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Biodiverse Farming System: A Sustainable Way of Farming

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SUMMARY

Integrated Farming System is an integrated approach to the farming as compared to existing monoculture approaches. It refers to agricultural systems that integrate livestock and crop production. Moreover, the system helps poor small farmers, who have very small land holding for crop production and a few heads of livestock to diversify farm production, increase cash income, improve quality and quantity of food produced and exploitation of unutilized resources..

INTRODUCTION

In recent years, food security, water scarcity as well as natural resources conservation and environment protection have emerged as major issues worldwide. Developing countries are struggling to deal with these issues and also have to contend with the dual burden of climate change and globalization. It has been accepted by everyone across the globe that sustainable development is the only way to promote rational utilization of resources and environment protection without hampering economic growth. Developing countries around the world are promoting sustainable development through sustainable agricultural practices which will help them in addressing socio economic as well as environmental issues simultaneously. Within the broad concept of sustainable agricultural 'Integrated farming system' hold special position as in this system nothing is wasted, the by-product of one system becomes the input of other.

What is Biodiverse farming system?

Biodiverse farming is a whole farm management system which aims to deliver more sustainable agriculture. Biodiverse farming systems include farming of livestock, aquaculture, horticulture, and allied activities. It is sometimes called as Integrated Bio-systems or integrated agriculture. It is system which comprises of inter-related set of enterprises with crop activity as base, will provide ways to recycle produces and waste from one component becomes an input for another part of the system, which reduces cost and improves soil health and increase production and/or income.




Concept of Biodiverse farming system

- An arrangement of recycling products of one component as input to another linked component
- Reduction in cost of production
- Increase in productivity per unit area
- Increase in total income of farm
- Effective utilization of family labours around the year

Objectives of Biodiverse farming system

- To integrate different production systems like dairy, poultry, livestock, fishery, horticulture, sericulture, apiculture, etc. with agricultural crops production as the base.
- To increase farm resources, use efficiency (land, labour and by-products) so as to increase farm income and gainful employment opportunity.
- To promote multi-cropping (out of the total cropped areas of 2,65,815 ha, only 46,697 ha (18%) is sown more than one crop), to sustain land productivity.
- To maintain environmental quality and ecological stability.

Why Biodiverse farming system is needed?

- High input costs
- For meeting the rising need of food, feed, fuel and fertilizer
- Nutritional requirement of family
- Increased demand of soil nutrients
- For increasing the income
- Employment
- Standard of living
- Sustainability

Components of Biodiverse farming system

Types of farming systems

- **Agro forestry:** Organic carbon, N-P-K content, 13-39% fungi population, 21-53% bacteria: population, 9-53% actinomycetes population and 18-77% microbial biomass in soil, total income and B:C ratio found higher in case of different agro forestry system as compare to sole cropping system.
- **Agri horticulture**: Yield, net profit and B:C ratio found higher in case of agri horticultural system. Ber equivalent yield found higher in case of ber + mungbean (6 × 6 m) system.
- **Silvi pastoral**: N-P-K and organic content in soil, fodder yield and total revenue found higher in case of silvi pastoral system than arable sole pasture.
- **Horti pastoral**: High net return got from horti pastoral system and dry matter yield found higher in case of horti pastoral system than sole and natural pasture. B:C ratio found high in case of horti pastor system than arable cropping.
- **Shelter belts**: Shelter belts decrease soil erosion and nutrients loss. Integrated farming system fetched higher total earning and B:C ratio over arable farming.

Benefits of Biodiverse farming system

- Higher food production
- Increased farm income
- Sustainable soil fertility and productivity
- Integration of allied activities will result in the availability of nutritious food enriched with protein, carbohydrate, fat, minerals and vitamins
- Integrated farming will help in environmental protection
- Reduced production cost
- Regular stable income inclusion of biogas & agro forestry in integrated farming system will solve the prognosticated energy crisis

Constraints of Biodiverse farming system

Major constraints faced by farmers in integrated farming system were lack of marketing facility for produces from different enterprise, followed by heavy investment in the initial stage of starting and labor unavailability and its high cost.

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