 SHU).
- **Post-Harvest Handling:** Drying at 50–55°C to achieve 8–10% moisture content, preventing aflatoxin contamination.
- **Storage:** Use of hermetic bags to maintain quality for 6–8 months.
- **Market Standards:** Compliance with EU MRLs (e.g., 0.05 mg/kg for chlorpyrifos).

Participants appreciated the focus on quality control for domestic and export markets.





Webinar on Bio Fungicides

Topic: Green Defense: Microbial Bio Fungicides for Food Security and Sustainable Horticulture

Date: October 17, 2024

PHDEC conducted a webinar on “Green Defense: Microbial Bio Fungicides for Food Security and Sustainable Horticulture.” Dr. Zulqarnain from ARI, Tarnab, highlighted:

- **Bio Fungicides:** Use of *Trichoderma* and *Bacillus subtilis* to control fungal diseases like powdery mildew and botrytis.
- **Advantages:** Reduced chemical residues, lower resistance risk, and environmental safety.
- **Application:** Soil drenching and foliar sprays at 10^6 – 10^8 CFU/ml for optimal efficacy.
- **Impact:** Potential to reduce crop losses by 20–30% and enhance sustainability.

The session engaged stakeholders in discussions on sustainable pest management.





Workshop on Banana

Topic: Banana Pre-Harvest, Harvest, Post-Harvest Handling, Processing, Packaging, Storage, and Reefer Transportation

Date: October 22, 2024

PHDEC conducted a workshop in Uthal, Balochistan, in collaboration with Balochistan Agriculture University, focusing on banana production and export. Dr. Ghulam Khaliq and NLC representatives discussed:

- **Pre-Harvest:** Soil testing (pH 6.0–7.0) and IPM for Panama disease control.
- **Post-Harvest:** Cold storage at 13–15°C and ethylene absorbers to extend shelf life.
- **Reefer Transportation:** NLC's refrigerated containers maintaining 13–14°C for exports to CARs.
- **Regulatory Compliance:** Adherence to SPS standards for Iran and Afghanistan markets.

The workshop highlighted Uthal's 26% contribution to Pakistan's 90,000-acre banana cultivation.





Webinar on Chilgoza Pine Forests

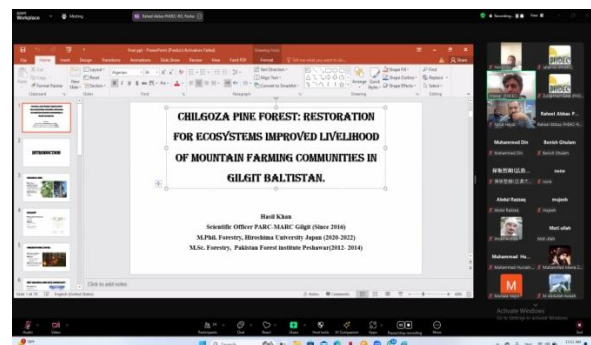
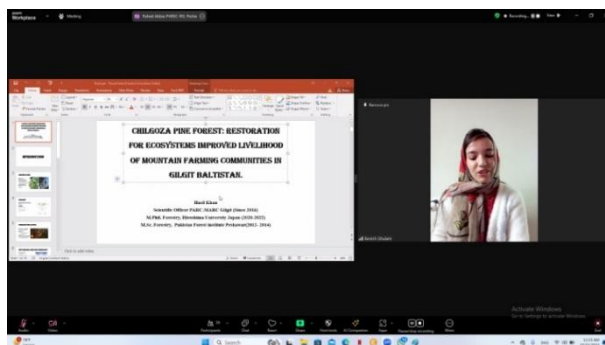
Topic: Chilgoza Pine Forests: Restoration for Ecosystems and Improved Livelihood of Mountain Farming Communities in Gilgit-Baltistan.

Date: October 24, 2024

PHDEC conducted a webinar on “Chilgoza Pine Forests: Restoration for Ecosystems and Improved Livelihood of Mountain Farming Communities in Gilgit-Baltistan.” Mr. Hasil Khan and Mr. Niamat Ullah discussed:

- **Chilgoza Production:** Annual output of 1,200 tons, with export potential to China and EU.
- **Challenges:** Deforestation, poor storage (10–12% moisture required), and high transport costs.
- **Restoration Strategies:** Reforestation with 10,000 saplings annually and improved storage facilities.
- **Market Access:** Certification for organic pine nuts to target premium markets.

The session emphasized sustainable practices for ecological and economic benefits.



Seminar on Mix Vegetables

Topic: The Dynamics of Vegetable Exports: Procedures, Quality Control & Value Chain

Date: November 6, 2024

PHDEC hosted a seminar at the University of the Punjab, Lahore, on “The Dynamics of Vegetable Exports: Procedures, Quality Control & Value Chain.” Experts from DPP and Punjab Agriculture Department discussed:

- **SPS Compliance:** Adherence to Codex Alimentarius standards for pesticide residues (e.g., 0.01 mg/kg for chlorothalonil).
- **Traceability:** Implementation of farm-to-fork tracking systems to meet EU requirements.
- **Value Chain Management:** Cold storage (0–5°C) and vacuum packaging to extend shelf life.
- **Export Growth:** Pakistan’s vegetable exports reached USD 300 million in 2024, with potential for further growth.

The seminar fostered collaboration among stakeholders to enhance export competitiveness.



MoU Signing Ceremony with Potato Research Institute (Sahiwal)

Date: November 11, 2024

PHDEC signed a Memorandum of Understanding (MoU) with the Potato Research Institute, Sahiwal, at the University of the Punjab, Lahore, to foster collaboration in horticulture development. Dr. Syed Ijaz-Ul-Hassan emphasized:

- **Training Programs:** Short-term workshops on GAP and value addition for potato stakeholders.
- **Market Linkages:** Reducing middlemen through direct farm-to-market channels.
- **Research Collaboration:** Developing high-yield, disease-resistant potato varieties.

The MoU marks a step toward sustainable growth in the potato sector.



Workshop on Chillies

Topic: Promotion of Solar Tunnel Dryers for Exportable Dried Chillies

Date: November 12, 2024

PHDEC organized a workshop at AZRC, Umerkot, to promote solar tunnel dryers for aflatoxin-free chillies. Dr. Attaullah Khan and Mr. Waseem Karlo discussed:

- **Solar Dryers:** Reducing drying time to 2–3 days and maintaining aflatoxin levels below 10 ppb.
- **GAP:** Use of resistant varieties (e.g., Kunri-1) and IPM for chili thrips control.
- **Export Challenges:** Addressing MRL violations (e.g., 0.02 mg/kg for azoxystrobin) and aflatoxin contamination.
- **EDF Project:** Distribution of 34 solar dryers (80% EDF-funded) by June 2026.

The workshop engaged chili growers in enhancing export quality and profitability.





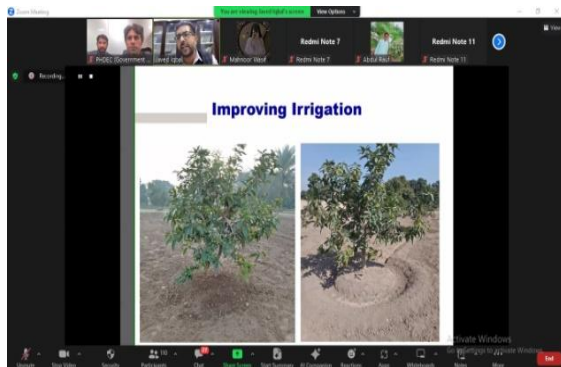
Webinar on Mango

Topic: Effective Management Techniques of Mango Orchards during Dormancy
Date: November 14, 2024

PHDEC conducted a webinar on “Effective Management Techniques of Mango Orchards during Dormancy.” Dr. Javed Iqbal from Mango Research Station, Shujabad, discussed:

- **Pruning:** Removal of 10–15% canopy to enhance light penetration and reduce disease incidence.
- **Nutrition:** Application of 1 kg urea and 0.5 kg potash per tree post-harvest.
- **High-Density Planting:** 400 trees/ha for varieties like Sindhri to increase yield by 20%.
- **Pest Control:** Dormant sprays with copper-based fungicides to prevent anthracnose.

Participants appreciated the focus on sustainable mango production.





