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## **Training of Trainers on Smart Farming on Greenhouse Production for Fruit Crops and Leafy Vegetables**

February 27, 2025 - April 12, 2025  
Bukid Amara, Lucban, Quezon

The Training of Trainers (TOT) on Smart Farming in Greenhouse Production for Fruit Crops and Leafy Vegetables commenced on February 27, 2025 in Bukid Amara, Lucban, Quezon. The training course is funded by the Asian Food and Agri Cooperation Initiative (AFACI) of the Korean Rural Development Administration. It is implemented by the ATI through its RTC in CALABARZON, the Partnerships and Accreditation Division, and the Information Services Division.

The TOT is being participated by 16 High Value Crops focals of the Agricultural Training Institute (ATI) – Central Office and Regional Training Centers and Learning Site for Agriculture (LSA) cooperators from regions CAR, 3, 4A, 5, 6 and 10.

It aims to provide participants an in-depth understanding and skills on crop specific cultivation practices, plant nutrition management and irrigation controls, greenhouse farming system, automation and operations, pest and disease mitigation and management strategies of fruit crops and leafy vegetables.

During the opening program, ATI Deputy Director Antonieta Arceo shared that ATI wants more advocates and trainers like the LSAs which serve as the agency's partners in modeling Precision Agriculture technologies in their respective communities. Arceo emphasized the relevance of adapting to new technologies to keep up with the fast-paced world just like what Bukid Amara is doing.

Likewise, ATI CALABARZON Center Director Dr. Rolando Maningas formally welcomed the participants in their region. Maningas looks forward to everyone's active participation and thanked the participants in accepting the challenge. *"Sama-sama na hikayatin ang mga komunidad na mag adopt sa mga smart farming practices na ito,"* Maningas said.

Part of the opening was a quick tour with Bukid Amara Owner and Chief Farmer, Mike Caballes and their agriculturists, Lady Lee Alcala and Henry Nanali. They gave a brief demonstration the smart features of their greenhouses which will be discussed in-depth, throughout the training.



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### **February 28-March 1 (Days 2 and 3)**

Bukid Amara owner Michael Caballes led the hands-on activities in their greenhouses on Leaf pruning & Hand Pollination, Seed Sowing & Seedling Care Maintenance, Drip Irrigation Installation, and Plant Density Workshop.

Caballes shared that these steps are critical in the management of the greenhouse and the produce you are growing. The said activities are part of the module on Greenhouse Farming System.

Other discussions circled on Greenhouse Crop Typology, Nursery Establishment & Management, Soilless Irrigation for Fruit crops, and the business of Greenhouse Production & Hydroponics.

Another exercise conducted was formulation of a Commercial Greenhouse Farming System wherein the participants designed viable, scalable, and commercial use greenhouses. Working in groups, they planned out their farm goals, locations, farm components, nursery, site development plan, and farm layout for their greenhouses.





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### **March 2, 2025 (Day 4)**

The TOT kicked off with the presentation of outputs on the planning of a Commercial Greenhouse Farming System. Each group showcased their plan which include their focus commodity, farm goal, target location and sales, nursery and greenhouse layout, and breaking down of costing among others.

This was followed by a quick visit to the greenhouse to harvest eggplants which they pruned and pollinated last week. The eggplants weighed from 300-450 grams per piece.

Afterwards, an end of module assessment was given to the participants to evaluate their learning. The questions circled on all the topics discussed within the first 4 days of the activity.

The group then visited the Korea Partnership for Innovation of Agriculture (KOPIA) Pilot Village which is also situated in Lucban. They toured around their greenhouses wherein string beans, bok choy, and other vegetables are being raised. The KOPIA Pilot Village is being maintained by the KOPIA-Sipag Farmers of Lucban.

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### **March 3-4, 2025 (Days 5 and 6)**

Day 5 started with Mr. Michael Caballes discussing plant nutrition including how to calculate the right amount of nutrients needed for your solution.

