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PRINT: ISSN 0970-9274 ONLINE: 2456-6608
J. Hum. Ecol., 8(3) : 171-173 (1997)
DOI: 10.31901/24566608.1997/08.03.04

# A Study of Impact of Organic Farming in Pudukkottai District in Tamil Nadu

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**KEY WORDS** Organic Farming. Modern Farming.

**ABSTRACT** The Changes in agriculture in the past have resulted in environment pollution, degradation of soil health, loss of biodiversity, ill-effects of the alternative to the so called Modern Farming. Low yield is said to be one of the constraints in Organic Farming. The present study at Pudukkottai district in Tamil Nadu revealed that though the yield in Organic Farming was less than the Modern Farming, the yield difference was not too low. When considering the ill-effects of Modern Farming the benefits one reap from Organic Farm is more.

## INTRODUCTION

Every thing in nature is balanced. If we disturb nature it will result in series of changes within and without nature, which will ultimately affect the society adversly. Now exactly that is what has happened to 'Agriculture'. Previously, agriculture was the part and parcel of nature. Over years agriculture has undergone several changes, resulting in drifting away from nature. The changes in agriculture have taken a quantum jump during 'Green Revolution'. The changes have resulted in environmental pollution, degradation of soil health, loss of biodiversity, ill-effects of the agro-chemicals and others. 'Organic Farming' which aims at co-operating rather than confronting with nature is the alternative way to the so called Modern Farming[1]. Because of that now a days a new trend has set in among some farmers to slowly switch over to 'Organic Farming'.

The present research aims to study the impact of Organic Farming practices in Pudukottai District of Tamil Nadu.

1. Organic Farming practices are those farming practices, which do not use the synthetic chemicals; consume less energy; depend more on localaly available natural resources; recycle the waste and accomodate the food chain and allow more bio-diversity with in the system. Modern Farming practices are the conventional farming practices which are recommended by the State Agriculture Universities and Government Extension Agencies, with the use of machineries and chemicals.

## MATERIAL AND METHODS

A list of farmers following the Organic Farming practices was selected from the Low External Input Sustainable Agriculture (LEISA) office, Pudukkottai. There were about 300 farmers who registered their names under this network. From this list, 40 organic farmers were selected randomly. Another 40 neighbouring farmers who followed Modern Farming practices were identified for comparison. These selected farmers, that is, the Organic Farmers and the Modern Farmers were personally interviewed, with the help of a well structured and pretested questionnaire.

The study covered the agricultural year 1993-94 and data collection was made during the period April and May 1994.

## RESULTS AND DISCUSSION

Paddy, groundnut, sugarcane, ragi, gingili, tapioca, vegetable, soyabean, redgram, cowpea were the crops cultivated both in the Organic Farming and in the Modern Farming. Cumbu was grown only in the Modern Farming and samai, varagu, beans, maize, greengram, blackgram and horsegram were grown only in the Organic Farming.

*Impact on Yield* : The crop yields in Modern Farming were found to be more than the crop yields in Organic Farming (Table 1) and were found to be significant at one per cent level. Ragi, redgram, groundnut, soyabean, tapioca

**Table 1: The comparison of yields between the Organic Farming and the Modern Farming**

| S. No. | Name of the crop | Yields in kgs | | Signi-ficance | Increase in yield (times) |
|---|---|---|---|---|---|
| | | Organic Farming | Modern Farming | | |
| 1. | Paddy | 1279.50 | 1498.00 | Sig. | 1.171 |
| 2. | Groundnut | 427.00 | 776.00 | Sig. | 1.817 |
| 3. | Sugarcane | 1721.00 | 2483.00 | Sig. | 1.443 |
| 4. | Ragi | 684.00 | 1200.00 | Sig. | 1.754 |
| 5. | Gingili | 264.78 | 371.00 | Sig. | 1.382 |
| 6. | Tapioca | 5333.33 | 8250.00 | Sig. | 1.547 |
| 7. | Vegetables | 2500.00 | 5260.00 | Sig. | 1.704 |
| 8. | Soyabean | 842.86 | 1360.00 | Sig. | 1.614 |
| 9. | Redgram | 189.84 | 378.38 | Sig. | 1.996 |
| 10. | Cowpea | 344.83 | 634.50 | Sig. | 1.840 |
| 11. | Cumbu | - | 1300.00 | - | - |
| 12. | Samai | 675.00 | - | - | - |
| 13. | Varagu | 781.50 | - | - | - |
| 14. | Beans | 348.22 | - | - | - |
| 15. | Maize | 348.00 | - | - | - |
| 16. | Greengram | 478.48 | - | - | - |
| 17. | Blackgram | 341.65 | - | - | - |
| 18. | Horsegram | 277.78 | - | - | - |

Sig. = Significant at one per cent level

and vegetables in Modern Farming yielded about one and half times more than the Organic Farming. The yields in Organic Farming were low as the Organic Farming was in it is infancy. The crop yields in Organic Farming are expexted to increase in future.

