



## Return to the good earth in Sangli

Jayant Barve used to market chemical fertilisers and pesticides and practise chemical agriculture himself. In 1988, he switched to sustainable agriculture, and has never looked back since. In this interview he emphasises that despite much lower input costs, organic farming does give the same yield as chemical agriculture, sometimes even more. An interview by **Claude Alvares**

*Jayant Barve abandoned a career at the National Chemical Laboratory to become one of India's most creative and innovative organic farmers. He has been practising sustainable agriculture on his 14-hectare farm in Sangli district since 1988.*

*After teaching at a city college for a few years, he returned to his hometown and began taking an interest in farming. He set up a chemical factory on part of the land and a shop to market chemical fertilisers and pesticides. After following modern farming practices for 12 years, he changed over to sustainable agriculture. He closed down the factory and converted the building into a storeroom for vermicasts released from vermiculture. He also shut the shop marketing chemical fertilisers and pesticides.*

*Barve explains his conversion to sustainable agriculture as follows: "Modern agriculture is based on increasing inputs, machinery and energy. All this brings about soil degradation. The farmer has to take a lot of care in plant protection. He is consequently compelled to resort to costly and hazardous pesticides. These pesticides contaminate the water, soil and environment. The crop cultivated is thus highly poisoned. Tension-free farming with good output, negligible inputs of money and energy, supported by enhancement in soil quality is only possible through organic farming and vermiculture practices."*

*The soil on Barve's farm is mostly black cotton or stony laterite murrum, with a pH of around 7.0. The average annual rainfall is 500 mm, the rainy season being from June to September. There are six male and six female permanent full-time workers on his farm. He has three buffaloes, two cows, four bullocks and heifers and calves. Around two-thirds of the milk produced is sold at the local market, the rest is kept for consumption at home. The bullocks are used for farm*

***cultivation and bullock-cart transport. Barve does not use motorised implements or tractors on his farm.***

***Part of the land is reserved for horticultural crops like grapes, bananas, drumsticks, mangoes and amla; the rest is under seasonal crops such as sorghum, millets, groundnut, chillies, wheat and pulses like horse gram, pigeon pea, etc. Some portion is reserved for fodder for the cattle and forest trees like banyan and acacia. Barve also cultivates ginger every year.***

***Almost all the plots are surrounded by biomass, live fence plantations of giri pushpa (Glyricidia maculate), adulsa (Adathoda vasaka), bahava (Casia javanica), neem (Azadarichta indica), karanj (Pongamia glabra) and eranne (Jatropha curcas). Farm waste and cattle dung are used for vermicompost. Irrigation is through drip or sprinkler systems; flood irrigation is avoided everywhere on the farm. The vermiculture pits are kept moist with the help of micro sprinklers. Herbal preparations like vrikshayurveda and krishi parashar are prepared on the farm and used whenever necessary***

**You have been doing organic farming for 20 years. Could you tell us something about your background?**

I completed my MSc in physics and was working at the National Chemical Laboratory, Pune. I was also a physics lecturer at a reputed college in Pune for five years. Then I was asked by my father to return to my native place because we have property there and I was the only son. So I had to go back.

With some research of my own, we started a unit to manufacture textile dye intermediates. The name of the product that we were manufacturing was paranitro aniline. We brought this product into the market and the small factory that we erected was doing well until 1984.

Then a crisis developed because of the new government policy: import rates for the same product we made dropped, bringing the price lower than ours. So we had to close the factory. I wondered what to do next. I started the business of marketing chemicals, pesticides and fertilisers. We had a small laboratory in our office and we used to give suggestions to farmers about what to spray for which disease, after testing. Our business started growing.

We earned a bit of a name in Sangli district because we were the only consultants at the time (1984-1988) giving proper 'medicines' for particular diseases. We were marketing a NOCIL product. The business grew very nicely.