After this, a group exercise was given to the participants on making their own nutrient concentrate for lettuce and a workshop on nutrient calculation for lettuce to be used in hydroponics.

Each group presented their outputs in the morning of Day 6. This was followed by a module test covering all of plant nutrition topics and another plant nutrition and calculation exam.

Module 3, which is on Pest and Disease Management, came next and focused on plant pathology, integrated pest management, common greenhouse pests, and principles of plant disease control.

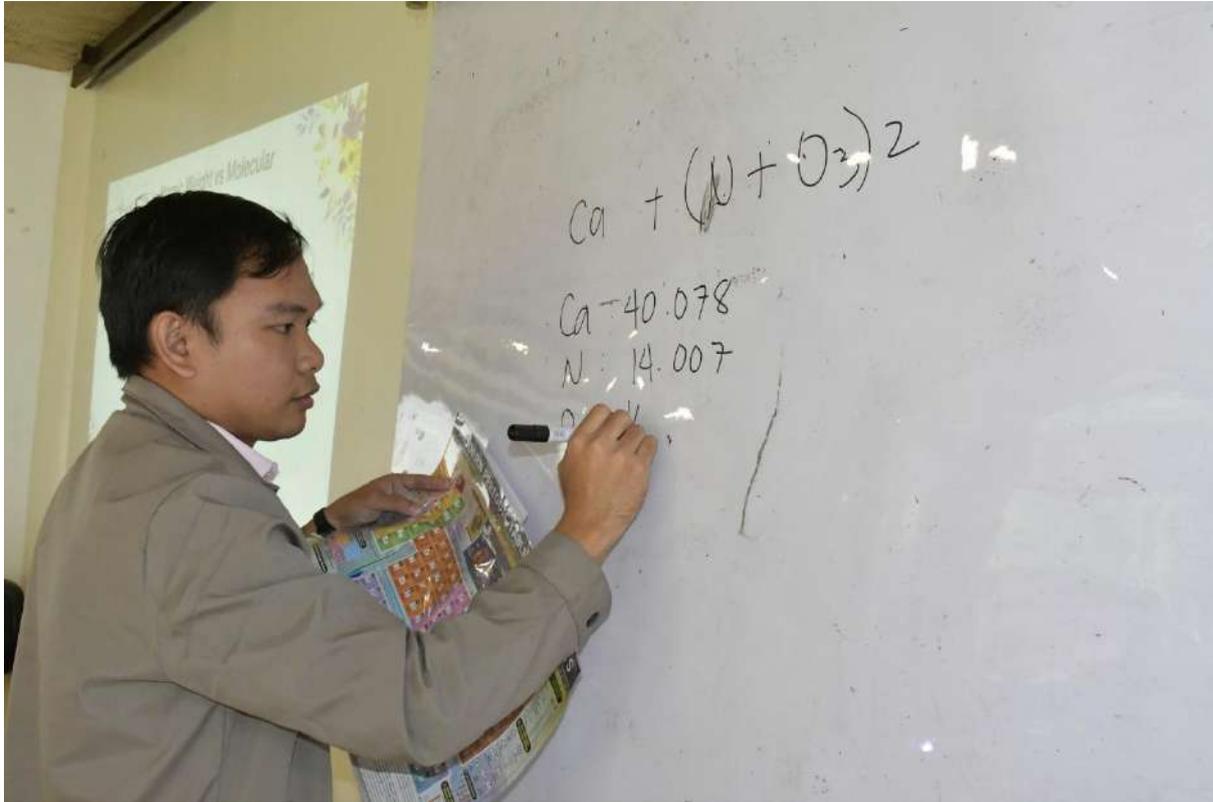
The final activity given to the participants for the day was creating an excel file of pesticide which will serve as their database. They encoded the details they gathered from one of the greenhouses in Bukid Amara. This database will serve as guide when they produce their spray program in the next sessions.

