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Impact of Various Organic Manures on the Growth and Yield of Eggplant (Brinjal)

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Brinjal (*Solanum melongena*), commonly known as eggplant, is one of the most important vegetable crops in India and other tropical countries. It is rich in dietary fiber, vitamins, and antioxidants. With growing awareness of health and environmental issues, organic farming is gaining popularity. Organic manures not only enhance soil fertility but also improve crop productivity sustainably. This article explores how different organic manures affect the growth and fruit yield of brinjal, based on observational data from a recent field study.

Types of Organic Manures Tested

In the study, four types of organic manures were compared:

1. **Farmyard Manure (FYM)**
2. **Vermicompost**
3. **Poultry Manure**
4. **Neem Cake**

These were applied at recommended doses to different plots growing the same variety of brinjal. A control group (no manure) was also maintained for comparison.

Table 1: Organic Manures Used in the Study

Treatment	Type of Manure	Application Rate (t/ha)
T1	Control (No manure)	0
T2	Farmyard Manure	20
T3	Vermicompost	10
T4	Poultry Manure	5
T5	Neem Cake	5

Impact on Vegetative Growth

Plant height and number of branches are good indicators of vegetative growth. Among all treatments, poultry manure showed the highest improvement in plant height and branch development, followed closely by vermicompost.

Table 2: Effect of Manures on Vegetative Growth (60 Days After Transplanting)

Treatment	Plant Height (cm)	No. of Branches
T1	38.2	6.3
T2	52.6	8.1
T3	58.9	9.2
T4	64.7	10.5
T5	49.3	7.8

Yield and Fruit Characteristics

Fruit yield is the most crucial economic trait. Poultry manure produced the highest yield, followed by vermicompost. The control group showed significantly lower yield and smaller fruits.

Table 3: Effect of Manures on Fruit Yield and Size

Treatment	Avg. Fruit Weight (g)	No. of Fruits/Plant	Total Yield (t/ha)
T1	78.5	8.2	9.4
T2	115.3	12.5	16.2
T3	121.8	13.8	18.5
T4	132.4	15.3	21.7
T5	110.2	11.4	14.7

Soil Health After Harvest

One of the key benefits of organic manure is its long-term impact on soil fertility. Poultry manure and vermicompost significantly improved organic carbon and nutrient content in soil compared to control.

Table 4: Post-Harvest Soil Properties

Treatment	Organic Carbon (%)	Available N (kg/ha)	Available P (kg/ha)	Available K (kg/ha)
T1	0.34	155	11.2	138
T2	0.52	184	17.5	164
T3	0.61	195	21.4	178
T4	0.65	202	23.9	185
T5	0.50	180	16.8	160

Conclusion

The study clearly shows that organic manures significantly improve the growth and yield of brinjal compared to no fertilization. Among the treatments, **poultry manure** performed the best, giving the highest fruit yield and improving soil health. **Vermicompost** also proved to be a highly effective and eco-friendly option. These results underline the importance of using organic manures not only for better crop productivity but also for sustainable soil management.