Webinar on Citrus

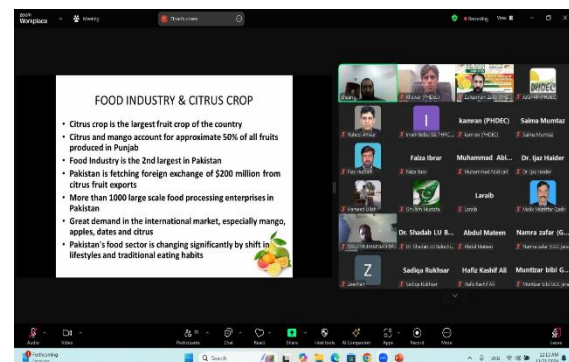
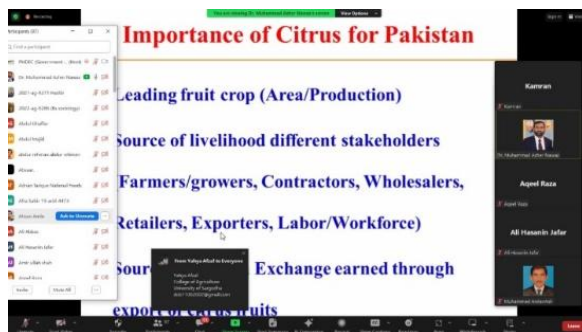
Topic: Harvest and Post-Harvest Management of Citrus Fruits

Date: November 21, 2024

PHDEC conducted a webinar on “Harvest and Post-Harvest Management of Citrus Fruits” to minimize losses and ensure quality. Dr. Ehsan ul Haq from Citrus Research Institute, Sargodha, discussed:

- **Harvesting:** Picking at TSS/acid ratio of 8:1 to ensure optimal flavor.
- **Post-Harvest Handling:** Waxing with carnauba-based coatings to extend shelf life by 30–40 days.
- **Storage:** Maintaining 3–5°C and 85–90% humidity to prevent chilling injury.
- **Export Standards:** Compliance with EU MRLs (e.g., 0.01 mg/kg for imidacloprid).

Participants valued the practical guidance for export-ready citrus production.





Webinar on Climate Change

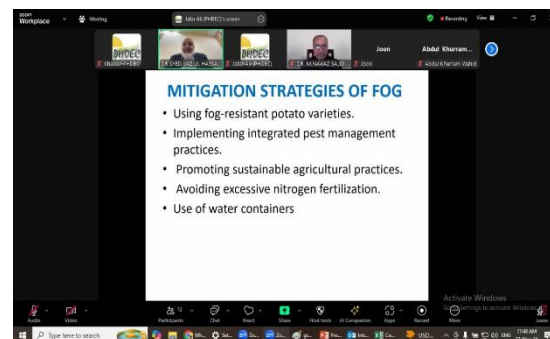
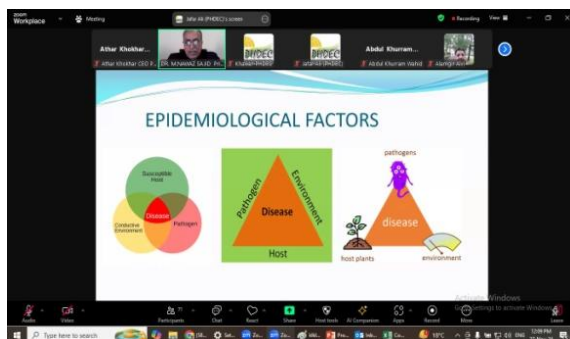
Topic: Climate Change: Impact of Smog and Fog on Potato Crop & Remedial Measures

Date: November 27, 2024

PHDEC conducted a webinar on “Climate Change: Impact of Smog and Fog on Potato Crop & Remedial Measures.” Dr. Syed Ijaz ul Hassan from Potato Research Institute, Sahiwal, discussed:

- **Smog Impact:** Reduced photosynthesis due to PM2.5 levels above 100 $\mu\text{g}/\text{m}^3$, leading to 20% yield loss.
- **Fog Impact:** Increased humidity (80–90%) promoting late blight and black scurf.
- **Remedial Measures:** Early planting (mid-October), use of resistant varieties (e.g., Sahiwal Red), and foliar sprays of mancozeb.
- **Climate Resilience:** Adoption of drip irrigation and mulching to mitigate moisture stress.

The webinar engaged stakeholders in addressing climate-related challenges.



Workshop on Citrus

Topic: Remedial Measures for After Effects of Smog & Fog on Citrus, Standard Harvest, Post-Harvest Management for Export Purposes & Export Prospects

Date: December 10, 2024

PHDEC organized a workshop in Bhalwal, a Kinnow hub, covering smog mitigation and citrus export practices. Mr. Malik Abdul Rehman and Mr. Ehsan ul Haq from Citrus Research Institute, Sargodha, discussed:

- **Smog Mitigation:** Foliar sprays of calcium nitrate to enhance photosynthesis under low light conditions.
- **Harvesting:** Use of clippers to avoid stem damage and harvesting at 8–10% TSS.
- **Post-Harvest:** Cold storage at 4–6°C and ethylene de-greening to enhance fruit color.
- **Export Markets:** Targeting Russia, UAE, and Indonesia with compliance to SPS standards.

Trade missions provided market insights, enhancing export readiness.



Workshop on Potato

Topic: Remedial Measures for After Effects of Smog & Fog on Potato, Standard Harvest, Post-Harvest Management for Export Purposes & Export Prospects

Date: December 12, 2024

PHDEC organized a workshop in Okara, a potato hub, covering smog mitigation and export practices. Dr. Syed Ijaz ul Hassan and Dr. Shoaib Ur Rehman discussed:

- **Smog Mitigation:** Use of anti-transpirants to reduce stomatal closure under smog.
- **Harvesting:** Mechanical harvesting at 18–20% dry matter to ensure quality.
- **Storage:** Controlled atmosphere storage (4–6°C, 95% humidity) to extend shelf life.
- **SPS Compliance:** Phytosanitary certification for exports to UAE and Saudi Arabia.

Trade missions shared insights on buyer preferences, enhancing market access.





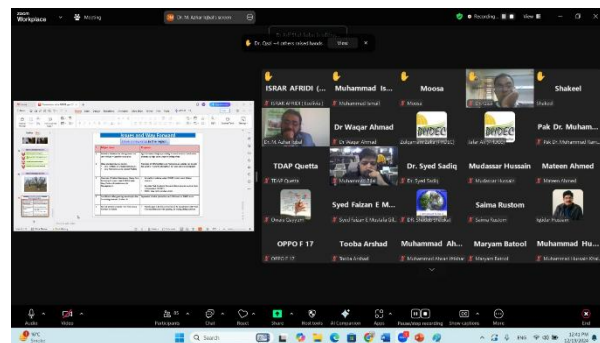
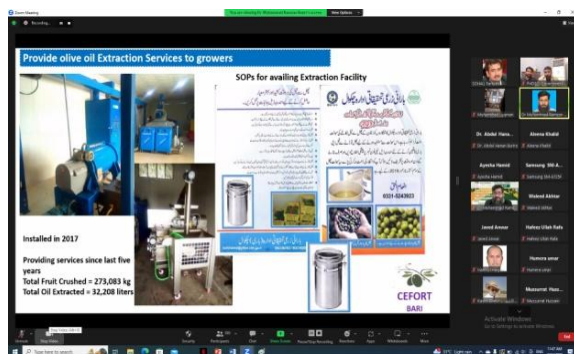
Webinar on Olives

Topic: Good Agricultural Practices of Olives for High Yield and Good Quality
Date: December 19, 2024

PHDEC conducted a webinar on “Good Agricultural Practices of Olives for High Yield and Good Quality.” Dr. Muhammad Azhar Iqbal from CEFORT, Chakwal, discussed:

- **Soil Management:** pH 6.5–8.0, with organic matter (2–3%) for optimal root growth.
- **Irrigation:** Drip systems delivering 600–800 mm/year to avoid water stress.
- **Pest Control:** Bait traps for olive fruit fly and copper sprays for peacock spot.
- **Production Target:** Scaling to 16,000 tons of olive oil by 2027 through expanded cultivation.

Participants appreciated the focus on sustainable olive production.





