

## DEMONSTRATION OF SUBSOIL IRRIGATION

Four important things for better harvest of any crop are balanced fertilizer and water management, pest management, growth enhancers and quality seeds of that crop. The last three farmers have to bring from outside at appropriate times. But balanced use of fertilizer and water farmer has to do continuously. To do this large farmers use drip irrigation technique which is not affordable to small farmers. Infact they do not have enough water to use it specially after monsoon. Hence it is common belief that the modern technology in agriculture is only for the rich farmers But YPS thinks differently.

### **Affordable Solution:**

Solution to low cost water saving method is the technique called 'Subsoil irrigation technology (SIT)'. Now the design of this technique is based on good water management. For this we must understand how much supplied water is actually utilized by plants. Most (80%) of the water supplied in normal way gets evaporated and the plants consume very less amount of it. So the key to avoid evaporation and hence wastage, is to supply water at the roots of the plants. And this is the basic idea behind SIT.

### **What is Subsoil Irrigation System**

It has three components viz semi-circular pipes of radius 5cm, adapter to join these pipes and mouths through which water is supplied. Length of a system is 8 meters. The semi-circular pipes have holes on the flat surface at equal distance for oozing water and dissolved fertilizers.

### **How is Subsoil Irrigation system is installed in farm?**

Before installing Subsoil irrigation system the farm must be ploughed properly so that soil gets loosened to a depth of 25 to 30cms (usually the area of maximum rootlets). Each Subsoil irrigation system must be installed in an area of 8 meters long and 1 meter wide. Or two Jeevanvahn is could be installed adjacently with the gap of half meter in the area of 8 meters long and 2 meters wide. This area must be well prepared (creating wafa- in local parlance) by mixing organic fertilizer like cow dung etc till the depth of the ploughed area. At the center of this demarcated area of width one meter carve a small gully of 10cm X 10cm. Within this gully fit the pipes with the help of adapters and at the ends attach mouths. Cover this Subsoil irrigation system with the mixture of fertilizers and soil. The capacity of each jeevanvahn is about 2.5 litres of water. After installation, supply water for 8 to 10 times within 2-3 days so that the pipe wets the area around it. Infact the area of 1 meter width and 20 cm depth around the Subsoil irrigation system arrives at an ideal situation (proper combination of water, air and heat/temperature) for the growth of plants.

### **Utility of Subsoil irrigation system:**

Crops/plants must be planted on the both sides of the subsoil irrigation system. It supplies water directly to roots unlike tradition way and drip irrigation method where water is supplied on the surface. Suppose that farmers take three crops every year (recommended for good life of farmer). For a hectare, 250 cm hectare water is required annually in traditional way of supplying water. Through drip irrigation technique the requirement is 125 cm hectare (50% saving). But through Subsoil irrigation system the requirement is as low as 30cm hectare.

Further through Subsoil irrigation system we could supply the required nutrients in proper proportion dissolved in water. Due to this plants would absorb more nutrients. Their capacity of absorbing nutrients is 1500 parts per million but usually the land has 600 ppm nutrients while 1000 ppm is the optimum necessity. So this need can also be met with this Subsoil irrigation system. And hence the observed growth of plants is much higher with high yield in this method.

Thus the utility of Subsoil irrigation system lies in flourished growth with very less water and proportionate nutrients. For small farmers this method is revolutionary.

By growing vegetables/flower crops through this method economic status of many would increase in short period. This would help them in breaking the vicious poverty cycle. And along with this the land would be occupied with the crops and hence its fertility would increase and soil erosion would stop.



### **Organic Farming:**

Today is the era of combining beneficial modern and traditional techniques. Organic Farming is the nothing but new version of neglected traditional wisdom. This stresses on the use of bio-fertilizer and bio-pesticide for better crops. Usage of cow dung is most visible form of organic farming. The methods of organic farming are the best ways to restore the fertility of the land. This would have dual impact for the farmers. First is that their land quality would increase and second their expenditure would reduce as pesticides required would be less.

YPS is promoting this method as much as possible for better ecological system of the whole area.