# Model case of Natural Farming Practitioners

1. **Farmers Detail**

**Name-** Mr.Arvind Kumar Mohanty

**Address-** Village- Kansar,G.P-Jalda, Block-Lathikata,Dist-Sundargarh,Odisha

2. **Uniqueness of work related to Natural Farming:** The natural farming journey of Mr. Arbind Kumar Mohanty, a 61-years-old farmer from village-Kansar, District - Sundargarh, Odisha, focusing on his transition from conventional chemical-based farming to sustainable natural farming practices.Mr. Mohanty, who cultivates various vegetables including Brinjal, Bottle Gourd ,potatoes, along with fruit crops, and fodder corps initially relied on chemical fertilizers for profused growth and bumper yield and agro-chemicals for plant protection. He recognized the detrimental impact of these inputs on both human health and soil quality. This realization led him to adopt natural farming methods to enhance soil health, soil organic matter, soil carbon, soil microorganism ,drought resilience, and produces healthy disease-pest free crops by improving soil acidity, soil structure as well soil texture.

3. **Major practices of Natural Farming adopted: Details**

**i) Horticulture Crops**

| Crop | Variety | Season | Area(Ha) |
|---|---|---|---|
| Brinjal | VNR212 | *Kharif* | 0.2 |
| Bottle Gourd | Araasu | *Kharif* | 0.1 |
| Potato | Kufri Pukhraj | *Rabi* | 0.2 |

**ii) Mulching:** Mr.Mohanty usually uses Straw, crop residues and organic matter available on his farm for mulching

**iii) WHAPASA:** By adopting WHAPASA he maintain balanced water and aeration on his field for proper crop growth.

**iv) Integration of Animals**: Integrating animal husbandry into crop producing farms is one of the principles of Natural Farming. Integrating animals into a farm helps create a closed or semi-closed system where energy and nutrients are recycled. The use of animals in natural farming can play several important roles, contributing to the overall health and fertility of the farm ecosystem. Animals can convert non-edible biomass (e.g., grass, straw, kitchen waste) into food and other services while increasing soil

fertility with their manure. To maintain the organic nature of the farm he has reared 12 nos of indigenous cows such as Gir species for getting manure and urine for the preparation of concoctions such as *jeevamrita, beejamrita, and others that are useful for Natural Farming.*

| | | |
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|  |  |  |
| **Indigenous Cow breeds** | | **Slurry collection from cow shed** |

**4.** Details of area renovation centre development at Farm

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|  |  |
| **Preparation of Go-Krupa Amrutam in Anaerobic method** | **Processing of Jivamrit** |
|  |  |
| **Collection of Go-Krupa Amrutam** | **Application of jivamrit & Go-Krupa Amrutam through drip system** |

**5. Methodology of preparation of concoctions/bio-inputs/bio-pesticides**

**i)** **Bijamrit :** Prepared by mixing 20 L water, 5 kg cow dung, 5 L cow urine, 50 g lime, and a handful of forest soil. The mixture was fermented for 24 hours, stirred 2–3 times, and used for soaking seeds (10 minutes) or dipping seedlings before planting.

**ii)** **Jivamrit :** Prepared in 200 L water by adding 10 kg fresh cow dung, 10 L cow urine, 2 kg jaggery, 2 kg gram flour, and a handful of forest soil. The solution was fermented for 48 hours in shade with regular stirring. It was applied during land preparation and later at 15-day intervals @ 200lt per hectare.

iii) **Ghanjivamrit:** Prepared by drying 100 kg of desi cow dung(air dried for 4-5 days) + 1 kg Gur (Jaggery)+ 2kg Besan (Pulse flour)+ 2-3 lit Desi cow urine + a hansfull of forest soil and applied per acre at the time of sowing**.**

**iv)** **Neemastra:** Prepared by mixing 5 L cow urine, 1 kg cow dung, and 5 kg crushed neem leaves in a non-metallic container. After fermenting for 24 hours with occasional stirring, the solution was diluted to 100 L and sprayed at 7-day intervals to control sap sucking insects and small caterpillars.

