



Bringing modern orchard techniques to Tajikistan



Tajikistan



39th Parallel



Why go?

- Started in 2000 on a trip to Turkey
- Made 42 country visits

What do I do?

- I mainly teach pruning.
- Orchard management
 - IPM
 - Fertility
 - Insect and disease controls

Also

- Organic tree fruits
- Organic greenhouse vegetables
- Hazelnuts

Tajikistan history

- 1991
- Current situations in most central Asia (former Soviet block countries)

1991 – most central Asia
countries have forgotten how to
prune



Water – for people & for crops



Tree fruit crops

- Apricots – could be a world producer – 120,000,000 kg
- Plums – 330,000,000 kilograms
- Some very old apples

- Pomegranates

- - most growers pretty new at growing tree fruits.

- Few orchards, many gardens.



Environment - current issues:

- inadequate sanitation facilities, villages
- increasing levels of soil salinity
- industrial pollution
- excessive pesticides

Pruning

- Why they are not pruning now
- Virtually no equipment!



Equipment





After pruning



Equipment – try and find or bring







Ladders ?





Grafting knives



Equipment donated

- 300+ long pruners
- 300+ small pruners
- 250 hand saws
- 150 grafting knives
- 100 hand lenses
- 50 soil test
- Donations of over \$21,000
 - Always looking for more donations!

Typical – sandy and rocky



Try and determine the soil type

Clear the rocks

Recommend spacing

Find GOOD plant materials!!??

Dig holes and add compost (2005).



Irrigation system



Irrigation – if near a source.

How to get it to the trees?

North area only gets water when the pumps run- government shuts off electricity.



Apple Varieties

- Some of the best and oldest apples in Kyrgyzstan and Tajik.

And they want.....



What is happening with Chinese apple?

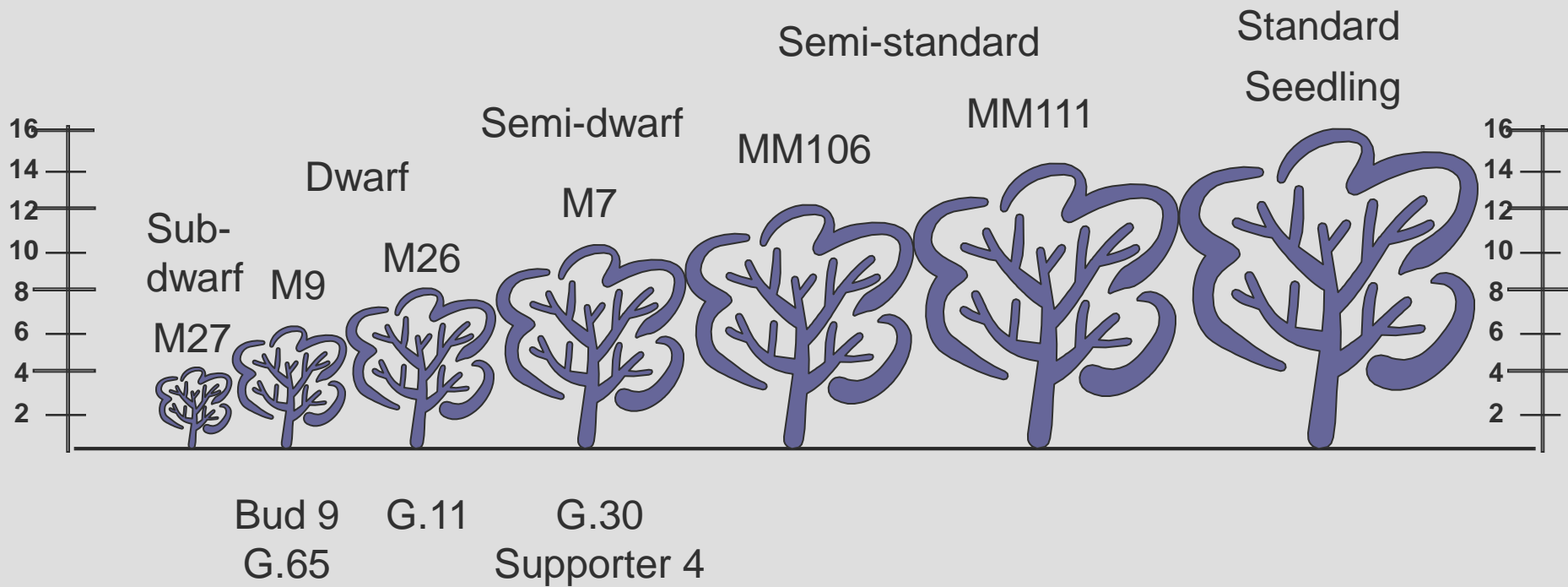


Problems - Daily pests - Sheep, Cow, Horses, Birds, Hares or Horse Damage



- Open pastures – the animals just wander most of the day until milking time in the evening.
- Fencing – a new technology

Size of most Tajikistan trees Slowly moving to?



Other Issues

- No fertilizer – cow wonders the orchard eating grass and weeds.
- No pesticides, too expensive. Chemical store story.
- No equipment
- Income - \$20 USDollar a month

Problems – still. A lot of
bacterial canker. Solutions ---



Apple Scab if no chemicals, do what?



If anthracnose – then what?



Capnodis tenebricosa – control??

Bores into the tree roots.



Cherry and apricot gummosis and canker. Controls?????





UC Statewide IPM Project
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Oregon - Pest Controls

- Late winter (Jan.-Feb.-March) disease control
 - fixed copper - diseases
 - dormant oil – to smother insect eggs
 - If dense foliage_– needs to be pruned
 - Rake up infected leaves
- During summer
 - Keep tree aerated
 - Good sanitation
 - Keep from over irrigating
- Harvest
 - Destroy infected fruit

- **Teach about biennial bearing?
Double's their income!**
- **Teach about thinning? Removing
their income!**

What can fruit trees be used for?
Fence, fuel, fruit and fodder





Kinds of fertilizers

- Compost
- Chicken
- Sheep, cow, horse
-however

Fertilizers

- Animals wander the orchards and eat weeds and grass and trees BUT most of the manure goes.....







Sanitation and Out in the country!!!







Outhouse and village water supply

Note location of outhouse!!!



Describe the village public waterways

- New definition of gray water.

After demos and teaching– we get to eat. Usually 3-5 course meals.



■ IMPACTS

Humble people



Teach the teacher and give equipment.



Ross Penhallegon in the center with Tajik farmers and with CNFA F2F Tajikistan team. Isfara District July 2013.

Teaching the NGO agronomists.



TEACH 125-260 people each visit.



Tajikistan

- 6 visits
- Taught over 650 people how to prune.
- While visiting people again, they are pruning.
- Kyrgyzstan – since 2005, pruned over 750 acres.
- Equipment given to growers.

My poster child. Why?



Volunteer Opportunities

- Sub contract with US Agency of International Development
- ACDI VOCA
- CNFA
- PARTENRS OF THE AMERICA
- WINROCK INTERNATIONAL
- OTHER

- Information is available or talk with me

Questions ??????????



The End





Pest Control

- Late winter
 - Anthracnose- fixed copper
 - Scale, aphids and mite eggs- dormant oil
 - Scab- lime sulfur or wettable sulfur
- During bloom stages
 - Scab and mildew- lime sulfur, sulfur
 - Shothole borer- needles and pyrethrum
- Post-bloom
 - Scab and mildew- sulfur and captan

Scab