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### **March 5-8 (Day 7 to 9)**

Day 7 saw the participants took on vine clipping, vine training, trellising, and hand pollinating of Japanese melon. This was followed by presentations of each group's pest database, spray program, and pests they have identified in the greenhouse.

Meanwhile, drip irrigation calibration and maintenance was the focus of Day 8. Once they have determined that the cherry tomatoes and bell pepper in the greenhouse has been infected by pests, Mr. Michael Caballes asked the participants to formulate mitigation strategies to combat these pests. Before the day ended, each group presented their outputs.

For Day 9, which is the last day of the first half of the TOT, the group went back to the greenhouse to continue their hand pollination of Japanese melon. Each participant was assigned 42 pots to hand pollinate and monitor for the duration of the training.

The final session of the Day 9 is a lecture on Hydroponics and Hydroponics Farming System. The activity will take a break and resume on March 17 to tackle Greenhouse Bell Pepper, Eggplant, and Tomato Cultivation and Cultural Management.

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### Virtual Discussions (March 17, 34, and 31, 2025; Days 10 to 12)

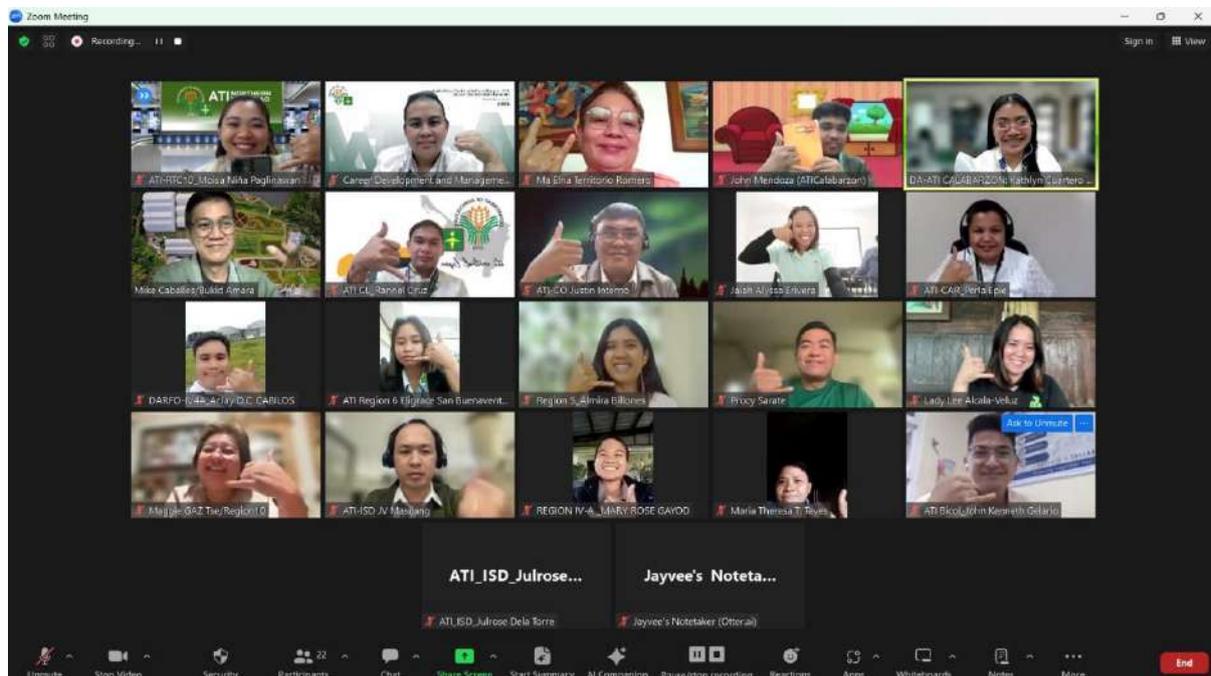
Day 10 covers the session about Solanaceous crops – learning the best practices for producing and managing tomatoes, peppers, and eggplants in a controlled greenhouse environment.

In Day 11, the participants convene via zoom to resume the lessons while they are in their own farms and offices.

