

Sangam S.K.M College-Nadi

Year 12

Agricultural Science

Worksheet 1

Solution

WEEK 2

(Activity 1)

1. Explain one reason why paper mulch material is used during the hydro mulching of a new lawn?

The paper mulch material will help reduce erosion, and protect the seed until germination.

2. State one advantage of adding wood charcoal to the growing medium of a potted plant?

Allows air circulation; maintains consistent moisture content; is inert so does not decay; anchors plants; readily available; absorbs and slowly releases nutrients.

3. Describe one symptom which appears when a potted plant has been over fertilized?

Excess nutrients in the potting soil will desiccate or burn tender roots. High concentrations of nutrient salts also prevent the plant from taking up water so wilting is observed.

4. State one method used by farmers to prevent pests from eating the mature fruit of a species of fruit tree which you have studied?

Applications of appropriate chemical insecticides or fungicides. Usually, these chemicals are available as liquids (or wet table powder), dusts, or smokes. Spraying with hand-operated spray guns or portable mist-blowers is frequently used to control attacks in young plantations. With canopy closure, aerial spraying and dusting or smoking can be more effective and cheaper. -Biological control of insects has been employed with success in some situations; in most instances, the introduction of a parasite to control the insects is required. The greatest success in biological control is usually achieved after the problem has grown to epidemic proportions.

-Mechanical control, either by physically removing and destroying the pests or by eliminating the alternative hosts, can be effective

(Activity 2)

1. State one traditional method used by Pacific Islanders to preserve breadfruit?

Burying

2. Explain one reason why many Pacific Islanders consider the wood of breadfruit trees suitable for the construction of traditional canoes?

Breadfruit trees can grow to a height of 85 ft and all parts of the tree yield a latex sap which is useful as a sealant such as for canoe caulking. Its light sturdy timber was used for canoe outriggers and house construction.

3. Explain one method which farmers use to prevent the bruising of fruit during the harvesting process? ***Some farmers simply shake the fruit off the trees onto a tarpaulin.***

For the picking of individual or clusters of fruit, the fruit must be held and twisted until the stalk breaks. The picker may hold and harvest fruit with: their hand, a twister fruit picker, telescoping pole pruner and fruit picker basket

4. State one advantage of using close spacing between wood producing trees growing in a plantation forest? ***close'' spacing to attain early canopy closure, the suppression of weeds, the reduction of weed control costs and natural pruning of branches through shading.***

(Activity 3)

1. State reasons why the bark is removed before a log is washed and sawn into timber?

Debarking – the bark is removed to reduce wear on blades and to allow the evaluation of the logs.

2. Explain one precaution which farmers take to stop fires from spreading in a plantation forest?

To minimize the risk of fire through public education and involving local people in forestry. A main principle in protecting forest plantations against fire is that, where there is insufficient combustible material to allow a ground fire to develop, there is little or no fire risk. Dangerous and damaging plantation fires can only develop when fire is able to occur at ground level.

3. Explain the Dump Heap Hypothesis in relation to how agriculture began?

The “dump-heap” hypothesis proposed that the earliest form of plant domestication occurred because plants that had passed through the human digestive tract self-generated in midden deposits, or the equivalent of prehistoric restrooms.

4. State one reason why florists remove the stigma from harvested flowers?

Reducing lifespan of the flower

(Activity 4)

1. Differentiate between a photophilous plant and a sciophilous plant in relation to site selection for propagation?

Photophilous Plants: These are sun loving or Shade intolerant plants, their internodes are short. They are profusely branched, their stem is hard and thick. Their leaves are small, narrow, thick and linear. Their leaf cells are small. Sciophilous Plants: These are Shade loving plants, they are separately branched, their stem is soft and thin. Their leaves are large, board and thin. Their leaf cells are large.

2. State one reason why spiking is carried out during the maintenance of a lawn?

The surface of the soil often becomes hard due to dehydration and compression from use and vehicle movement. To allow water infiltration and aeration, small holes are made in the soil surface with prongs like that of a digging fork.

3. Explain one silvicultural method used to control pest attacks on established trees?

Include well timed, careful thinning after establishment of the forest plantation. Through thinning, poor and suppressed stems are eliminated, maintaining the plantation in a thrifty and vigorous growing condition. In young plantations, prompt removal and destruction of infested trees and shrubs can be effective in preventing the spread of pest attacks to the rest of the plantation.

4. State one reason why the majority of fruit trees in Fiji are not cultivated in orchards?

Take years to mature and produce fruits, majority of the fruit trees are seasonal.

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Week 1 – Activity Solution

1. Explain the importance of developing salt tolerant plants?

- *Salt-tolerant species may be to improve yields and uniformity of crops now grown in naturally salt-affected areas, to increase the types of crops that a farmer in a salt-affected area can grow, or to provide crops suited to marginal areas with limited water re- sources.*

2. Briefly discuss some ways in which horticultural plants are classified?

- *Classified according to growth habit, leaf drop, life span, temperature tolerance, temperature & sunlight intensity requirement and habitat preferences. Refer to pages 66 to 69*

3. Make a list of the ornamental plants growing in your home compound classify them according to their water adaptation?

- *Xerophytes-cactus, Hydrophytes-water hyacinth & water lily, Mesophytes-all types of trees, palm and grass.*