

Second Issue

September, 2010



Contact AWH

hydron@auroville.org.in

Welcome to the AWH Newsletter

Welcome! As you are reading this month's articles, AWH wants you to understand that these are the first of a series of articles on topics such as Bore Wells and Organic Farming. In future issues, these topics will be developed.

ORGANIC PRODUCE FROM THE BIOREGION

The organic produce we Aurovilians cherish, comes from various sources within Auroville. There are the farms such as Buddha's Garden, Annapurna, Solitude, Discipline, and etc.. In addition to Auroville's own farms, there are organic farmers in the bioregion who are happy to cooperate with our produce distributor and users, e.g. Auroville Food Link and the Solar Kitchen. Of course, a major reason for the farmers to adopt such a new technique is the increase in the market value of organic produce over their previous crops. In fact, Auroville Township is very near to the farmers and is happy to pay good prices for organic vegetables and fruits.

AWH has been working with several villages and their farmers over the past five years. The focus has been on Water Resource Management* through Dry land farming. Since successful organic farming can be done with an economy of water usage, using various irrigation techniques*. A number of farmers have been taught these techniques and presently employ them. The technology disseminated through ongoing dryland farming projects have created significant impact. The farmers have adopted the technology and have thus improved their crop yield. For the sake of sustainability, our bioregion farmers have been integrated by forming Dryland Farmer Federations*. The Federations will take steps for the development of the bioregion farmers by arranging inputs, and the introduction of new technologies in agriculture. Through the Organic farming approach the concern towards 'safe food' among the Aurovilians has also been met. In order to sustain this organic approach, the local production* of vermicompost, enriched biocompost using farm wastes, biosprays needed for various crops and the introduction of labour saving techniques are being integrated into the agricultural practices of the project farmers.

Recently, meetings have been held in Auroville which included many of these farmers. Through Food Link and the Solar Kitchen, it has been agreed that when the farmers of the bioregion harvest an organic crop, it will be purchased and distributed in Auroville. Thus, the bioregion farmers have become part of the Auroville Sustainable Food and Agriculture Project (ASAP). The objectives of the Auroville marketing link are:

1. To enable the farmers to get the best possible returns,
2. To reduce the price difference between the farmer and ultimate consumer,
3. To make available all organic farm products to consumers at reasonable prices without impairing the quality of the produce.

To make the farmers understand the required quantity of vegetables, a meeting was arranged with Auroville Food Link and the Solar Kitchen.

The various kinds of vegetables, fruits, cereals, millets were listed by the staff of Food Link and the Solar Kitchen. There is a huge demand since SK alone prepares meals for 800 to 1000 people every day. In addition, the quality needed to satisfy the people coming to Auroville from different parts of the world was explained to the farmers.

The way the SK handles and prepares food was shown to the farmers when they were taken to the Solar Kitchen. How the Solar Kitchen uses solar energy for cooking and the system employed for recycling waste water was also shown to the participants.

The cooperation with Auroville to distribute their produce upon harvesting is a great help to the farmers because the villages lack such facilities as food storage and food processing. In addition to marketing their produce in Auroville, AWH has made marketing contacts with such centres as Chennai.

* to be explained in future issues of the Newsletter

On the Borewells in our Bio region (I)

In our bioregion the need to access groundwater after the rains is essential for agriculture, as for research and monitoring purposes. Of course, the major, actually the only access to potable water for Auroville are our groundwater resources, accessible by borewells. As noted in Issue 1 of the AWH Newsletter, many wells have been drilled in Auroville. Over the years of usage, each well has a 'status' which can be assigned:

- Functioning
- Not in use
- Abandoned (collapsed, etc)
- Fully closed (filled up with soil)
- Observation tube wells (for monitoring the water level, & Quality etc.)

Another use for the existing bore wells is Artificial Recharge. Approximately 5 to 8% of rainfall percolates to the sub-surface stratum. Artificial recharge is one way to tackle the situation and increase the groundwater potential, an essential water resource reserve. As part of Research & Development, the groundwater Team of AWH is involved in water resources management. For this purpose, abandoned bore wells can be converted to Observation Wells by which water level and quality measurements can be monitored periodically.

Borewell drilling depends on the hydrogeological strata (layers of rock between the surface and the aquifer). Previously the water table could be found at very shallow depths, so that we could use the hand-drilling to bore wells for extraction of groundwater, the labour costs of which were low. Presently, the water table, including the groundwater level has become so deep that hand-drilling can no longer be used. Today, new wells can only be drilled mechanically, using a straight rotary rig. In terms of time, time,

labour and equipment, this much more expensive than before.