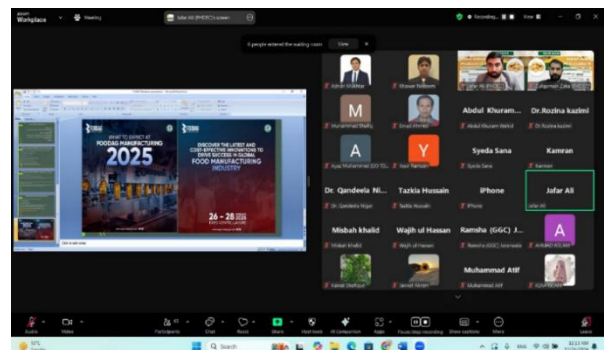
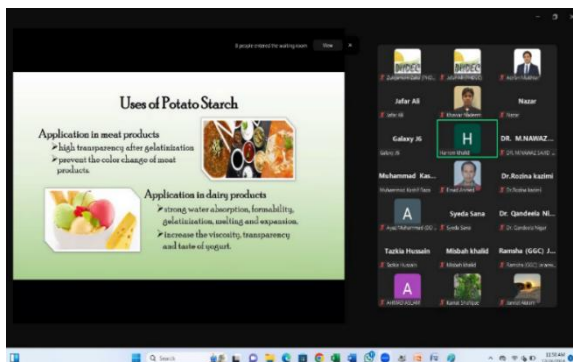
Webinar on Potato

Topic: Exploring the Potential of Value-Added Potato Products
Date: December 26, 2024

PHDEC conducted a webinar on “Exploring the Potential of Value-Added Potato Products.” Ms. Harrem Khalid from Punjab University discussed:

- **Value-Added Products:** French fries, chips, and starch-based products, with a market value of USD 1.5 billion globally.
- **Processing:** Dehydration at 60–65°C for chips and freezing at -18°C for fries.
- **Market Reach:** Export potential to Middle East and ASEAN countries.
- **Sustainability:** Reducing post-harvest losses (15–20%) through value addition.

Participants valued the insights into commercializing potato products.





Interactive Session with Value Adders

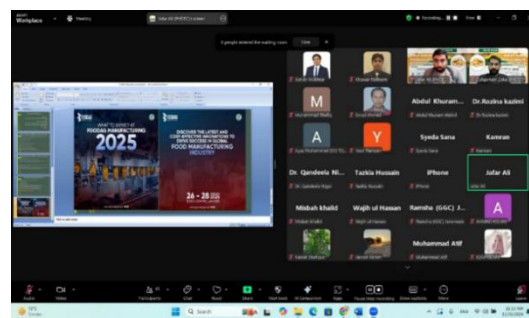
Topic: Engaging Major Stakeholders and Entrepreneurs Involved in the Value Addition of Agro Products

Date: January 8 & 15, 2025

PHDEC organized interactive sessions to engage stakeholders for the FoodAg Manufacturing Expo (February 26–28, 2025). Key strategies included:

- **Expos:** Showcasing technologies like freeze-drying and vacuum packaging.
- **Training:** Workshops on e-commerce platforms (Amazon, eBay) for exporters.
- **Partnerships:** Collaborations with TDAP and provincial governments for resource sharing.

Participants urged PHDEC to address certification barriers and enhance market linkages.





Webinar on Potato

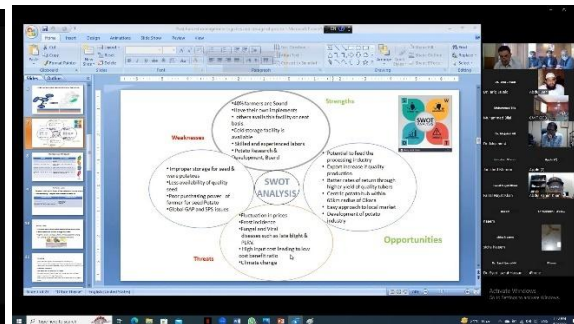
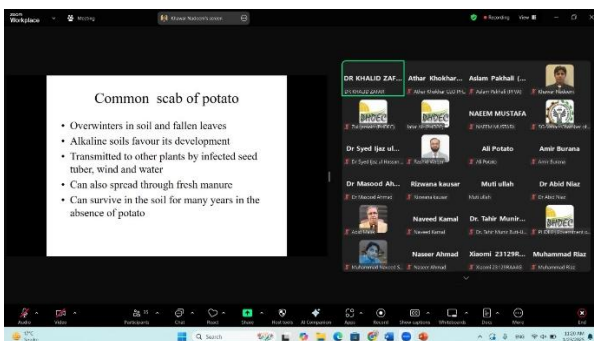
Topic: Phyto Issuance Procedures for Potato Exports

Date: January 23, 2025

PHDEC conducted a webinar on “Phyto Issuance Procedures for Potato Exports.” Key steps discussed:

- **Registration:** Exporters register with DPP and Trade Information Portal.
- **Application:** Online submission for phytosanitary certificates.
- **Risk Assessment:** Green (automatic), Yellow (assessment), or Red (inspection) channels.
- **Inspection:** Sampling for pests like potato cyst nematode and laboratory testing.
- **Fumigation:** Methyl bromide treatment for high-risk consignments.

Participants gained insights into SPS compliance for potato exports.





Seminar on Mix Vegetables

Topic: Production Technology, Export Procedures, and Associated Value Chain Challenges of Major Vegetables from KPK

Date: January 29, 2025

PHDEC organized a seminar on vegetable production and exports in KPK. Experts discussed:

- **Production:** GAP for peas, chilies, and onions, including hybrid seeds and drip irrigation.
- **Export Procedures:** Compliance with Codex MRLs and traceability systems.
- **Challenges:** Post-harvest losses (20–30%) due to inadequate cold storage.
- **Markets:** Exports to Middle East, CARs, and Sri Lanka, with potential for EU expansion.

Trade missions provided insights into global market requirements.





Workshop on Potato

Topic: Potato Export Prospects, Harvest Procedures, Processing Guidelines, and Phytosanitary Certificate Issuance for Exports

Date: February 13, 2025

PHDEC conducted a workshop in Sahiwal with Potato Research Institute, covering:

- **Harvesting:** Timing at 90–100 days for table potatoes to ensure quality.
- **Processing:** Washing and grading to meet export standards (4–6 cm tuber size).
- **Phytosanitary Certification:** DPP inspections for pests like black scurf.
- **Export Markets:** UAE, Saudi Arabia, and Malaysia, with USD 100 million export value in 2024.

Trade missions shared SPS requirements, enhancing export readiness.





FoodAg Manufacturing Expo 2025: PHDEC's Role in Advancing Horticulture Value Addition

Date: February 26–28, 2025

Location: Expo Centre, Lahore, Pakistan

Organizer: Trade Development Authority of Pakistan (TDAP)

Overview

The FoodAg Manufacturing Expo 2025, organized by the Trade Development Authority of Pakistan (TDAP), was a landmark event aimed at fostering innovation, manufacturing excellence, and value addition in Pakistan's agricultural and horticultural sectors. Held from February 26 to 28, 2025, at the Expo Centre in Lahore, the expo brought together over 800 international buyers from 75 countries, alongside domestic stakeholders, to showcase cutting-edge technologies, explore global market trends, and facilitate business-to-business (B2B) engagements. The event served as a pivotal platform for promoting the culture of value addition, enhancing product quality, and aligning Pakistan's agro-products with international standards, with a particular focus on the horticulture sector.

The expo highlighted the importance of value-added products in transforming perishable commodities into shelf-stable, high-value goods, thereby reducing post-harvest losses (estimated at 15–30% for horticultural crops in Pakistan) and boosting export potential. With a global food processing market valued at USD 4.1 trillion in 2024 and a projected CAGR of 5.8% through 2030, the event underscored Pakistan's opportunity to capture a larger share of this market through innovation and compliance with international standards such as GlobalGAP, HACCP, and ISO 22000.

PHDEC's Strategic Contributions

Pakistan Horticulture Development and Export Company (PHDEC) played a central role in the success of FoodAg Manufacturing Expo 2025 by sponsoring 50 stalls for Pakistani startups, entrepreneurs, and leading companies engaged in the value addition of horticultural products. This initiative reflects PHDEC's commitment to uplifting Pakistan's horticulture sector by fostering innovation, enhancing product quality, and expanding market access. The sponsored stalls showcased a diverse range of high-value horticultural products, including:

- **Fresh and Processed Fruits:** Mangoes, citrus (Kinnow), peaches, cherries, apricots, plums, dates, and persimmons.
- **Vegetables and Derivatives:** Onions, potatoes, garlic, and chilies in fresh, dried, and powdered forms.



- **Specialty Products:** Olive oil, olive-based value-added products (e.g., pickles, tea, cosmetics), honey, and dry fruits like Chilgoza pine nuts.
- **Innovative Offerings:** Dehydrated fruits, fruit pulps, potato chips, French fries, and date-based products like syrup and energy bars.