*Impact on Income and Expenditure* : The gross income from each crop in the Modern Faming was more than the Organic Farming and was found to be significant at one per cent level. The net income of each crop except paddy in the Modern Farming was also more than the Organic Farming and found to be significant at one per cent level. However the total expenditure per acre was more in all the crops in the Modern Farming than the Organic Farming (Table 2). For the Organic Farming as well as for the Modern Farming, labour constituted the major share of the total expenditure for all the crops. Except sugarcane and groundnut, manure formed the major source of expenditure in the Organic Farming whereas except for sugarcane it was fertilizer which constituted the next major source of expenditure in the Modern Farming.

The benefit-cost ratios of paddy and sugarcane in the Organic Farming were more than the Modern Farming. But the ratios were more for the rest of the crops in the Modern Farming.

*Impact on Soil* : The Organic Farming requires only two or three ploughings, whereas the Modern Farming requires four to five ploughings. The physical condition of the soil

**Table 2: The comparison of gross income, expenditure and net income between the Organic Farming and the Modern Farming**

| S. No. | Name of the crop | Gross Income Rs | | | Expenditure Rs | | | Net Income Rs | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Organic Farming | Modern Farming | Signifi-cance | Organic Farming | Modern Farming | Signifi-cance | Organic Farming | Modern Farming | Signifi-cance |
| 1. | Paddy | 6659.62 | 7591.71 | Sig. | 4855.13 | 6775.75 | Sig. | 1804.49 | 815.96 | Sig. |
| 2. | Groundnut | 4858.00 | 8760.00 | Sig. | 3789.04 | 6241.26 | Sig. | 1068.96 | 2518.74 | Sig. |
| 3. | Sugarcane | 12973.57 | 18553.36 | Sig. | 9856.25 | 14165.65 | Sig. | 3117.32 | 4387.70 | Sig. |
| 4. | Ragi | 5872.00 | 10200.00 | Sig. | 4207.09 | 6035.00 | Sig. | 1664.91 | 4165.00 | Sig. |
| 5. | Gingili | 4321.00 | 6015.00 | Sig. | 3062.01 | 4010.00 | Sig. | 1258.99 | 2005.00 | Sig. |
| 6. | Soyabean | 7042.88 | 11330.00 | Sig. | 3691.99 | 4903.00 | Sig. | 3350.89 | 6427.00 | Sig. |
| 7. | Tapioca | 11466.67 | 17450.00 | Sig. | 4855.00 | 6922.50 | Sig. | 6611.67 | 10527.50 | Sig. |
| 8. | Vegetables | 5250.00 | 10870.00 | Sig. | 4328.00 | 5540.00 | Sig. | 922.00 | 5330.00 | Sig. |
| 9. | Redgram | 3767.12 | 7360.84 | Sig. | 2067.35 | 2920.95 | Sig. | 1699.77 | 4439.83 | Sig. |
| 10. | Cowpea | 4043.13 | 7329.50 | Sig. | 1815.23 | 2670.43 | Sig. | 2227.90 | 4659.07 | Sig. |
| 11. | Cumbu | - | 10850.00 | - | - | 4105.00 | - | - | 6745.00 | - |
| 12. | Samai | 4530.00 | - | - | 1901.88 | - | - | 2428.12 | - | - |
| 13. | Varagu | 3926.00 | - | - | 1705.03 | - | - | 2220.97 | - | - |
| 14. | Beans | 4876.64 | - | - | 2181.49 | - | - | 2695.15 | - | - |
| 15. | Maize | 3482.00 | - | - | 1973.66 | - | - | 1508.34 | - | - |
| 16. | Greengram | 3838.00 | - | - | 1530.54 | - | - | 2307.46 | - | - |
| 17. | Blackgram | 5203.93 | - | - | 1899.69 | - | - | 3304.24 | - | - |
| 18. | Horsegram | 2194.46 | - | - | 1480.27 | - | - | 714.19 | - | - |

