

Ensuring Food Security through Mixed Cropping

By

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Anita Sudhakar Lokhande from village Aajgaon in Wardha district is 40 years old and has studied up to Class 11. Her husband holds post graduate degrees in Arts as well as Commerce. Anita and her husband are engaged in cultivating their Land. They have 4 acres of rainfed land and 3 acres of irrigated land. Anita's family comprises of herself, her husband and two children. Her son is pursuing a technical diploma course after completing his schooling while daughter has just completed her schooling.

Anita joined as a member of a Women Farmers Group-Ramai Jagrit Mahila Shetakari Samiti- promoted by MSSRF, in 2012. Anita was following the widespread practices of chemical intensive farming techniques in her farm before joining the women farmers group. As a member of the farmers group she received trainings and guidance on sustainable agriculture practices from the M S Swaminathan Research Foundation. Now, she practices sustainable agriculture on 2 acres of her land. She applies integrated fertilizers (Farm Yard Manure + chemical fertilizers); uses yellow sticky traps for cotton. She placed 5 sticky traps on one acre. Similarly she used pheromone traps for wheat and Bengal gram, in *rabi* season, at the rate of 5 traps per acre. She also prepares and uses bio-pesticides- *Nimastra*, *Bramhastra* and *Nimark* for controlling pests. She sprays the pesticides about 4 times during the cropping season, at times even before pest attack as a preventive measure.

She carefully learnt how to cultivate mixed crop through the trainings and exposures organized by MSSRF. She joined an exposure visit organized by MSSRF to the model farmer's field in village Neri. Shobha Masram, a model Farmer and member of a women farmers group of MSSRF, in village Neri discussed the benefits of mixed cropping with other women farmers. Anita was impressed by the experiences shared by fellow farmer Shobha and decided to adopt similar practices on her field. Till last year Anita was cultivating soyabean, cotton and pigeon pea in *Kharif* and wheat and Bengal gram in *rabi*. In 2013-14, she practiced mixed cropping on 2 acres of land in *Kharif* and 0.25 acres of land in *rabi*. She had sown chilly, long beans, cow pea, ladies finger, brinjal, tomato, cluster beans, broad beans, black gram, green gram, *Motitura* (minor miller) and sorghum in between cotton rows on 2 acres of land. Anita says that before she started practicing mixed cropping the space between two rows of cotton was unutilized. On 0.25 acres of land, in *rabi* season, along with wheat she cultivated spinach, fenugreek, coriander, radish and onion She also experienced that with mixed cropping the pest infestation gets naturally arrested. In the year 2014-15 Anita extended field under mixed cropping up to 3 acres in *kharif* and 1.5 acres in *rabi*. She harvested following amount of vegetables along with the main crops in the year 2013-14 and in the year 2014-15.

Details of Production in Mixed Cropping, Anita Lokhande's Field, 2013-14

2013-14			2014-15		
Mixed crop	Acreage	Quantity	Mixed crop	Acreage	Quantity
Chilly,	2 acres	21 kg	Chilly,	3 acres	15 kg

Long beans, Cow pea, Ladies finger, Brinjal, Tomato, Cluster beans, Broad beans Black gram, Green gram, Green Deccan hemp Red Deccan hemp		36 kg 36 kg 26 kg 50 kg 50 kg 12 kg 10 kg 10 kg 5 kg 10 kg 2 kg	Long beans, Cow pea, Ladies finger, Brinjal, Tomato, Cluster beans, Broad beans Black gram, Green gram, Green Deccan hemp Red Deccan hemp		32 kg 26 kg 100 kg 120 kg 48 kg 16 kg 25 kg 4 kg 2 kg 12 kg 3 kg
Spinach, Fenugreek, Coriander, Radish, Onion	0.25 acre	48 kg 16 kg 12 kg 25 pieces 20 kg	Spinach, Fenugreek, Coriander, Radish, Carrot Onion	1.5 acres	36 kg 48 kg 32 kg 120 pieces 150 pieces 100 kg