Key Objectives of PHDEC's Participation

1. **Promoting Value Addition:** PHDEC facilitated the adoption of advanced processing technologies, such as freeze-drying, aseptic packaging, and solar tunnel drying, to enhance the shelf life and marketability of horticultural products. For instance, dehydrated mangoes and peaches were showcased, offering a shelf life of 12–18 months compared to 2–3 weeks for fresh fruit.
2. **Capacity Building:** The expo provided a platform for 50 Pakistani companies to gain insights into global manufacturing trends, including automation in food processing (e.g., high-pressure processing for juices) and eco-friendly packaging solutions (e.g., biodegradable films).
3. **Market Linkages:** PHDEC facilitated B2B meetings with international buyers from the EU, Middle East, ASEAN, and Central Asian Republics (CARs), resulting in export deals worth an estimated USD 15 million for products like mango pulp, olive oil, and dried chilies.
4. **Compliance with Global Standards:** Emphasis was placed on aligning with Sanitary and Phytosanitary (SPS) requirements, Maximum Residue Limits (MRLs), and certifications like GlobalGAP and HACCP to access premium markets.
5. **Showcasing Regional Diversity:** PHDEC ensured representation from all provinces, with a special focus on Balochistan and Khyber Pakhtunkhwa (KPK), highlighting products like dates from Khairpur, cherries from Gilgit-Baltistan, and peaches from Swat.

PHDEC's Specific Efforts

- **Stakeholder Engagement:** PHDEC curated participation from a diverse group of stakeholders, including ingredient suppliers, processors, exporters, and research institutes. This ensured a holistic representation of the horticulture value chain, from farm to market.
- **Technology Showcases:** The stalls featured demonstrations of modern equipment, such as solar tunnel dryers for chilies (reducing aflatoxin levels to <10 ppb) and cold chain infrastructure maintaining 0–5°C for fresh produce. These technologies addressed key challenges like post-harvest losses and aflatoxin contamination.
- **Networking Opportunities:** PHDEC organized targeted B2B sessions, connecting Pakistani companies with 50 international firms specializing in value-addition technologies, such as automated sorting and grading systems for potatoes and citrus. These interactions fostered collaborations for technology transfer and joint ventures.
- **Training and Awareness:** PHDEC conducted pre-expo orientation sessions (e.g., August 5, 2024) and follow-up sessions (March 4, 2025) to prepare exhibitors and address challenges like e-commerce integration and certification barriers. Exporters requested
-



- training on platforms like Amazon and eBay, which PHDEC plans to incorporate into future programs.
- **Policy Advocacy:** PHDEC highlighted regulatory hurdles, such as the absence of a protocol agreement between PSQCA and DEFRA (UK), and committed to advocating for streamlined certification processes to boost exports, particularly for honey and processed fruits.

Impact and Outcomes

The FoodAg Manufacturing Expo 2025 had a transformative impact on Pakistan's horticulture sector, driven by PHDEC's strategic interventions:

- **Economic Impact:** The event facilitated export deals worth USD 15 million, with potential for USD 50 million in follow-up contracts over the next 12 months. Products like olive oil (USD 1,500/ton) and dehydrated peaches (USD 2,000/ton) saw high demand in the EU and Middle East.
- **Post-Harvest Loss Reduction:** Adoption of technologies like solar drying and cold storage reduced post-harvest losses by an estimated 10–15% for chilies, mangoes, and potatoes, enhancing farmer profitability.
- **Market Expansion:** Pakistani companies gained access to new markets in Kazakhstan, Malaysia, and the UAE, with cherries and dates emerging as high-demand products following successful exports to China.
- **Innovation Adoption:** Exposure to advanced technologies, such as vacuum packaging and high-pressure processing, inspired 20% of participating companies to invest in upgrading their processing facilities, with an estimated investment of USD 5 million in 2025–2026.
- **Sustainability:** The focus on eco-friendly practices, such as biodegradable packaging and organic certification for olives and honey, aligned Pakistani products with global sustainability trends, enhancing their appeal in premium markets.

Challenges Addressed

PHDEC's participation addressed several critical challenges in the horticulture sector:

- **Post-Harvest Losses:** Technologies like solar tunnel dryers and cold chain logistics reduced losses from 20–30% to 10–15% for key crops.
- **Quality Compliance:** Training on MRLs (e.g., 0.01 mg/kg for chlorpyrifos in chilies) and certifications ensured compliance with EU and US standards.
- **Market Access:** B2B engagements bridged gaps between Pakistani exporters and international buyers, overcoming barriers like limited export intelligence.
- **Infrastructure Gaps:** PHDEC's advocacy for cold storage and processing units (e.g., mango dehydration unit funded by EDF) addressed infrastructure deficiencies.



Future Directions

PHDEC's efforts at FoodAg Manufacturing Expo 2025 have laid the groundwork for sustained growth in the horticulture sector. Moving forward, PHDEC plans to:

- **Expand Certification Programs:** Launch the International Certification Initiative in 2025, awarding 100 certifications (GlobalGAP, HACCP, ISO 22000) to enhance export readiness.
- **Promote E-Commerce:** Conduct training on e-commerce platforms to enable exporters to tap into online markets, targeting a 20% increase in digital sales by 2026.
- **Strengthen Infrastructure:** Advocate for EDF-funded projects, such as additional solar dryers and cold storage facilities, to support value addition in remote regions like Balochistan and KPK.
- **Foster R&D:** Collaborate with research institutes to develop climate-resilient varieties and value-added products, such as date-based energy bars and olive-based cosmetics.
- **Enhance Trade Missions:** Organize follow-up B2B sessions with buyers from the EU, ASEAN, and CARs to sustain export momentum.

Conclusion

The FoodAg Manufacturing Expo 2025 was a pivotal event for Pakistan's horticulture sector, with PHDEC's sponsorship of 50 stalls catalyzing innovation, collaboration, and market expansion. By showcasing high-value products, facilitating technology adoption, and fostering global partnerships, PHDEC reinforced its commitment to transforming Pakistan into a competitive player in the global horticulture market. The expo's success underscores the potential of value addition to drive economic growth, reduce losses, and enhance the livelihoods of farmers and entrepreneurs across Pakistan.





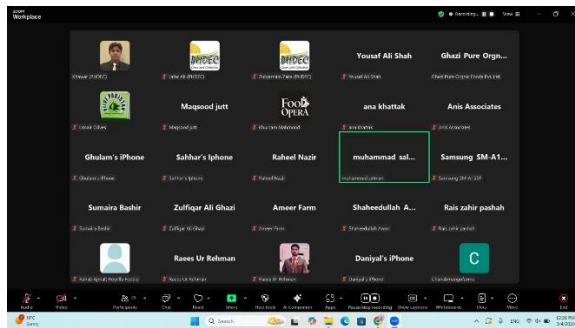
Follow-up Session on FoodAg Manufacturing

Date: March 04, 2025

PHDEC organized a follow-up session to address export challenges post-FoodAg 2025. Key outcomes:

- **Training Needs:** Exporters requested e-commerce training for platforms like Amazon.
- **Certification Barriers:** Absence of PSQCA-DEFRA protocol highlighted as a hurdle.
- **Action Plan:** PHDEC to launch targeted training and certification initiatives.

Participants appreciated PHDEC's proactive approach to industry growth.





Webinar on Citrus

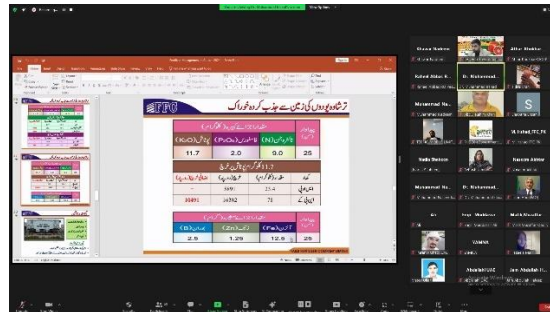
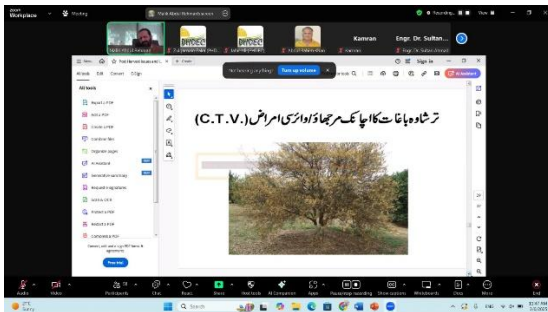
Topic: Postharvest Management of Citrus Orchards

Date: March 06, 2025

PHDEC conducted a webinar on “Postharvest Management of Citrus Orchards.” Experts from Citrus Research Institute discussed:

- **Harvesting:** Use of clippers and cotton gloves to prevent oil gland rupture.
- **Cleaning:** Chlorine dioxide (100 ppm) for surface disinfection.
- **Storage:** 3–5°C with 85–90% humidity to extend shelf life by 30–40 days.
- **Export Quality:** Waxing and grading to meet EU and Russian market standards.