Sig. = Significant at one per cent level

**Table 3 : Comparision of Benefit-Cost Ratio between the Organic Farming and the Modern Farming**

| S. No. | Name of the crop | Net income | | Expenditure | | Benefit-Cost Ratio | |
|---|---|---|---|---|---|---|---|
| | | Organic Farming | Modern Farming | Organic Farming | Modern Farming | Organic Farming | Modern Farming |
| 1. | Paddy | 1804.49 | 815.96 | 4855.13 | 6775.75 | 0.372 | 0.120 |
| 2. | Groundnut | 1068.96 | 2518.74 | 3789.04 | 6241.26 | 0.282 | 0.404 |
| 3. | Sugarcane | 3117.32 | 4387.71 | 9856.25 | 4165.65 | 0.316 | 0.220 |
| 4. | Ragi | 1664.91 | 4165.00 | 4207.09 | 6035.00 | 0.396 | 0.690 |
| 5. | Gingili | 1258.99 | 2005.00 | 3062.01 | 4010.00 | 0.411 | 0.500 |
| 6. | Soyabean | 3350.89 | 6427.00 | 3691.99 | 4903.00 | 0.908 | 1.311 |
| 7. | Tapioca | 661.67 | 10527.50 | 4855.00 | 6922.50 | 1.362 | 1.521 |
| 8. | Vegetable | 992.00 | 5330.00 | 4328.00 | 5540.00 | 0.213 | 0.962 |
| 9. | Redgram | 1699.77 | 4439.83 | 2067.35 | 2920.95 | 0.822 | 1.520 |
| 10. | Cowpea | 2227.90 | 4654.07 | 1815.23 | 2670.43 | 1.227 | 1.743 |
| 11. | Cumbu | - | 6745.09 | - | 4105.00 | - | 1.643 |
| 12. | Samai | 2428.12 | - | 1901.80 | - | 1.277 | - |
| 13. | Varagu | 2220.97 | - | 1705.03 | - | 1.303 | - |
| 14 | Beans | 2695.15 | - | 2121.49 | - | 1.236 | - |
| 15. | Maize | 1508.34 | - | 1973.66 | - | 0.764 | - |
| 16. | Greengram | 2307.46 | - | 1530.54 | - | 1.508 | - |
| 17. | Blackgram | 3304.24 | - | 1899.69 | - | 1.739 | - |
| 18. | Horsgram | 714.19 | - | 1480.27 | - | 0.483 | - |

in the Modern Farming is poor than the Organic Farming. Even the unploughed land is soft in the Organic Farming than Modern Farming. Because of the addition of more organic matter to the soil, the colour of the soil turns to black in the Organic Farming.

*Impact on Ecology* : Because of the long practice of the Modern Farming the soil becomes dead. After the introduction of the Organic Farming, the soil macro organism will slowly build up in the soil, earthworms will migrate to the soil improving the physical and biochemical nature of the soil. Soil degradation and soil erosion will also be arrested by plants. Natural prey and predators will be attracted to the field, maintaining the natural balance.

*Impact on Debt* : From the study, it can be seen that only 40 per cent of the Organic Farmers were indebted, whereas 90 per cent of the Modern Farmers were indebted. The individual debt was from Rs. 2000.00 to Rs. 5000.00 for the Organic Farmers, whereas it varied from Rs. 4000.00 to Rs. 12000.00 for the Modern Farmers.

*Impact on Technology* : As the Organic Farming needs less machine power, and is without synthetic chemical inputs, all the big agricutural input manufacturing industries will slowly give way to the village based small, less energy dependent cottage industries such as vermicomposting, bio-fertilizers, bio-pesticides and botanical pesticides.

*Impact on Health* : Nearly 40 per cent of the Organic Farmers have reported better health after the introduction of the Organic Farming. As the Organic Farming is free from chemicals and pollution, fresh air, clean water and good products, better health is possible.

*Impact on Society* : Community living with mutual love and affection, could be restored. Co-operation will be the order of the day. Intermediaries between the producer and the consumer will be reduced to minimum. Problems could be settled outside the court by the villagers themselves.

## CONCLUSION

When considering the impacts of the Organic Farming it has many positive impacts. However low yield is said to be one of the constraints in Organic Farming. But the study conducted in Pudukkottai District showed that there was not much difference in the yield. When considering the ill effects of the Modern Farming the benefits one will reap from Organic Farming are more.