Then one day I was sitting in our shop and a farmer approached me and asked for a pesticide to repel the crows that were attacking the grapes in his vineyard. He told me that the crows damaged the grapes when they were at the ripening stage. I asked him when he was going to harvest the grapes. He told me he would be packing them the following week. I thought: if he sprays hazardous chemicals to deal with the problem, they will go along with the grapes to the consumer. What would be the impact?

This was the turning point for me into organic farming. Till then I had a farm of my own but I was not looking after it. I decided to do farming myself, and do only organic farming. I met several people and began reading up on organic farming. I met Dr Bhavalkar and Jambekar in Pune, and with their help we planted a grape plot of about 1 acre. We decided not to use any chemical fertiliser, so we started vermiculture. Before planting the grapes and six months after that, because of our laboratory and science mindset, we analysed the soil and observed how its nutrient and organic carbon levels had increased, so also its potash content.

After a year we arrived at the conclusion that this was the only way to grow grapes; that any farming system must practise vermiculture. So we started manufacturing vermicompost. The biomass was not available with us so we approached the Vita Municipal Council and bought vegetable market waste for three years, for our farm. We converted it to vermicompost and got very good results from it. Our grapes were of the best quality. We exported grapes from our particular group -- the Vita Village Farmers Group -- until 1994.

It then struck me that the limitation of organic farming was vermiculture. I had read that if you add organic carbon to the soil, the worms will grow automatically. You need not build a shed and put water on it to develop the worms. Give the soil organic carbon and it will automatically improve and the microbes will develop. And so I realised that vermiculture was not the only solution.

We started thinking about concentrated organic material and collected a number of things like oil cakes, phosphates and silicon oxide, bentonite and rock dust. I read somewhere that composting is not recommended in any of the ancient agricultural systems. Some of the literature I read on the subject came from Dr Rahudkar from Pune and Ashok Joshi, son of Mahadev Shastri Joshi who has translated and published ancient agricultural texts. In ancient times nobody did composting; they would collect dung, put it in a shelter, powder it, and sprinkle it onto the farm. That gave better results because it was not composted and it provided nutrition to the soil and microbes.

This stuck in my mind and I thought of adding 'raw food' to the soil -- organic carbon.

When we compost it in a pit, all the degradation happens inside the pit. Microbes in the soil do not get food. So we thought of putting organic microbes directly into the soil. We mixed organic carbon materials together and got good results. Again, we did lab tests continuously for two years.

Then my son Jaydev completed his BSc in microbiology. We started a unit to make organic manure at my place, and it's coming up nicely. We have a product called Sanvardhan that we are marketing all over India, mainly in Maharashtra, and also exporting. There's another product called Green Harvest which we are marketing in two districts only. This manure is formulated to replace chemical fertilisers totally.

The second aspect was that although soil quality was improving, we wanted to get rid of pesticides. In 1992, I closed down the chemicals and pesticide business. I also closed down the marketing business. I started reading the ancient books. Then I met Dr Nene from ICRISAT. I purchased a book called *Suraphala's Vrukshayurveda*. Professor Rahudkar was always writing something about herbal preparations. There's another book, *Return to the Good Earth*, a Malaysian publication. I started making some herbal preparations of my own and by 1995 our grapes were absolutely chemical-free.

We enjoyed a separate market; there was no certification. I would market it in my name and earn a good income from it. This continued up to 2000. From 2000-2003, there was a drought and we were unable to manage the grape plantation. I was forced to cut down the grape vines. After 2003, a small dam was built near my farm. I lost around 10 acres of land to the dam, but the rest of the 25 acres became irrigated land.

All the literature on organic farming that I read and the knowledge we gathered on the farm enabled us to do organic farming more consistently. We are producing a number of things including cereals and pulses, chickoo and amla. We have a plantation of around 900 mango trees. We have done grafting of mango trees. When I started farming in 1988, on the 40 acres of land, there were barely 20-25 trees. Today there are 5,000 trees of 54 varieties on the farm. I have maintained this biodiversity.