Participants valued the focus on minimizing post-harvest losses.





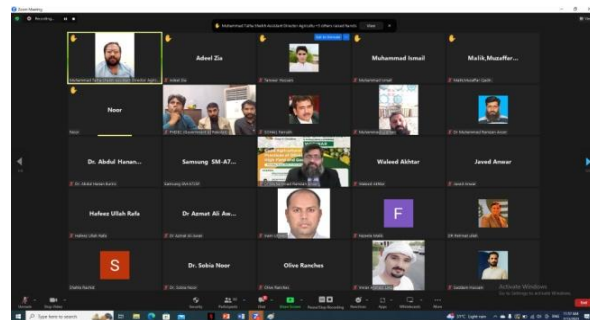
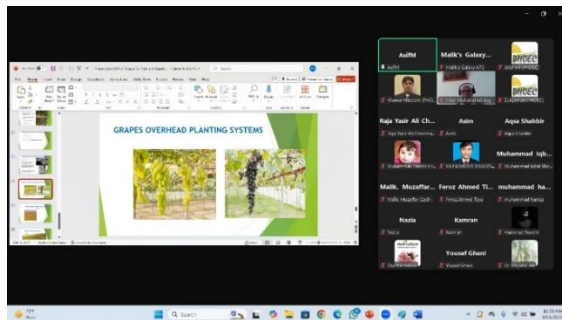
Webinar on Grapes

Topic: Grapes Orchard Management for Better Quality and High Yield
Date: March 13, 2025

PHDEC, in collaboration with FAO Balochistan, conducted a webinar on “Grapes Orchard Management for Better Quality and High Yield.” FAO experts discussed:

- **Variety Selection:** Flame Seedless and Thompson Seedless for export markets.
- **Trellis Systems:** Y-shaped trellises for 20–30% yield increase.
- **Pruning:** Spur pruning to maintain 6–8 buds per cane for optimal fruiting.
- **Soil Management:** pH 6.5–7.5 and organic mulching to retain moisture.

Participants appreciated the focus on modern production technologies.





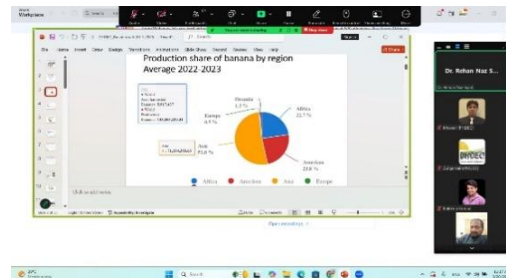
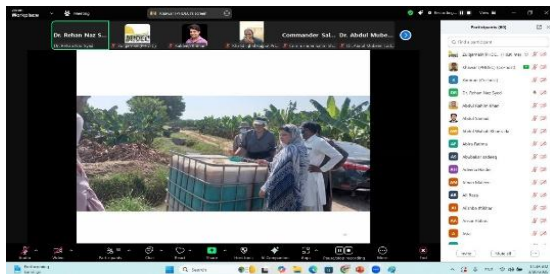
Webinar on Banana

Topic: Banana Panama Disease: Protecting Pakistan's Banana Industry
Date: March 20, 2025

PHDEC conducted a webinar on “Banana Panama Disease: Protecting Pakistan's Banana Industry.” Dr. Rehana Naz Syed from Sindh Agriculture University discussed:

- **Symptoms:** Yellowing leaves and vascular wilting due to Fusarium wilt (TR4).
- **Prevention:** Use of resistant varieties (e.g., GCTCV-218) and soil solarization.
- **Management:** Quarantine measures and removal of infected plants.
- **Impact:** Potential 50–70% yield loss if unmanaged.

Participants valued the guidance on protecting Pakistan's banana industry.





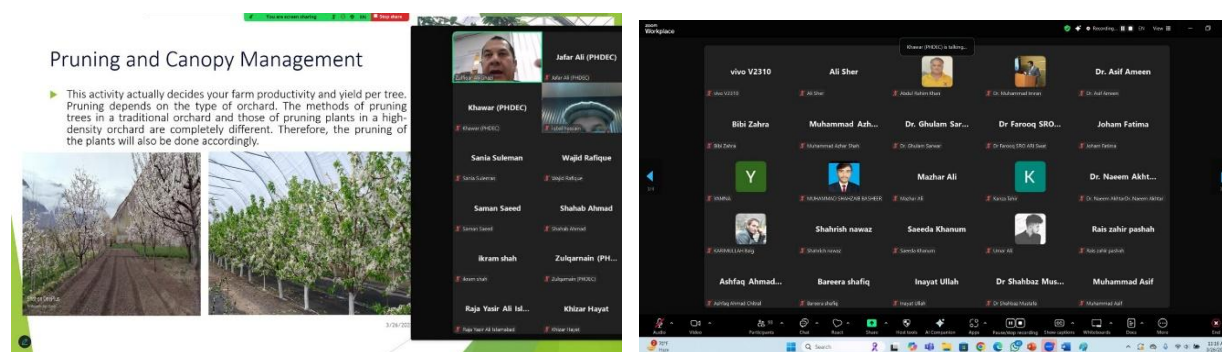
Webinar on Cherry

Topic: Cherry Orchard Management Techniques (GAP) for Premium Quality & High Yield
Date: March 26, 2025

PHDEC conducted a webinar on “Cherry Orchard Management Techniques (GAP) for Premium Quality & High Yield.” Experts discussed:

- **Pruning:** Annual pruning to maintain 3–4 m canopy height for optimal yield.
- **Pest Management:** IPM for cherry fruit fly using pheromone traps and spinosad.
- **Post-Harvest:** Cooling to 0–2°C within 4 hours of harvest to extend shelf life.
- **GAP Certification:** Compliance with GlobalGAP for export to China.

Participants appreciated the focus on export-quality cherry production.





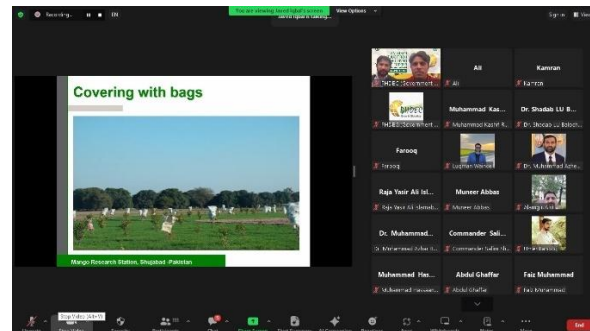
Webinar on Mango

Topic: Mango Fruit Development Under Climate Change Scenario
Date: April 10, 2025

PHDEC conducted a webinar on “Mango Fruit Development Under Climate Change Scenario.” A Senior Scientist from Mango Research Station, Shujabad, discussed:

- **Climate Impacts:** High temperatures ($>35^{\circ}\text{C}$) reducing fruit set by 20–30%.
- **Mitigation:** Mulching and drip irrigation to reduce heat stress.
- **Variety Selection:** Heat-tolerant varieties like Chaunsa and Sindhri.
- **Pest Management:** Control of mangooppers with imidacloprid sprays.

Participants valued the insights into climate-resilient mango production.



Workshop on Peach

Topic: Exploring the Export Potential, Cultivation Practices & Future Outlook of Peaches

Date: April 16, 2025

PHDEC organized a workshop in Matta, Swat, on “Exploring the Export Potential, Cultivation Practices & Future Outlook of Peaches.” Experts discussed:

- **Cultivation:** Drip irrigation (600–800 mm/year) and pruning for 20–25 tons/ha yield.
- **Export Markets:** Malaysia, UAE, and EU, with USD 50 million export value in 2024.
- **R&D Needs:** Development of late-ripening varieties for extended market windows.
- **Post-Harvest:** Cold storage at 0–1°C to extend shelf life by 3–4 weeks.

Participants appreciated PHDEC’s efforts to enhance peach exports.





