Prey, Predator and Presence of Human Concern

A Voice of Creative Farmers, Artisans, Pastoralists and Other Grassroots Innovators
A woodcutter went into the mountains to cut firewood, and there he saw two pheasants flapping agitatedly around a bush. When he went nearer and saw a snake on the point of devouring their eggs, which were in their nests under the bush, he took a stick and beat the snake to death.

Years afterwards he set out on a journey. One night, he lost his way in a forest and after a long trudge he at last came upon a house. He knocked at the door. A young girl answered and welcomed him in and gave him a good supper. Later the woodcutter asked her, “Do you live here alone, or are you expecting the rest of your family to return?” As he uttered these words the girl changed colour and snapped viciously at him, “Ten years ago you killed a snake with a stick. I am that snake. I was waiting for you, my enemy! Now I shall savour my revenge to the fullest. I am going to eat you up!” The woodcutter was very frightened and begged her to spare his life. “You were trying to eat the pheasants’ eggs,” he pleaded. “True, I beat you with my stick, but I had not meant to kill you; it was quite by accident, and I do apologize most earnestly for my deed. Do spare my life please.”

The girl considered the plea for a moment and replied, “Well if you wish to save your life, there is one way out. Near the summit of this mountain stands a deserted temple, and in it hangs a great bell. If you can sit here in this room and make that bell ring, I shall let you go free and unharmed. Now can you do that?” The bewildered woodcutter replied: “How can I ring that bell while I sit here? That is quite impossible.” “You mean you cannot do it?” said the girl. “Then you must die this very minute.” and saying this she transformed herself into a big snake ready to strike him. No sooner had she done so than the solemn gong of the bell rang out clearly to the night.

What had happened? Did the snake finally kill the woodcutter? Who rang the bell? There are several such questions but some important ones are: how do we define our responsibility when prey and predator are involved in struggle for existence? Can ecological relationship justify human indifference? Does human presence make a difference to Nature? (Source: A Korean Folktale from Family of Earth & Sky Edited by John Elder & Hertha D Wong, Beacon Press, Boston, pp 171-2.)
Consumers Can Conserve: Will You?

When economists say that ‘there is no free lunch’, they imply that someone or the other pays for anything and everything that we use, exchange or waste. But when we do not pay for it, the resource concerned tends to get eroded.

We have assumed that soil fertility, productivity and health, in general, will remain sound, no matter what do we do, how we use land or what chemicals we apply. There are many aspects of soil and water conservation which need attention. Just one aspect to which consumers can contribute, is related to the organic land use. Awareness about organically grown agricultural products is slowly increasing in our society. But even in this niche market, the space is being squeezed by the gentlemen/lady farmers. We have not paid attention to the fact that a large part of the agriculture in some of the most disadvantaged areas, such as drought-prone areas, hill areas, some flood-affected areas, and forest-fringe areas, is already organic. People are too poor economically to use chemical inputs. In many cases, production conditions are organic because we do not have chemical-intensive technological alternatives suitable for heterogeneous rain-fed conditions. How do we provide incentives to such people to (a) improve their incomes, (b) use innovative, non-chemical technologies which would improve productivity and (c) adopt land-use practices which maintain soil-ecosystem’s health and agro-biodiversity? How do we generate markets for organic products? Will consumers pay for conserving diversity, the health of the ecosystem and, most importantly their own health and well-being?

For the last three years, we have been doing a country-wide survey of green consumers, with the voluntary help of students at IIMA, and members of the Honey Bee Network. We found four types of consumers: pioneer mobilizers, populist mobilizers, aloof practitioners and the indifferent and indolent. The pioneer mobilizers are those who not only practise environment-friendly consumption behaviour but also persuade others to do the same. Populist mobilizers do not practise much themselves, but want everyone else to change. The aloof practitioners are the most difficult to find because they practise the correct behaviour but do not tell others about it. The last category, of course, is known to most of us. These consumers neither practise green behaviour nor tell any one else to do so.

Obviously the strategy to mobilize the support of each category of consumers for organic products will have to be different. We must begin by asking ourselves what proportion of our purchasing power has been spent in the last three months on green products, particularly food items! If the answer is nil, the reasons may be many. We may not know from where to buy even if we want to do so, or we may not have faith in the quality of the products available. In any case, if we do not buy the organic products, the farmers who grow them will not have the surplus as to engage in soil and water conservation, and the productivity will continue to decline.

I will like to hear from our readers as to what do they think can be done to reach different kinds of consumers, so that urban demand for safer, chemical-free food can stimulate investment in conservation by the disadvantaged farmers in poorly endowed regions. Here is an opportunity to pay our dues towards the laggards of Green Revolution and pioneers of conservation and organic production.
Napthalene to egg

Put a napthalene ball in a urinal pot, irrigate with urine for fifteen days and see amazing results - vow "an egg".

Dr D K Savera, Sikar

An Unusual Bird's Nest

You can't take pride in first
To dwell in a slum like that;
Man initiated long back
To live at the low ebb.

