

SUSTAINABLE FRUIT PRODUCTION PRACTICES

Sustainable fruit production is the production of fruits in a way that meets the needs of the present without compromising the ability of future generations to meet their own needs from fruits. Sustainable practices are important for fruit tree farmers as it increases fruit productivity and quality, improved market access and value chain; empowerment and improved management capacity; conservation of the environment and a step towards certification. Despite fruits playing an important contribution to our diets as sources of micronutrients and fibre, their production has received very little attention within our local settings. It is believed that tree crops can sustain themselves without proper management and thus more care is given to other food crops. The Department of Research and Specialist Services (Horticulture Research, Chiredzi Research) has received a number of concerns from farmers that their trees take long to bear, flowers abort, the fruits rot and their trees can just die to mention but a few. It is important to note that the establishment of fruit trees need proper procedures and care to enjoy their potential yield. Findings have shown that most backyard orchards are not well managed as growers mostly focus on watering ignoring the pest and disease requirements. Field survey results showed that most problem pest causing flower and fruit losses was the fruit fly and that causing death of trees was scale. The Department has developed capacity building for monitoring and evaluation of the fruit fly through use of lure traps. Focus has also been made on sanitation in fruit production as a method to control pests and diseases.

Quality fruit tree production starts from the nursery thus it is important to start with clean planting material which is free of pests and diseases. A number of propagation methods including seed, straight cuttings, layering, micro-propagation, budding and grafting have been used successfully within the fruit enterprise. Commonly used methods are budding and grafting were:

Budding is the insertion of a single bud under the bark of a stock in such a manner that the bud and stock will unite and grow as one plant (Figure 1).

Grafting is the insertion of a piece of detached shoot having several buds onto stock so that they unite and continue to grow as one plant (Figure 2).

Some seemingly difficult definitions but important to know for fruit tree growers:

Root stock is the portion of a plant on which scion is budded or grafted and which forms the root of the combination.

Scion is a plant which is top-worked on the stock, if it is a bud it is termed budding and if it is part of wood it is termed grafting.

Inter stock is the portion of plant budded or grafted onto the root stock and is compatible with scion.

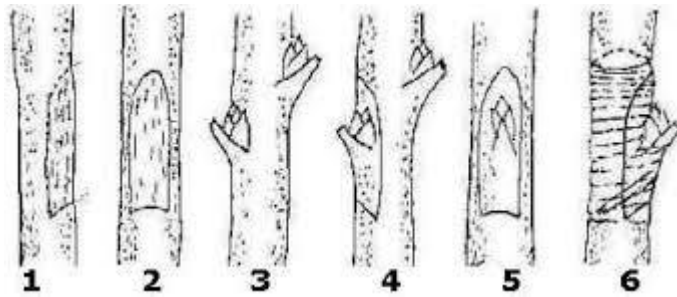


Figure 1: Steps taken in budding (Source: Adapted from the University of Kentucky)

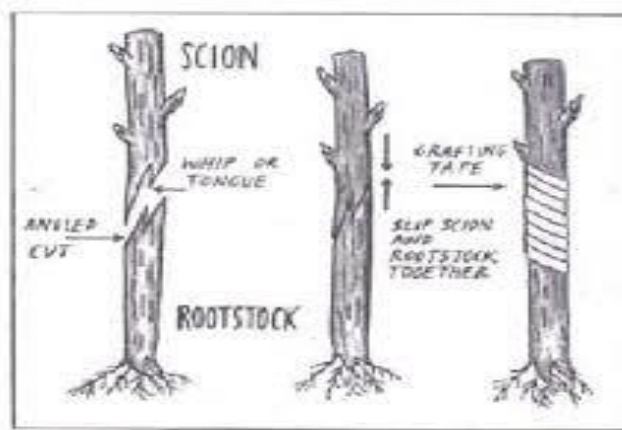


Figure 2: Steps taken in grafting (Source: Adapted from the University of Kentucky)

Advantages of budding and grafting

- Multiplication of plants that cannot conveniently be propagated by sexual methods
- To harness benefits of certain root stocks such as vigour, dwarfing effect, pest and disease resistance, effect on size and quality of fruit scion variety
- To change the undesirable and unproductive characteristics of established plants
- To speed up the growth of seedling selections in breeding programs
- To repairing damaged parts of high yielding trees
- As a tool for studying virus diseases

Proper management to make fruit trees fruitful include variety selection, appropriate fertilisation, watering, weeding, pruning, training, pests and disease scouting and control, proper harvesting and handling. When commercially produced farmers should know their market and its requirements.

Horticulture Research Center, Nyanga Experiment Station and Chiredzi Research Station offers services such as the supply of superior varieties, relevant information and training all aspects surrounding fruit tree production.

For more information visit our website: www.drss.gov.zw