Mr. Michael Caballes, Owner of Bukid Amara, leads the lecture on Melon and Cucumber Cultivation and Cultural Management. He focuses on understanding the crop morphology of these cucurbit plants and its management practice inside a greenhouse.

Since they are on their homebases, participants are expected to apply the learnings on their own gardens. They are to show their progress in the succeeding sessions.

Day 12, on the other hand focused on the discussions covering the prelude on the greenhouse farm operation and management, where components of farm operations, including farm activities and farm goals, as well as management activities were discussed. Agricultural marketing, entrepreneurship and branding were also covered.



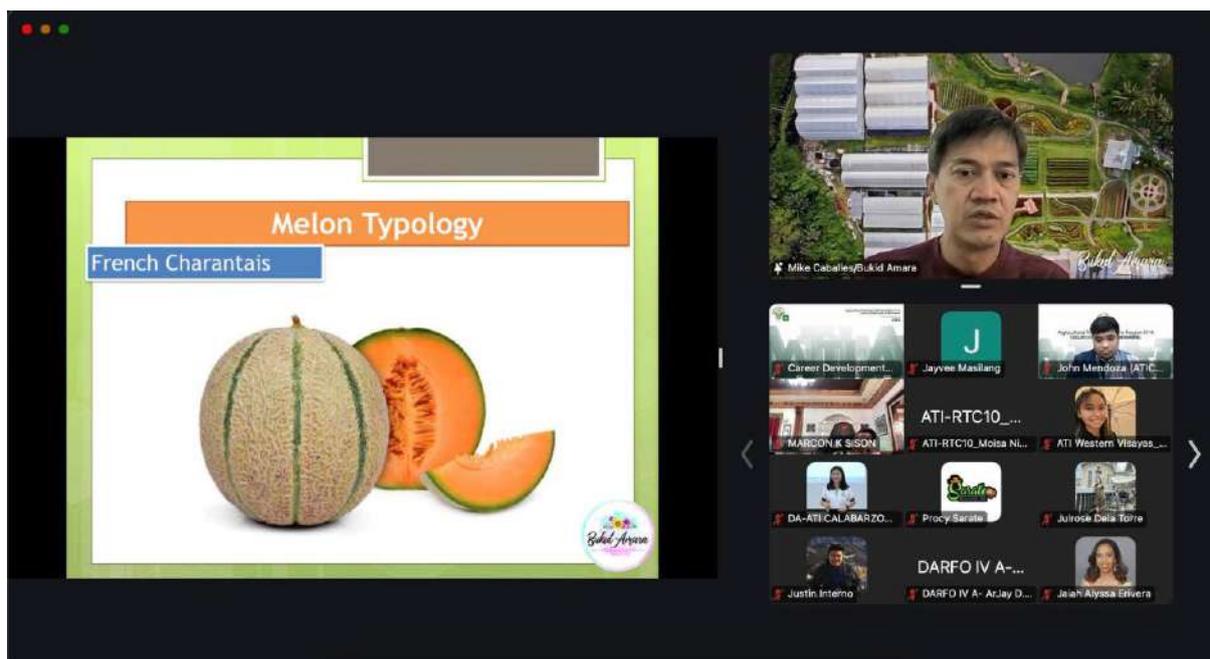
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**Culminating Week (April 7-11, 2025)**

As the Training of Trainers (TOT) on Smart Farming on Greenhouse Production for Fruit Crops and Leafy Vegetables nears its graduation, participants are back in Bukid Amara Farm, Lucban, Quezon for Phase 3.

Bukid Amara Owner and Chief Farmer, Mike Caballes and their agriculturist Lady Lee Alcalá conducted the end of module assessment for the 1st phase and online sessions.

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Also, Denso Philippines Supervisor and Farm Administrator Mikki Hontiveros discussed the Farm planning and management. These include series of activities and consultation in creating the farm plan operation.