Another consideration when making a bore well is the casing of the bore well, which serves several essential purposes, some of which are:

- To prevent cave in of the hole
- To block silting materials i.e. fine sand and fine gravels, etc.
- To prevent contamination from the surrounding soil
- To provide suitable support for connection of the well's equipment, e.g. pumps
- To provide a passage for tubing/wires for down hole equipment

Constant maintenance of a well is essential. A borewell must be flushed periodically for the best yield and safety of the users, because groundwater may change any time. By flushing, dust, or waste and decayed particles are flushed out.

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However, there is a word of caution. In our bioregion there are over 6500 bore wells being utilised for domestic & agricultural purposes. This technology, which the World Bank introduced, with the Green Revolution, has created an ecological disturbances, actually causing falling water tables and threatening saltwater intrusion along coastlines. Therefore, as necessary as borewells are for both drinking water and agriculture, there is the negative side of over-extraction and the hygienic level of the bore wells themselves. In a future Newsletter, this negative side will be described as well as how AWH is attempting to handle that situation.

Organic farming & water conservation (I)

Until AWH began working with its project villages, the farmers' efforts were focussed on so-called cash crops. For example, sugar cane, casuarina. The water required to maintain these cash crops after the monsoon has come from and still comes from the water stored in traditional tanks and ponds. Depending on the condition of the tanks, the water stored for irrigation may last up to two or three months after the monsoon season. Further irrigation depends on extracting groundwater from borewells.

In order to develop village awareness, and cooperation of the farmers in each village, and later among the villagers in a cluster of three to five

August Rainfall

This year, we hear people say that there was a lot of rain in August. However, if we look at the average figures we see that a 'normal' August has 7 rainy days, exactly what we got with an average of a bit over 10 cm. However in 2010, we got almost 14 cm.

August weather varies over the years quite a lot. There were years when we got merely 20mm, but also wet years with more than 250mm. Overall, 2010 was reasonably close to the average for August in rainy days as well as in the amount of rain. Nevertheless, so far 2010 is a wet year. We are 10% ahead of the average total rain, and the monsoon is soon upon us!

villages, various associations must be formed. For the implementation of organic farming, AWH initiates the formation of Dry Land Farmer Associations (DLFA). In order to implement the various new organic technologies, small training sessions in both classes and the field can then be conducted by AWH. The first steps taken by AWH is to introduce to the participants what changes cooperative organic cultivation in their fields will bring about compared to their accustomed methods of cultivation. Through demonstrations, AWH first Introduced cooperative cultivation of organic farming to the farmers. A comparative study on the cultivation practices and economic returns between chemical and organic farming was conducted. Replication of the integrated organic farming model was taught through exposure visits to the fields of other successful farmers.

Organic farming relies on crop rotation,*green manure, compost, biological pest control, mechanical cultivation and excluding or strictly limiting synthetic pesticides and fertilizers. Along with these, improving *soil health, minimizing input cost and improving income generation was practiced by the Dryland Farmers Associations.*Biofertilizers, EM, Neem seed kernel extract preparation and field applications were explained to the participants.

Dry land farming is an integrated farming system. Moving away from simple cash crops, alternate cropping is introduced. The crops found suited to our project area and with a good marketing potential are tomato, brinjal, ladyfingers, chilli, annual moringa, gourds, black and green gram, tapioca, groundnut, banana, watermelon, maize and minor millets such as ragi, thennai and sami. There are also flower crops such as Crosandra, Tuberose, Rose, and Jasmine. Of course, paddy as rice cultivation is known, remains very important. Along with conventional organic paddy cultivation, a water conserving technology, *System of Rice intensification method (SRI) is also taught to the farmers.

Farmers asked how they could be compensated for the yield reduction during the first year of organic farming. It was explained that the yield would stabilize in the forthcoming season when the microbial population and the organic matter content of the soil increases with the expenses for organic farming being low. So in terms of economic value, in the end, this won't lead to loss for any farmer.

(*These will be topics for future Newsletters)

	Actual rainfall 2010			Benchmark rainfall (10yy)	
	Rainy days	Rain in mm	Cumm rain	Rainy days	Rain in mm
January	1	6.0	6.0	1	11.8
February	0	0.0	6.0	1	40.7
March	0	0.0	6.0	2	32.0
April	0	0.0	6.0	1	17.4
May	6	120.1	126.1	4	56.3
June	9	238.4	364.5	3	38.1
July	6	45.2	409.7	5	57.5
August	7	138.2	547.9	7	106.6
September				7	128.1
October				11	292.1
November				11	349.9
December				6	193.7
Total:	29	547.9		59	1324.2