Of the 7 acres of land cultivated by Anita, soyabean was grown in 2.5 acres and the production of soyabean in 2013-14 was 31.5 quintal. In the remaining 4.5 acres cotton and pigeon pea were cultivated and the production of cotton in 2013-14 was to the tune of 40.5 qt and pigeon pea was 6.75 qt. Within the 4.5 acres where cotton was the main crop, in 2 acres of land Anita practiced mixed cropping. In rabi land under cultivation of wheat was 1 acre and 1.5 acres under Bengal gram production was 8 qt and 4.5 quintal respectively. Out of 1 acre of land under wheat, Anita practiced mixed cropping on 0.25 acres of land.

In the year 2014-15 Anita has grown soyabean on 2 acres and production was 12 quintal. The reduction in soyabean production was due to erratic rain. In the remaining 5 acres she cultivated cotton and soyabean. The production of cotton was 40 quintals and that of pigeon pea was 6 quintals. Within the 5 acres of land under cotton, in 3 acres of land Anita practiced mixed cropping in kharif. In rabi area under cultivation of wheat and Bengal gram was 1.5 acres and 0.5 acres respectively. The production of wheat was 10 quintals and that of Bengal gram was 5 quintals. In spite of adverse weather Anita is happy that she could sustain the productivity of her farm to greater extent in comparison to neighboring farmers and ensured food security by mixed cropping.

Details of crops grown and the production are given in the table.

Anita says that fresh green vegetables are not available in the village daily. They used to buy vegetables from weekly market at the block head quarters.. Weekly expenditure for purchasing vegetables for her family was to the tune of Rs. 200. More over the variety of vegetables they could get were very few. Currently, by adopting mixed farming she has reversed the situation. She is able to get enough fresh vegetables daily. The labourers of her farm also frequently take vegetables to their home. She also shares vegetables with neighbors and relatives. So she feels proud that not only her family but even her

friends get benefitted by adopting this cropping pattern. Interestingly, this helped her to strengthen her social bonding.

She has also prepared *papad* and *cakes* from green gram and black gram harvested from her farm. She prepared 7 kgs of chili powder and 2 kg of coriander powder with the dried chilies and coriander seeds. She also sold chilly at the rate Rs. 100 per kg. She has processed the cow pea and broad beans produce for use in rainy season. She reports that she didn't have to purchase onion throughout the summer. She is very happy that by adopting mixed cropping she has produced various grains, pulses and vegetables and by not having to pay for these in the market she has saved money. While she has reaped the benefits of availability of diversified food items, she has also ensured sustainability by retaining the vegetable seeds for cultivation later on. She has collected and stored as many as 20 varieties of seeds.

Anita also grows kitchen garden and diverts the waste water of her house in the kitchen garden during summer season. Besides cultivating vegetables she has planted five fruit trees i.e. lemon, Papaya, Custard apple, Guava and Pomegranate in her kitchen garden.

As a farmer, though Anita has always been engaged in farming she has never ridden a bullock cart. Couple of years ago, one day, when her husband had gone to the block head quarters, he was held up and informed her in the evening on phone that it might take few more hours to finish his work. Anita became worried about the bullocks that were in the farm. Finally she took a brave decision to drive the bullock cart and bring the bullocks back home. She shared that she felt awkward as she entered the village because usually women don't ride the carts and everybody was looking at her strangely. But the fact she could ride the cart gave her the confidence and she started transporting the harvested farm produce from her field to her house. She also started taking labourers from the village to her farm. She also feels confident that she can do harrowing, hoeing as well as irrigating the crops- activities usually done by men.

Anita happily shared that adoption of mixed cropping pattern rendered her good yield, acted as a natural pest management strategy and ensured the nutritional food security of her family. This is a case study of an empowered woman who has challenged the societal norms on woman's role in agriculture and rides her bullock cart with an air of freedom.



Anita Performing Agricultural Operation



Anita's Farm



Seed Collection by Anita