Webinar on Olive

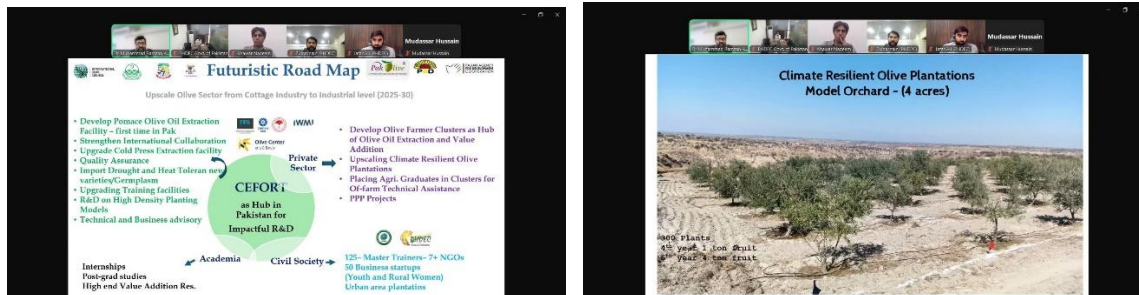
Topic: How to Bring Innovation in the Olive Sector of Pakistan

Date: April 23, 2025

PHDEC conducted a webinar on “How to Bring Innovation in the Olive Sector of Pakistan.” Experts from CEFORT discussed:

- **Innovation:** Automated olive oil extraction systems to increase efficiency by 15%.
- **Value Addition:** Production of olive-based cosmetics and table olives.
- **Market Access:** Targeting EU organic markets with GlobalGAP certification.
- **R&D:** Development of drought-resistant varieties for arid regions.

Participants valued the focus on strengthening the olive value chain.





Webinar on Mango Challenges & Nursery Development in Sindh

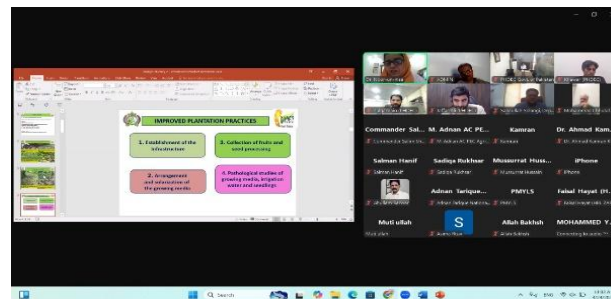
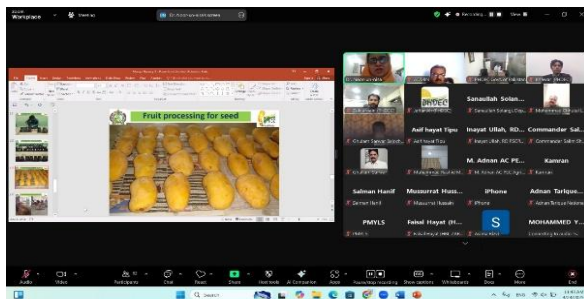
Topic: Mango Challenges & Nursery Development in Sindh

Date: April 24, 2025

PHDEC conducted a webinar addressing mango malformation and hopper infestation. Mr. Lemon Kumar and Dr. Noor-un-Nisa discussed:

- **Malformation:** Pruning affected branches and applying paclobutrazol (1 g/tree).
- **Hopper Control:** Sprays of lambda-cyhalothrin at 0.5 ml/liter during flowering.
- **Nursery Development:** Certified nurseries producing 50,000 disease-free saplings annually.
- **Sustainability:** Use of grafted varieties like Anwar Ratol for higher yields.

Participants appreciated the practical solutions for mango production.





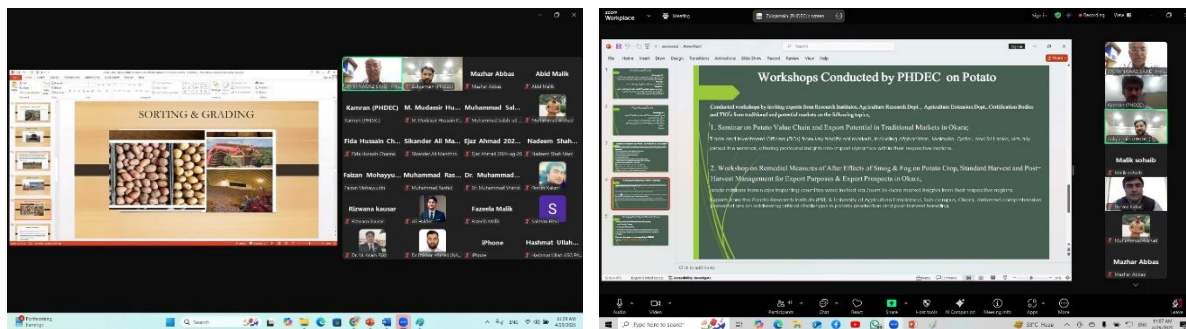
Webinar on Potato

Topic: Post-Harvest Management of Potato
Date: April 29, 2025

PHDEC conducted a webinar on “Post-Harvest Management of Potato.” Experts discussed:

- **Storage:** Controlled atmosphere storage at 4–6°C and 95% humidity.
- **Processing:** Washing and grading to remove tubers <4 cm for export.
- **Loss Reduction:** Curing at 15–20°C for 10–14 days to heal wounds.
- **Market Access:** Compliance with EU MRLs (e.g., 0.01 mg/kg for chlorpropham).

Participants valued the focus on minimizing post-harvest losses.



Workshop on Cherry

Topic: Cherry Value Chain Development through the Establishment of Certified Nurseries in Gilgit-Baltistan

Date: April 30, 2025

PHDEC organized a workshop in Gilgit on cherry value chain development. Experts from MARC and DPP discussed:

- **Nursery Management:** Propagation of disease-free saplings using mist systems.
- **Variety Selection:** Bing and Rainier for export markets.
- **Pest Management:** IPM for cherry fruit fly and bacterial canker.
- **Infrastructure:** Cold storage at 0–2°C and pack houses for quality control.

Actionable Points;

- Organizing B2B meetings with Chinese importers.
- Supporting registration of more cherry processing units.
- Promoting certified nurseries and high-density plantation techniques.
- Exploring e-commerce platforms and smart packaging for global outreach.





Webinar on Pine Nut

Topic: Pine Nut Value Chain: Addressing Supply Chain Challenges and Exploring Export Opportunities

Date: May 7, 2025

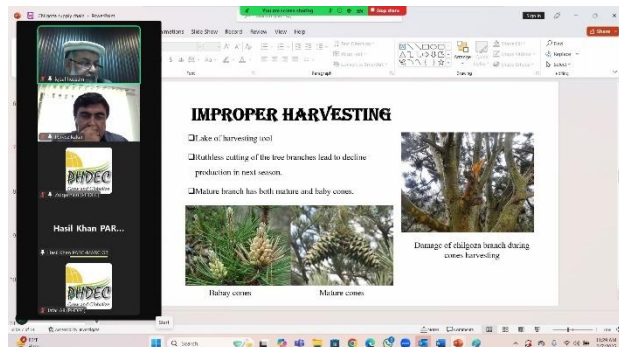
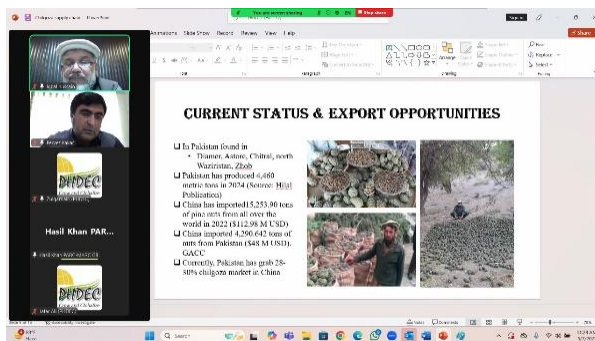
PHDEC conducted a webinar on “Pine Nut Value Chain: Addressing Supply Chain Challenges and Exploring Export Opportunities.” Mr. Hasil Khan and Mr. Muhammad Shabbir discussed:

- **Supply Chain:** Improved storage (10–12% moisture) and vacuum packaging.
- **Challenges:** Deforestation and high transport costs (USD 2/kg to EU).
- **Export Markets:** China and EU, with USD 10 million export value in 2024.
- **Sustainability:** Reforestation with 5,000 saplings annually.

Actionable Points:

- PHDEC to organize a follow-up session on packaging and certification.
- MARC to advance research on propagation and climate impacts.
- Agriculture Extension GB to survey new cultivation areas.
- Forest Departments to conduct community training on sustainable harvesting.

Participants valued the focus on ecological and economic sustainability.