**v)** **Dashparni Ark:** Prepared in 200 L water by adding 3 kg fresh cow dung, 5 L cow urine, crushed 5 kg neem leaves,2 kg custard leaves,2 kg karanj leaves,2 kg castor leaves,2 kg Narium indicum leaves,2 kg Calotropis procera leaves,2 kg papaya leaves,2 kg Vitex negundo leaves,2 kg aristolochia leaves,2 kg Tinospora cordifolia leaves , 2 kg green chilly paster, 250 gm garlic paste The solution was fermented for one month was applied @ 2-3 % to control all types of insects living in tree trunks or stalks and all types of large bollworms and caterpillars .

vi) **Go-Krupa Amrutam:** Derived from completely natural ingredient which include Panchgavya (Gomutra, Gomay, Milk, Curd & Ghee ) and Ayurvedic Herbs.Go krupa Amrutam is bacterial culture which helps to establish the colonies of friendly bacteria in soil which help to supply nutrients in easily digestible form to the plant for better growth and quality yield.

6. **Marketing strategy of production**: Mr. Mohanty sold his produces through local market as well as from the farm directly and he fetches good price due to the quality and chemical free nature of the products. However , certification is must for the better marketing of products.

7. **Economic Analyses:** Crops (Brinjal, Bottle gourd, Potato) under NF Plot doesn't give more yield as compare to the Crops (Brinjal, Bottle gourd, Potato) under Conventional Plot. But the farmer sold the produces with a good net return which is indicated by the Benefit –Cost ratio. Overall, the cost of cultivation is less and gross return is more in the NF plots due to the good quality and chemical free nature of the produce.

**Table: Yield and economics under natural farming and conventional plots**

| Crop | Plot Type | Yield (q/ha) | Cost of cultivation(Rs.) | Gross Return (Rs.) | BC Ratio |
|---|---|---|---|---|---|
| Brinjal | Natural Farming | 195 | 75000 | 292500 | 3.9 |
| | Conventional | 260 | 115000 | 390000 | 3.3 |
| Bottle gourd | Natural Farming | 185 | 47000 | 185000 | 3.9 |
| | Conventional | 195 | 65000 | 195000 | 3.0 |
| Potato | Natural Farming | 156.25 | 72750 | 187500 | 2.6 |
| | Conventional | 210 | 93500 | 252000 | 2.7 |

8. **Influence on other farmers:** Farmers from the neighbourhood as well as from other Villages are highly influenced and inspired by seeing Mr. Mohanty's interest and dedication towards the natural farming. Farmers were amazed by the good return with minimum cost of cultivation and good quality of produces. This success story served as a model, enabling farmer-to-farmer learning and knowledge exchange for wider community adoption.
9. **Impact:** This model case study highlights the positive economic and social impacts natural farming adoption. Economically, the farmer observed a significant reduction in input costs along with increased profitability. Interestingly, the soil health regenerated through natural farming practices, evidenced by increased organic matter content, soil microbial activity, and improved water retention capacity. These improvements helped to restore soil health and fertility. Overall, the study demonstrates that natural farming is a viable and sustainable alternative to conventional agriculture, encouraging more farmers to adopt environment friendly methods
10. **How KVK can help in promotion of NF:** KVK Sundargarh-II can set an example among the farmers on Natural farming with reduced cost of cultivation through this case study. KVK is involved in awareness camps, Demonstration and capacity building programs related to Natural farming. Even in future KVK will promote Natural farming. KVK can create more awareness to the farmers by applying bio inputs for chemical free soil and produces. KVK can organize field demonstrations and hands-on trainings to showcase the yield advantage, reduced cost of cultivation, and greater monetary returns observed in natural farming plots. KVK can provide technical support for preparing on-farm bio-input units, enabling farmers to become self-reliant in input production and use. Additionally, KVK can help farmers connect with local markets and collaborate with government agencies to facilitate access to subsidies and incentives, making the shift to natural farming both practical and appealing for the farming community.