



FARMER EXPERIMENTATION

To nourish your knowledge



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Israel Audocio Rodríguez Ramírez is a leader of the El Tigre community in El Salvador (Municipality of Jujutla, Department of Ahuachapan). In 2010, Israel Audocio started to give shape to his major life goal: to start a farmers' school.

Israel Audocio is a promoter on the subject of organic inputs. He's taken workshops from CVX and participated in the Advocacy Leadership School. All of this experience led him to start the Farmers' School Committee to support this dream.

"My dream is to standardise a farming way of life and produce food through organic agriculture, which is very different than the traditional way. That's where I got the idea of testing each lesson learned in order to have a solid base of knowledge and experience, and for people to transmit their results to others. That's how the farmer-to-farmer experience got started here.

I was worried that my plan would end up being just talk and no action. So I started to visit each of my fellow farmers to see how they were doing with their practices. If I saw someone with initiative, I'd invite them to my house to exchange experiences.



When we started in 2014, there were 16 families. Those that wanted to continue learning stayed in the School that we held at home, and those that weren't interested left. Organic agriculture is very much about determination, about developing your own experiences, about putting into practice on your own land the things you've learned. That's where the farmer experimentation method got started.

Right now we're working on creating and applying eight bio-fermented organic inputs to the crops. Using the A-frame we delved into making soil and water conservation works and with

infiltration and individual terraces. We've made bokashi, too. We're also learning how to manage trees through pruning, how to graft, and we're experimenting with a five-point planting system.

At this Farmers' School we're also building the capacity to host exchanges with other institutions and show our agroecological practices. For these events they commission us to provide breakfast or lunch, so each farmer brings whatever they produce, and here we decide what we're going to cook and share with the visitors...".

Purpose of farmer experimentation

The purpose consists in testing the improvements seen on other farms during community exchanges and on field days or putting into practice the teachings learned in capacity-building workshops. Farmer experimentation is done on a small scale and in a simple way. That's why it's important to write down basic information on record sheets. That way you can give information on how to carry out the practices and give recommendations on how to adapt them to the conditions on the farm and your own production system.

During on-farm experimentation, meetings and group visits are held for farmers to help each other out, and to share results on field days.

These are held within the community to make the new and improved techniques known. When the results are successful, people are encouraged to innovate, apply them to larger areas, and promote them with other farmer families.

When introducing a specific change to your plot or production system for the first time, you're innovating. When innovating with new practices, you learn. And from this learning, you gain new knowledge.

The purpose is to learn how to produce other crops to attain nutritional and food security, and to share knowledge on organic agroecological practices that allow for planned planting that will provide produce for market.



Characteristics of an experimenter

- ✓ Natural curiosity.
- ✓ Willingness to work and invest
- ✓ Interest in learning and openness to change.
- ✓ The desire to involve their family in experiments.
- ✓ Writes things down and keeps a record of the trial so as to faithfully pass along the experience.
- ✓ Learns from successes and failures.
- ✓ Is communicative and willing to share their knowledge.
- ✓ Persistence, and willingness to take risks.

Step by step: Leading on-farm experimentation

1. **Create and organise** a group to identify what are the main production problems and define and prioritise the topics of greatest interest. Give priority to ideas people bring about techniques they saw somewhere else, or to someone who has already made a change and wants the group to run the trial in order to demonstrate the benefits of the new practice, technique, or test.
2. **Observation is key** because it involves monitoring the behaviour of the crops or how animals respond to specific handling, practices or trials. Each participant must commit to improving their observational capacity to analyse test results and

effects. It's all about being willing to improve.

3. **The practice to be tested is called a "trial"**. Generally, there is only one, but when you're comparing to the traditional practice at the same time and under the same conditions there can be two. It can be, for example, how a crop responds when fertilised with chemicals in contrast to one that is treated with organic fertiliser, and then comparing the production costs and respective benefits.
4. During these tests or experiments, it's necessary to **plan and assign to each member of the group what they will do with their families** on the farm or plot so that the results can be analysed afterwards together. Define how often to program meetings or follow-ups to the experiments.
5. **Establish an experiment size** that will be easy to handle and record. The size depends on the subject, crop or animal husbandry, and financial capabilities according to the variety and complexity.

Subject of the experiment	Size
Verifying the yield of a crop that's been fertilised with bokashi.	Ground covered by a pound of planting seeds.
Effectiveness of organic fertiliser in citrus tree transplants.	Test organic fertiliser on 10 fruit tree plants. Apply five pounds of organic fertiliser at the moment of transplant.
Using velvet beans as ground cover for weed control a year before planting a vegetable garden.	Test on 100 square metres.
Applying bio-fermented fertiliser.	Apply to 10 maize plants. Apply to 20 vegetable plants.
Using hot water for pest control and to disinfect the ground.	One 1 x 1-metre vegetable bed.
Improving native corn seed.	12 pounds of native corn seeds per participant.