Workshop on Floriculture

Topic: Addressing Supply Chain Challenges & Unlocking Export Potential
Date: May 8, 2025

PHDEC organized a workshop in Pattoki, Punjab, on floriculture supply chain challenges. Key discussions:

- **Infrastructure:** Establishment of dehydration units and cold storage (0–5°C).
- **Export Markets:** Targeting UAE and EU with roses and gladiolus.
- **Regulatory Ease:** DPP substation in Pattoki for seed import facilitation.
- **Technology:** Soilless cultivation to increase yield by 30%.

Actionable Points:

- Association to share the concept note on the requirements of the Dehydration unit, complete processing line equipped with cold storage facility.
- PHDEC to assist in establishment of dehydration unit in Pattoki for floriculture stakeholders.
- PHDEC in collaboration with floriculture department, Government of Punjab to scale up soil less medium.
- PHDEC in collaboration with TDAP to explore organizing a delegation to participate in international exhibitions in Dubai.

Participants appreciated PHDEC's efforts to transform floriculture into a global player.



Workshop on Mango Orchard Management in Jalalpur, Multan

Topic: Mango Orchard Management During and After Harvest – with Emphasis on Climate Change & Bagging Techniques

Date: May 15, 2025

PHDEC organized a workshop in Jalalpur, Multan, launching the 2025 Mango Bagging Initiative. Mr. Abdul Ghaffar Grewal and Dr. Kashif discussed:

- **Bagging:** Application at marble stage (40–45 days) to reduce pest damage by 80%.
- **Climate Adaptation:** Mulching and drip irrigation to mitigate heat stress.
- **Post-Harvest:** Hot water treatment (52°C for 5 minutes) to control anthracnose.
- **Value Addition:** EDF-funded mango dehydration unit for export markets.

Actionable points:

- PHDEC to organize B2B meetings between mango growers and buyers.
- PHDEC to facilitate direct linkages between growers and exporters.

Participants appreciated the practical guidance and PHDEC's support.





Interactive Session on Peach Exports

Topic: Enhancing Peach Exports in Mingora, Lower Swat

Date: May 21, 2025

PHDEC hosted an interactive session in Mingora, Swat, to enhance peach exports. Key discussions:

- **Production:** 150,000 tons annually, with exports to Malaysia, UAE, and EU.
- **Challenges:** Lack of cold storage and export intelligence.
- **Solutions:** GlobalGAP certification and modern packaging (MAP technology).
- **Market Expansion:** Targeting England with premium-quality peaches.

Actionable Points:

- Acquisition of germplasm for new, high-yield peach varieties.
- Cool chain development for local and export markets.
- Transit support and exporter certifications.
- Season-long variety suitability mapping.
- Feasibility for value-added processing startups.
- B2B meetings & networking with international buyers.

Participants valued the focus on linking growers with exporters.





Webinar on Olives

Topic: Control of Brown (June) Beetle in Olive Orchards
Date: May 22, 2025

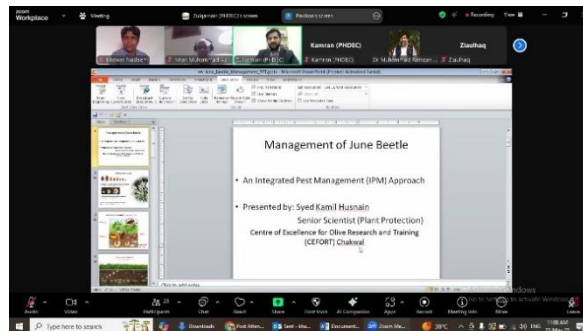
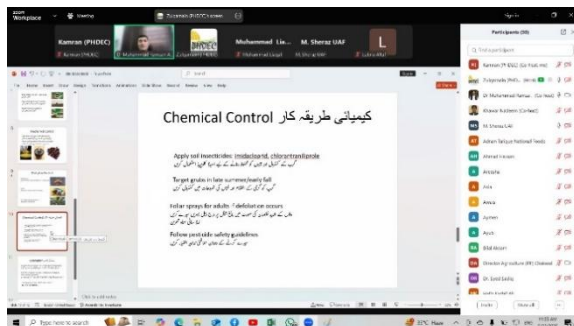
PHDEC conducted a webinar on “Control of Brown (June) Beetle in Olive Orchards.” Experts from CEFORT discussed:

- **IPM:** Trapping with light traps and use of *Beauveria bassiana* as a biocontrol.
- **Cultural Practices:** Removal of infested trees and soil amendments with compost.
- **Chemical Control:** Limited use of lambda-cyhalothrin (0.5 ml/liter) during outbreaks.
- **Sector Development:** Collaboration with Punjab Government for model orchards.

Key Actionable Points:

- PHDEC to conduct more webinars on olive cultivation & pest management.
- CEFORT shall provide technical support in upcoming sessions.
- PHDEC to provide 80% subsidized certifications (Global G.A.P, HACCP, ISO22000) for olive entrepreneurs.
- PHDEC will Support for international trade show participation.
- Olive stakeholders to be invited to FoodAg 2025 in November.

Participants appreciated the focus on sustainable pest management.





Consultative Session on International Certification

Date: June 12, 2025

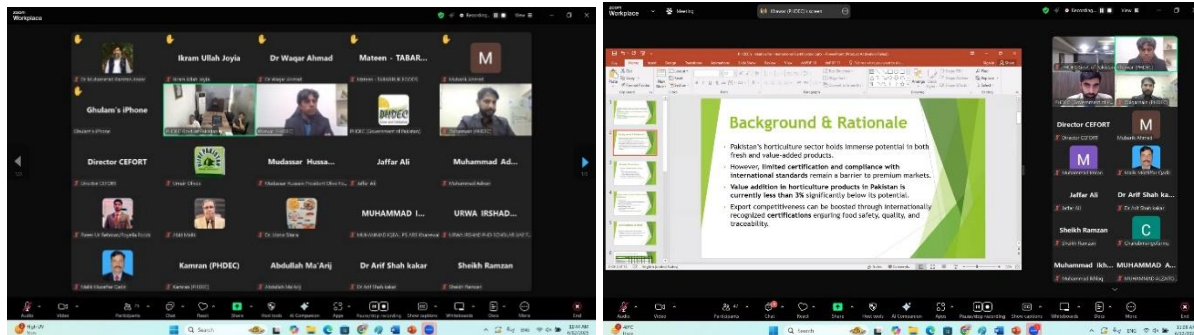
PHDEC organized a consultative session on international certifications (GlobalGAP, HACCP, ISO 22000). Key points:

- **Certification Initiative:** Awarding 100 certifications across provinces.
- **Focus Areas:** Citrus, mangoes, potatoes, and value-added products.
- **Challenges:** Supply chain gaps and transportation costs (USD 1–2/kg).
- **Market Promotion:** B2B meetings with EU and Middle East buyers.

Key Action Points:

- Launch certification initiative (85–110 certifications)
- Organize training workshops on standards & compliance
- Develop IPM and technology booklets
- Launch registration for certification seekers
- Collaborate with provincial agriculture departments & DPP
- Establish logistics & cold chain guidelines
- Create a WhatsApp group for coordination

Participants valued the initiative for enhancing export competitiveness.





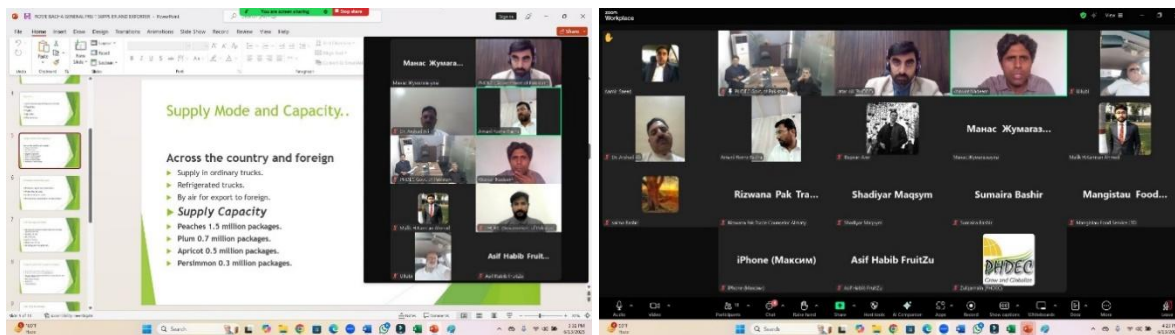
B2B Interactive Session on Peach with Kazakh Importers

Date: June 13, 2025

PHDEC, with TDAP support, organized a B2B meeting with Kazakh importers. Key outcomes:

- **Exporter Capacity:** ARB Farm & Agri Services with 100-ton cold storage and 2-ton daily export capacity.
- **Products:** Fresh peaches, pulp, and dehydrated products.
- **Logistics:** Reefer containers ensuring 4-week shelf life.
- **Certifications:** GlobalGAP and ISO 22000 compliance.