During the last two days, the proposed farm operational plans for their respective regions were presented by Region 5, CAR, CALABARZON, Region 3, Region 6, Region 10, and ATI Central Office. In which were critiqued by their resource persons, respective Center Directors and ATI Deputy Director Antonietta Arceo.



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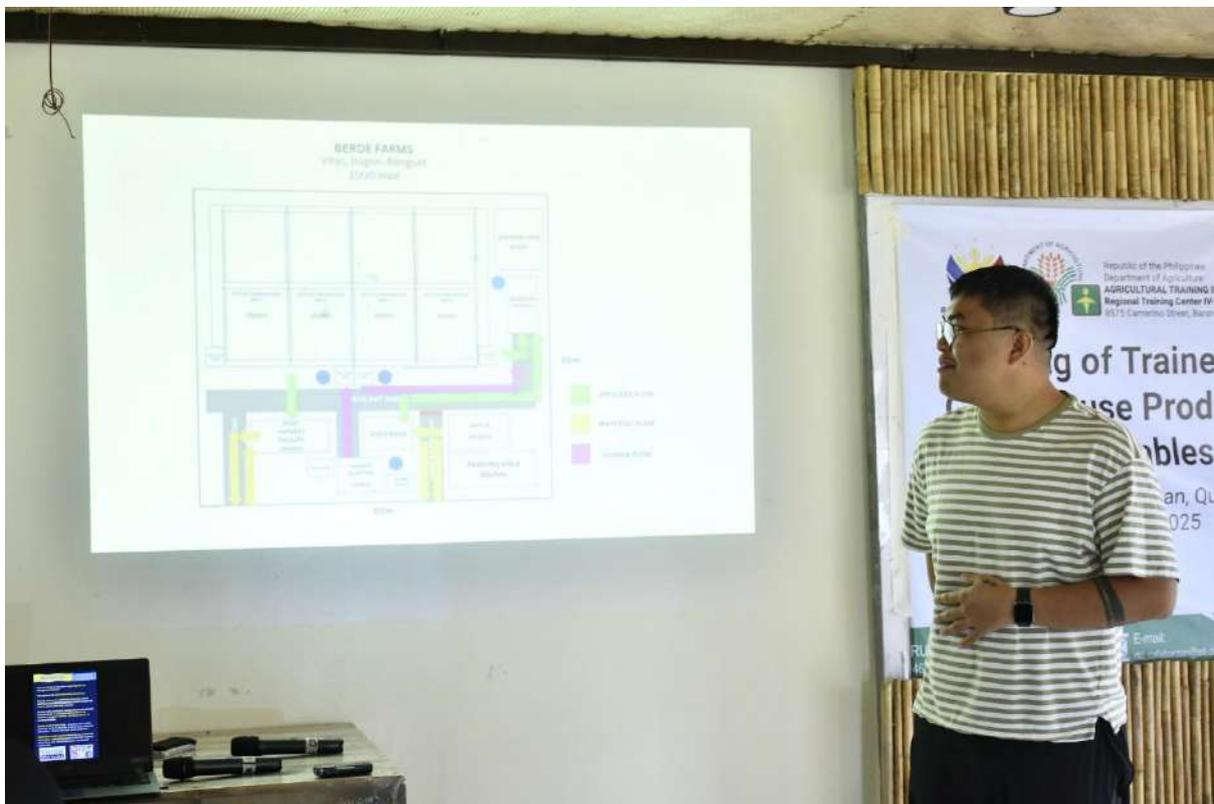
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**TOT Graduation (April 12, 2025)**

One hundred percent (16 of 16) participants were confirmed to graduate on April 12, 2025. They have completed one hundred twelve hours (112) worth of sessions, from the three phases (face-to-face and online).

The activity was graced by the ATI Director IV Remelyn R. Recoter, MNSA, CESO III, Deputy Director Antonieta Arceo, DA High Value Crops Development Program (HVCDP) Director Mr. Joseph Manicad, and the ATI Center Directors and their representatives.



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