6. Define which records must be kept

for analysis. For example, presence and management of pests and diseases, production costs, and yields. There are many ways of record keeping. Choose a simple format with a logical order, and separately have people write down observations in a notebook as they see fit.

7. Keeping a record of income and expenses

is necessary for making decisions on whether to adjust or improve the trial, or discard it altogether. When you can compare data it's easier to convince yourself and others if it's worth it or not to continue with the test. It's important to keep a record of how much was spent on labour and materials, what was purchased, and what was obtained on the farm.

Name of the experiment: _____

Experimenter: _____

Name of the farm: _____

Location: _____

Planting time and year: _____

Labour required throughout the experiment

Activity	Number of days	Cost per day	Costs
Plot preparation			
Planting			
Weed control			
Fertilisation			
Pest control			
Harvest			
Other activity			
Total cost			

Budget per experiment activity

Activity			
Inputs	Quantity	Unit cost	Total cost
Seeds			
Organic insecticides			
First application of organic fertiliser			
Second application of organic fertiliser			
Other			
Total cost			

8. Share the results at the Farmers' School so that everyone can learn from each other. Make an evaluation based on the data and feedback from each participant in the setup of the on-farm experiment. For example, experiments on organic inputs, native corn selection, piñuela

(bromelia pinguin) barriers, drip irrigation systems with bamboo pipes, etc.

9. Organise field trips within the group to see trial progress and best results.

Tools and materials required

- ✓ Notebook
- ✓ Data recording sheets
- ✓ Pencil
- ✓ Machete
- ✓ Shovel
- ✓ Pick
- ✓ Hoe
- ✓ Seeds
- ✓ Organic fertiliser
- ✓ Sacks or bags
- ✓ Plastic buckets
- ✓ Wheelbarrow
- ✓ Pruning shears
- ✓ Grafting equipment
- ✓ Backpack sprayer
- ✓ Boots
- ✓ Paper and cardboard
- ✓ Thumbtacks

Costs and difficulties

As often happens in teaching/learning processes, it is the organisations which encourage and support farmer experimentation and promote many kinds of experiments. The costs of experimentation depend on the subjects of the experiments, the kind of technical support required, how far participants need to travel to attend, short and long term scope of results, and the capacities of experimenting farmers' groups.

In the case of the El Tigre community's Farmers' School, during group gatherings each person brings whatever food they can contribute and a group of families takes charge of preparing the meals.





During the preparation of bio-fermented products, each person pays a fee and CVX organises materials, plastic barrels and cooking pots, organic inputs, seeds, and some tools and equipment.

Identified difficulties

- ✓ Negative comments within the community can dampen the mood and discourage people from continuing the experiment.
- ✓ Achieving long-term results is difficult.

- ✓ Testing something new on the farm always involves risk.
- ✓ In farmer experimentation, the same trial is rarely repeated on the same farm.
- ✓ Not owning property.
- ✓ Not having funds to cover food and transportation costs.

Recommendations

In terms of methodology and basic information it is advisable to:

- ✓ Compile information to combine available technologies that people know how to use.



- ✓ Be attentive to the evolution of new technologies that are implemented in the plot.
- ✓ Study and evaluate other tactics and practices to know which ones to combine.
- ✓ Expand your knowledge by testing small to see if the method works for your farm, and make necessary adjustments.
- ✓ Assimilate the results. The learning process is never over. Always keep the mind open to new possibilities, tasks, techniques, or recipes.
- ✓ Share knowledge. The advantage is that the more you share, the more you grow as an experimenter.
- ✓ Taking the risk of trying new things on the farm involves using your own criteria to decide what changes you want on the farm and what benefits you expect from making certain arrangements or designs by associating different crops.
- ✓ When starting a new practice, success is based on reconsidering crop management and trying out new associations and rotations, as well as companion plants or herbs that repel pests. Some agroecological practices focus on using natural products and knowledge of organic agriculture, especially in relation to fertilisation and pest and disease control. The aim is to obtain healthier and higher quality produce in profitable quantities that won't hurt the environment.
- ✓ Change often takes place in small steps. For example, first you change the variety, then the fertiliser, and finally the method of pest control.
- ✓ Repeating the same experiment in several farms at the same time represents an advantage in farmer experimentation because you can more easily resolve problems related to the implementation of the experiment.
- ✓ It's important to carry out evaluations throughout the different stages of the crop. For example, during transplant, ridging, flowering, pest attacks, after applying an organic

pesticide, or establishing some sort of trap or cultural control. These evaluations are very useful for understanding the final result of the harvest. When you experiment with the fertility of the soil, it's necessary to carry out the test during several different planting seasons because these are slow processes that require more time to determine the benefits in texture and structure of the soils.

"A manager is not a leader. For me, leaders are the farmers who experiment because they want to improve their lives, they're thinking about their community, they value their families, and believe in what they do..."
Israel Audocio Rodríguez Ramírez.



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