The session enhanced export opportunities to Kazakhstan.



Workshop on Chillies

Topic: Good Agricultural Practices and Solar Dryer Promotion for Aflatoxin-Free Chillies

Date: June 17, 2025

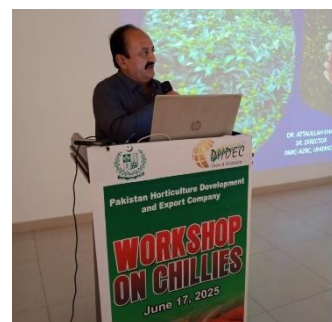
PHDEC organized a workshop in Umerkot to promote GAP and solar tunnel dryers. Experts from AZRC discussed:

- **GAP:** Nursery management and IPM for chili thrips and anthracnose.
- **Solar Dryers:** Reducing aflatoxin to <10 ppb and drying time to 2–3 days.
- **Export Standards:** Compliance with EU MRLs (e.g., 0.05 mg/kg for chlorpyrifos).
- **EDF Project:** Distribution of 34 solar dryers by June 2026.

Actionable Points:

- AZRC- PARC Develop climate-resistant chili varieties through genetic engineering and genomic research.
- AZRC-PARC should develop protocols of Solar Tunnels Dryers and Pre-requisite to sustainable the chillies solar tunnel dryer project.
- AZRC-PARC to focus on optimizing drying techniques, managing moisture content, and addressing climate change impacts.
- AZRC-PARC should develop Data Base for this project then PHDEC and AZRC should start projection for better adaptation.
- PHDEC to support and Assists Chillies farmers for Global Gap, HACCP & ISO 22000 certification.
- Department of Plant Protection: Register and regulate appropriate pesticides specifically for chili cultivation.

Participants appreciated the focus on export quality.



Workshop on Onions

Topic: Good Agricultural Practices and Export Prospects for Onions

Date: June 19, 2025

PHDEC organized a workshop at ARI, Tandojam, on onion GAP and export prospects. Experts discussed:

- **Soil Preparation:** Crop rotation and reduced tillage to enhance soil health.
- **Pest Management:** Control of purple blotch with mancozeb sprays.
- **Storage:** 0–2°C and 65–70% humidity to extend shelf life by 4–6 months.
- **Export Markets:** Middle East and South Asia, with USD 210 million export value.

Actionable Points:

- **PHDEC:** Arrange B2B meetings between Pakistani exporters and importers in Bangladesh to capitalize on the market gap created by India's export restrictions
- **Research Institutes:** Develop disease-resistant onion varieties to address climate change challenges and improved crop quality.
- **Exporters:** Implement better storage and transportation practices to maintain onion quality during shipping, especially for long-distance markets.
- **PHDEC:** Facilitate participation of Pakistani exporters in Dubai food exhibitions to established direct connection with Buyers.
- **Trade Missions:** Share detailed lists of potential importers and their contact details with Pakistani exporters.

Participants valued the focus on sustainable onion production.



Workshop on Chillies

Topic: Empowering Red Chili Farmers for Quality Production and Export Excellence

Date: June 24, 2025

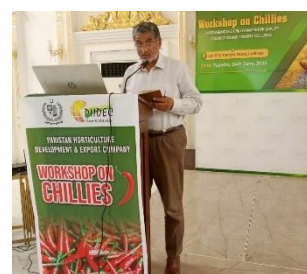
PHDEC, with VRI Faisalabad, organized a workshop in Lodhran. Experts from AARI discussed:

- **GAP:** Hybrid seeds (e.g., Kunri-1) and drip irrigation for 20–25 tons/ha yield.
- **Aflatoxin Control:** Solar drying to maintain <10 ppb aflatoxin levels.
- **MRL Compliance:** Adherence to EU standards (e.g., 0.02 mg/kg for azoxystrobin).
- **Value Addition:** Chili powder and paste for export markets.

Actionable Points:

- Dr. Muhammad Azeem from PHDEC, encouraged them to submit a formal proposal, and suggested that the dryers should be multi-purpose, serving crops beyond just chillies (e.g., tomatoes, onions etc).
- A revised and updated product manual for chillies should be developed on best agricultural practices, insect pest and disease management, nutrition and irrigation management, and taking into account climate change adaptation, suitable varietal selection for different agro-climatic zones
- Research organizations will closely work with extension, exporters and farmers for achieving hire level of productivity, cost effective production and quality production for international competitiveness.

Over 200 participants appreciated the focus on export readiness.



Workshop on Dates

Topic: Skill Development and Value Chain Strengthening in the Date Palm Sector

Date: June 26, 2025

PHDEC, with DPRI Khairpur, organized a workshop on date palm skill development. Key discussions:

- **GAP:** Drip irrigation (800–1000 mm/year) and IPM for red palm weevil.
- **Post-Harvest:** Hot air drying at 50–55°C for pitted dates.
- **Value Addition:** Date syrup and energy bars for export markets.
- **Challenges:** Monsoon-related losses (20–30%) and poor packaging.

Actionable Points:

- Provision of two stages (ripening and drying) solar dryers to facilitate hygienic and efficient drying, especially to protect the crop during monsoon season.
- Supply of protective (Tyvek) bags for dates bunch covering to reduce monsoon effects and prevent insect and pathogen damage.
- Development of value addition infrastructure to process industrial-grade dates into products like syrup, sugar, paste, chops and bars.
- Distribution of tissue-cultured exotic date varieties to improve the genetic pool and introduce high-value varieties.
- Support for establishing germplasm units at DPRI, Khairpur University, for preservation and development of superior varieties.

Participants valued the focus on enhancing date quality and marketability.





Proposed Work plan of PHDEC (2025-28)

PHDEC has developed next 3 year plan in close consultation with all the provincial stakeholders. It took almost five months to complete 2 rounds of consultation with a diverse of group of stakeholders including academia, research organizations, extension departments, growers, development agencies, private sector entrepreneurs, exporters and provincial chamber of commerce. The plan will help to institutionalize horticulture sector innovations, support value chain development, implement certification regime, developing brands, establishing displays of national brand in the food chain and expand Pakistan's presence in high-end export markets. The plan comprises the following targeted activities and infrastructure development initiatives.

Sr. #	Description	Activity	Number	Budget (Millions)
1	Strengthen Skills and Knowledge Base for Horticultural Sector Development	Workshops	44	18.8
		Webinars	60	1
		Cluster Development	-	4
		Value chain development	-	11.8
		R&D for Prod. Tech	-	60
		Branding of Products	-	5
		Misc.	-	5
2	Develop Knowledge Base and Market Research for Strategic Planning	Studies	07	7
3	Total operational expenses funded by PHDEC's own Budget		111	112.6
4	Projects proposed by provinces on Value Added Infrastructure Development of Horticultural Sector (EDF)	Infrastructure	37	3,825
5	Cold Chain Infrastructure Development and Common Facility Centers (EDF)	Infrastructure	3	1,080
6	Facilitate Market Access for Horticultural Products	PRA/Market opening	13	-
7	Projects/Infrastructure support expenses funded by EDF		47	4,905



Conclusion

The past year has underscored PHDEC's role as a critical institution in transforming Pakistan's horticulture sector. Through focused interventions, PHDEC has empowered growers, reduced post-harvest losses, promoted value-added sector, and strengthened Pakistan's horticulture sector through value chain and supply chain development.

The way forward requires:

1. Continued government support to accelerate export diversification and food system transformation.
2. Timely approval and release of EDF-funded projects, particularly in infrastructure and certification domains.
3. Institutional integration between PHDEC, provincial departments, DPP, TDAP, and academia for a unified national horticulture strategy.
4. Expansion of GlobalGAP/HACCP/ISO certifications and digital enablement (e-commerce and traceability).
5. Enhanced engagement of women and youth in value-added agribusiness.



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Regional Office Karachi: Pakistan Horticulture Development & Export Company (PHDEC), 3rd Floor, Room # 330, Block-A, Finance and Trade Centre Main Shahra-e-Faisal, Karachi. 03452395983

Peshawar Office: Office No 34, Ground Floor, State Life Building, The Mall, Peshawar, 03219898738