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Plant Teams Innovation Demonstration Trial Report

Introduction:

Plant teams in Palestine are commonly used in horticulture where farmers plant legumes intercropped with olives or almonds. However, plant teams are not implemented widely in annual crops.

In Al Jalama area (a small village in the north of West Bank – Palestine) many farmers plant vegetables in greenhouses. Vegetable farmers used to practice monoculture and as a result they suffer from different kinds of pests and diseases.

The need for demonstration trials:

Vegetable farmers are seeking organic methods to combat these pests and diseases. They tried several actions including using sticky traps. We advised them to use plant teams / intercropping so plants can help each other to reduce the effect of the pests/diseases.

Location: Canaan Organic farm. Al Jalama, Jenin, Palestine

Methodology: CORE worked with an agronomist who is an expert in plant teams and organic farming to implement these trials and to show farmers how these plant teams can help minimize the effect of pests on the target crops.

Target crops:

1. Tomatoes.
2. Cauliflower.
3. Cabbage.

Plant teams used in the trials:

Team 1: Radish-(Cauliflower and Cabbage) team, where radish was planted as a barrier crop surrounding the cauliflower and cabbage. The demonstration shows the effect of plant teams on flea beetle *Phyllotreta crossiferae* infestation on the cauliflower and cabbage. Radish attracts the insect and therefore prevents these pests from attacking cauliflower and cabbage.

Team 2: Basil-Tomato team: The demonstration shows the effect of plant teams on the leaf miner moth *Tuta absoluta* on tomato. The basil acts as repellent to *Tuta absoluta* moths, reducing infestation and leaf miner damage on tomato.

Team 3: Eggplant-Tomato team: The demonstration shows the effect of plant teams on white fly damage on tomato. The eggplant is attractive to the white fly and reduces severity of insect infestation on the tomato.

Demonstration trial design and implementation:

The trials targeted popular crops which are commonly planted in this area of Palestine and aimed to assist in solving common problems that are of high importance to farmers. The plant teams were showcased to 83 vegetable farmers and demonstrations will continue to more farmers in the near future.

Crop	Planting date	# of plants	Area in m²
Cabbage	28/2/2021	150	50
Cauliflower	28/2/2021	150	50
Radish	11/3/2021	800	50
Tomato	15/3/2021	300	100
Eggplant	20/3/2021	75	50
Basil	28/3/2021	400	50

Results:

Demonstration trials showed that plant teams were effective in reducing the pests attacking tomato. Basil was successful in repelling *Tuta absoluta* and only small numbers of these pests were able to attack tomato fruits. The number of infected fruits was negligible and had a very low economic impact.



Basil-Tomato team

The white fly usually transports TYLCV (Tomato yellow leaf curl virus) to tomato plants. This virus severely attacks tomatoes with a high negative economic impact. The eggplant attracts the white fly, which focused its activity on eggplant leaves and didn't attack tomatoes, and white fly does not severely affect eggplants.



Eggplant-Tomato team



*White fly on the **pack** of eggplant leaves*

In the Radish – Cauliflower and Cabbage team, radish is planted surrounding cauliflower and cabbage. The radish attracts *Phyllotreta crossiferae*, pests that attack radish leaves (radish leaves have no value), preventing the insects from moving to cauliflower and cabbage.



Radish-(Cauliflower and Cabbage) team