

Multi layer farming: an advance Inter cropping

Nikhil Singh

Dayalbagh Educational Institute, Agra, U.P

Corresponding author: niksjs@gmail.com

ARTICLE ID: 013

Introduction

Multi layer farming or multi tier farming is an advance way of integrated intercropping which allows growing multiple crops on the same piece of land in a specific time. It is one type of intercropping. Multi layer farming is mainly based upon cash crop and it includes cultivation of vegetables, fruits, flowers. Crops of different height, root and shoot pattern, photosynthetic rate, maturation time are selected in this farming technique.

Multi layer farming: A gift for Marginal, Small and Semi-medium farmers

In India, about 62%, 19% and 12% farmers are comes under category of marginal, small and semi-medium farmers. A huge population of farmers have very less amount of cultivable land so, with this farming technique farmers can maximize the use of land and can grow different crops, vegetables, fruits, flowers, medicinal plant in one time. This way marginal, small and semi-medium farmer can generate good revenue instead of having less amount of cultivable land.

Objective of multi layer farming

1. One of the major objective is to maximize the use agricultural land, water, manures and fertilizers
2. To promote sustainable agriculture
3. To increase the production of different crops in a specific time
4. To generate good income from one piece of land
5. To minimize crop-weed competition
6. To observe allelopathy phenomenon for further research purpose
7. To minimize soil erosion
8. To maintain soil texture and fertility
9. to minimize the effect of any insect, pest or diseases



Reference: News of Chhattisgarh (blog covering news)

Steps taken to perform multi layer farming

- A. **Crop selection:** Different crops are selected to grow. Crops must have different height and maturation period.
- B. **Field selection & preparation:** Geometrical shaped (Square & Rectangle) is considered as good land for multitier farming. Different operations like tillage, addition of FYM, composting should be done. A good seed bed is prepared with the help of tillage operation.
- C. **Seed selection & seed treatment:** A good quality of seed of different crop is selected. Seed should be pure, viable, vigorous and have high yielding potential. Seed treatment is done to disinfect them from seed-borne disease or soil-borne disease.
- D. **Irrigation:** Artificial application of water to crops. Irrigation is one of the important aspect for growth of plants. It is essential to meet the transpiration and photosynthetic requirements. Water serves as medium of dissolving the nutrients present in soil. In case of multi layer farming one must take care of irrigation. Neither much water nor less water is given. Average amount of water is mostly preferred. Ring basin method is good for irrigation.
- E. **Addition of manures & fertilizers:** Manures and fertilizers are given for proper growth and development of crops. Different crops required different amount of nutrition. so, basal method is mostly preferred. FYM, compost, NPK is most important for crop growth.

F. **Weeding:** Weeding is done to kill unwanted plants in field. Hand weeding, hoeing and sickling method is good to perform weeding in multi layer farming. Instead of this one can use weedicides to kill weeds. Insecticides and pesticides are used to kill pest and insects.

G. **Harvesting & Post-harvesting:** Removal of beneficial part from crops and store them in safe place.

H. **Packaging & marketing:** Obtained materials are packed and sell in market for income.

Examples of crops based on multi layer farming

- coconut+ coffee+ black pepper
- coconut+ banana+ coffee
- mango+ guava+ cowpea
- coconut+ jackfruit+ coffee+ papaya+ pineapple
- pigeon pea+ groundnut+ sesame
- pigeon pea+ rice(upland)+ black gram
- sugarcane+ mustard+ potato
- okra+ radish+ cluster bean+ beet root
- spinach+ radish+ onion
- pointed guard+ elephant foot yam+ cucumber+ cauliflower
- maize+ green gram+ groundnut

Multi layer farming at a glance

There are enough evidences that multi layer farming is beneficial over mono or sole farming. Sole crops might be fully damaged by drought, floods, hailstorms, hurricanes and epidemics. As a result famers will lose the whole crop and investment, and this will be disastrous for poor farmers. However, multi layer farming provides a type of insurance against crop failure reduces pest and diseases incidence and provides additional yield advantage from the intercrops as bonus yield. Legumes used as mixed/intercrops will provide synergistic effect due to fixation of atmospheric nitrogen and thus improving soil physical property and fertility conditions. There will be efficient utilization of resources like air, water, light, space, and nutrients. Multi layer farming is also important from marketing point of

view. As we are getting more than one crop simultaneously so even if the selling price of one commodity is less in the market, the other might compensate.

Conclusion

It is great farming technique. There is a need to create awareness about the importance and usefulness of multi layer farming over mono or solo farming. This can be done by involving active participation of both public and private institutions including farmers' organization in local, regional and global level. Indian agriculture, in general, characterized by low and uncertain return. In order to break the vicious cycle of low return equal low saving equal low investment equal low return, multi layer farming is necessary because it provide high return.

