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**Volunteer Name: Rodrigo Gonzalez**

**Country: Ethiopia**

**Country project: Fruit Production Technology  
(40<sup>th</sup> F2F Program)**

**Host: Alage ATVET College**

**Venues: Classrooms and orchards**

**Audience: Staff and Students**

**Number of people trained/assisted: 78**

**Date/duration: Two Weeks**

**Others: Recommendations to the**

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## **1. Assignment Objectives as in SOW**

- Equip target beneficiaries with skills and techniques on improved fruit crops production.**
- Develop TOT guidelines or manual on improved fruit crops production.**



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## **2. Achievement of the assignment objectives**

- I was successful in my task of providing the students and staff with Skills and techniques on improved fruit crops production.**
  - I provided specific instructions for all fruit crops found at the college.**
- I also provided the students and staff with skills and knowledge on a wide variety of fruit crops that can be grown in various regions of ethiopia.**



## **4. Anticipated Impact**

- In the short-term, I anticipate that the staff and students will follow my advice on orchard management and will have improved yields.**
- In the long term, I anticipate that the fruit crops will improve in health and overall productivity.**
- I also anticipate that the college will introduce different varieties of tropical fruits into their orchards (in particular different mango varieties).**

# Anticipated Impact

- I predict that the students will practice my teachings on pruning on the newly established avocado orchard.**
- I hope that they will plant all of the saplings at the height I recommended (above first taper root)...and will follow my instructions on how to plant tropical fruit trees.**
- I predict that the staff will teach the students about the proper way to prune an apple tree (open vase).**
- I anticipate that the students will continue to practice air layering, budding, grafting, trench layering, etc...and hopefully show other students.**
- I hope that the staff starts implementing my recommendations on irrigation and fertilization...if they do, they will no doubt have an increase in yields.**



# Trees buried too deep



# Recommendations

Recommendation	Specific Action	Responsible person	By when
1.Prune Trees to manageable size	Pruning (thinning and heading trees)	Plant Science Students and Workers	Before trees flower again (must immediately prune after harvest of fruits)
2.Graft local resistant rootstocks to superior varieties	Use the suggested grafting methods to change trees to varieties with disease resistance and superior market value.	Plant Science Students and Workers	Before the next flush of growth. Best to graft when buds are starting to swell.
3.Apply Mulch to ALL trees (either woodchips or bark);DO NOT USE EUCALYPTUS FOR MULCH	Apply mulch 12 inches away from trunk, at about 3-6 inches in thickness, and at a spread of around 3 feet.	Plant Science Students and Workers	Immediately after planting new grafted trees and as soon as conveniently possible for older trees.

# Recommendations

4. Remove soil from around stem of all fruit trees to the level of the first taper root.	Use the first taper root as the indicator for correct soil height.	Plant Science Students and Workers.	Plant trees like I suggested and remove soil on old trees from around the trunk to the first taper root. Modify basin irrigation accordingly. Use improved planting methods as soon as you plant and remove soil from older trees as soon as possible.
5. Fertilize Mango trees with a 0-0-51 (potassium) fertilizer twice per year	Apply 1 handful of pellet fertilizer (slow release) fertilizer for every inch of trunk diameter (measurement taken at 12 inches above base of tree). Disperse fertilizer evenly at drip line of	Plant Science Students and Workers.	Apply once when flowers emerge and again when fruits develop. No need for supplemental nitrogen if trees have been mulched (all the nitrogen they need comes from the mulch).



# Recommendations

	trees.		
6. Apply Integrated Pest (IPM) Management concepts to orchards	<p>Follow the advice that I provided on IPM. Make wise ecologically based decisions when confronted with pests and pathogens. Observe carefully and record populations of pest insects and beneficial insects. Invest in beneficial ladybeetles and wasps. Read pesticide instructions CAREFULLY and always consider how the pesticide can affect you and the environment.</p>	Plant Science Students and Workers	<p>Practice the principle of IPM on a year round basis. Follow the chart I provided on the IPM year. Use pesticides as a last resort when all else fails. Use intelligent horticultural techniques such as pruning as best line of defense against fungal problems.</p>

# New soil level (mango)





# New soil level (apple)



# Air Layering





# Air layering





# Grafting





# Grafting





# Grafting



# T-budding





# T-budding





# T-budding



# Pruning





# Proper Banana orchard maintenance



# Banana orchard maintenance



# How to plant fruit trees and planning fruit orchards







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## 5. Recommended future volunteer Assistance

- In the future, a vegetable crops expert can be brought to the college.
- Some one could also provide a more in depth integrated pest management course than what I provided.
- Assistance with using more modern and effective methods of irrigation...perhaps drip irrigation, micro-irrigation, etc. Currently the college focuses on furrow irrigation for vegetable crops.
- A future volunteer might also be able to convince the staff and students to plant beneficial plants next to their vegetable crops.



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# Insect damage on cabbage



# Onions grown with furrow irrigation





# Tomatoes not buried deep enough





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***Thank You!***