We are also growing crops like sugarcane, ginger and turmeric. In turmeric we have a black variety that is good for medicinal purposes. We grow jowar and wheat along with beans, red gram and horse gram. This year, we are in contract with a company to supply them specific vegetables for export. We also grow brinjal, tomatoes, onions, garlic and chillies. My farm is now self-sufficient.

**What are your outgoings on the farm? Earlier, you would buy chemicals, etc...**  
Today only the final product is going out, not money. My only cost is labour; no inputs

are being bought from the market. We buy electricity and concentrates -- such as oil cakes, rock dust and rock phosphate -- whenever needed. Today, a grape farmer's expenditure on pesticides alone, at current market rates, is Rs 24,000-25,000 per year. Fertiliser expenditure is about Rs 15,000-20,000. I am also looking after a farm for a friend who is cultivating organic grapes. There, our expenditure is like this: the input is our organic manure on which he spends around Rs 8,000-9,000 per year and around Rs 3,000-4,000 for herbal preparations. His expenditure is around Rs 14,000 per year, whereas a chemical farmer spends around Rs 55,000 per year. The only thing is that when a farmer cultivates organic grapes he has to be very alert about weather changes.

**You are one of those people who have come from the other side to this side (organic). Do you think you will ever cross back and use chemicals again?**

No, because our minds have totally changed. Even when we go out, whilst eating outside food, we wonder what pesticides have been sprayed on it. Having run a pesticides business for four years, we know everything about pesticides. Even if somebody gifts us a truckload of urea or chemicals or pesticides, we will not allow him to enter the farm because we are now enjoying the fruits of organic farming.

**What is the message you would like to give to those who say we cannot grow enough food through organic farming?**

This is not the case. Yields in organic farming and chemical farming are the same. In fact, after two or three years, yields start increasing (with organic farming) as is the case with sugarcane in our vicinity which is nearly 50-55 tonnes per acre. With wheat and jowar, yields may vary because of climatic conditions, but with sugarcane it doesn't. In my area, sugarcane yields are nearly 55-60 tonnes per acre with chemical farming while in my case it is 60-65 tonnes per acre. Besides, in contrast to chemical farming, our soil is improving every year, our water requirements are coming down, and input costs are reduced.

For example, for wheat in my vicinity farmers irrigate their fields eight to nine times per acre, by flooding. On our farm we irrigate the wheat five times. Hence we are saving a lot of water, electricity and labour. There is no burden of buying pesticides and spraying them, and the anxiety that the people spraying the crops could fall ill. My cattle are in excellent health. I sell one or two buffaloes and am now beginning cow-rearing. Everybody says that my cattle are healthier than those they buy elsewhere. Albert Howard says in his *Agricultural Testament* that the organic farmer is to be judged by the health of his farm cattle and the health of the plant.

**The problem is with other farmers. They see that you are saving money. They see that your yields are increasing, and they see that you do not have to buy chemicals or fertilisers or spray your crops. They see all this and still there is a**

### **mental block about organic farming. Why is that?**

The mental block is of two kinds. Before Independence we were almost slaves, and our minds are set like that. Whenever farmers want to consult about a problem, they go to the doctor or to the shopkeeper. They will not consult their neighbour. Farmers in my area come to my farm; they see how things are done. But they are not ready to swallow what is good because their minds are not set that way. We have been trying for the last 15 years to change this mindset through promotion, canvassing and seminars. But we have not had much success. I have been in the area for the past 15 years and have travelled a lot, at my own expense, advising farmers. But I am still not able to convert even two farmers per year, after meeting 1,000 farmers in a year.

The NCOF has a scheme to train 1,500 farmers. They have offered the scheme to my organisation, and we contacted 1,500 farmers. We went to them in their villages at night -- because farmers are free only at that time -- and had meetings with them. But whenever we go, their minds are set. They ask us whether we are going to give them subsidies. Secondly, only the women in the villages attend these programmes, the men do not.

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***(Dr Claude Alvares is an environmentalist and editor at the Other India Press, an alternative publishing house. He is also director of the Organic Farming Association of India, and is based in Goa)***

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