Recipe for Rejuvenating Taste

'Maddu Thopu' plant (Strobilanthes spp) is a small plant about three to five feet tall and with small leaves. With the onset of monsoon it turns lush. In the month of Kakada (July 15 to August 15) it turns rich greenish purple and is believed to have properties of 18 different kinds of medicines. On the 18th day of Kakada, the plant acquires the stature of elixir vitae and is said to have the power to invigorate the entire human system cleaning impurities.

On the 18th day of the month of Kakada, people collect tender stalks and leaves from the forest to prepare the juice extract. They wash and clean the leaves and tear them by hand. Then the leaves are boiled in water in a large brass vessel or earthen pot for about one hour to strain out the clear purple extract. The following preparations are made with this extract.

Maddu Koolu (Medicinal Rice)

Ingredients: ½ kg rice, one litre extract, jaggery syrup according to taste, ½ teaspoon of salt, ½ coconut ground finely.

Maddu Puttu (Medicinal Cake)

Preparation: Keep the extract on the fire and bring to boil. Add rice and salt and allow to boil for a few minutes. Lower the flame, cover the lid and allow to simmer till the rice is soft and well cooked. Stir occasionally, then add the ground coconut and jaggery to taste serve hot or cold.

Sitaram Singh, Nagpur
Indigenous Pest Management Across South and North: Parallels Between Dominican and Other Cultures (Part Two)

Gitta Roeth

Part I which appeared in Honey Bee Vol 8 (3), described how the peasants of the Dominican Republic (DR) built upon human healing systems to develop pest control methods. This part discusses how pest management practices from different cultures can be blended with very good results.

Naturaleza, an NGO in the mountain area of Santiago, DR, distributes barrels to peasant families that want to follow newly introduced non-chemical pest management practices. The distribution of barrels is a kind of incentive to motivate farmers to adopt the new technology.

It is interesting to note that in the immediate surroundings of the CREAR-project, (Centro Regional de Estudios Alternativas Rurales), where most of the herbal-pesticides have been developed, the adoption rate amongst farmers is comparably low. CREAR is an educational centre. It runs courses for regular students, technical staff of official and private rural extension organizations and farmers. It has adequate international funds. After finishing high school most of the students in DR usually leave the remote areas to continue studies or to search for a lucrative job in urban centres.

Comparing indigenous pest management practices of different cultures

The comparison of specific Dominican Indigenous Knowledge (IK) with that of other cultures sometimes reveals amazing parallels. Sharaby (1988) and Parrish (1994) mentioned different practices of traditional storage pest management in Egypt. Sharaby investigated the effects of guava (Psidium guajava) and eucalyptus (Eucalyptus globulus) leaf powders on rice weevil (Sitophilus oryzae) and granary weevil (Sitophilus granarius). Guava leaf powder had a rather toxic effect on these two pests, whereas eucalyptus had a stronger repellent effect. Parrish (1994) describes the fumigation of granary rooms with capsicum (Capsicum annuum) together with other components (kerosene, wood, rice straw or stalks) which are burnt inside prior to grain storage. Capsicum is also used in combination with ash and lime.

All these plant species exist in the DR as well. Thus, the same practices may be adopted locally, as the main problem pests are also similar to the Sitophilus oryzae: S. zeamays (in maize) and Acanthoscelides obtectus (in beans). Dominican farmers instead treat stored grain with grated wood of pine tree (Pinus occidentalis, -caribeae) or grated curd soap with pine essence. Earlier, they also sprinkled harvested pulses with the juice of bitter orange (Citrus aurantium) while drying them in the sun.

The most famous example of herbal pesticide is Azadirachta indica (Neem). The traditional use of leaves and seeds as biopesticides in crops and storage of seeds originally came from India, but in the last 20 years this specific IK spread to many other countries in Africa, Latin America and now even to the US and Europe. Today Neem is an essential component in many projects promoting sustainable agriculture and biological or integrated pest management.

Jain and Lata (1996) have shown a number of parallels in medicinal plant use in India and Brazil. A large number of practices described in this article are also used in the DR, but some of them are used for different purposes, while the potential of others has not been investigated yet. Global exchange of knowledge and mutual learning among farmers, as attempted by Honey Bee network, can amplify the knowledge base of each culture. Comparable exchanges should also be promoted in the case of herbal pest management. (Honey Bee and SRISTI have been pursuing research on known and unknown uses of various plants for the last eight years. NAPRALERT Database provides good references to known uses. :Ed).

German indigenous knowledge

European IK can also be considered for this purpose. In German biological or ecological agriculture, there are at least 20 different plant species known for their repellent effects, evolved from traditional farming practices and farmers experimentation. Many of these vegetable and spice species are also cultivated in the DR (eg garlic, basil, peppermint, tagetes, tomato, onion) and could be integrated into pest management.

Comparative belief systems in traditional plant protection methodology can also be figured out, for example, the integration of spirituality to combat massive occurrence of pests like Erinnyis ello in cassava and other caterpillar species both in the DR and in India. There are special healers in the DR who work with magic-religious formulas to kill or guide caterpillars or ants out of the field. In Sri Lanka, farmers organize special religious ceremonies to control leaf-eating caterpillars in crops (The efficacy of the rituals, however, must be carefully assessed lest we merely sustain superstitions :

Lunar phases and pest control

Certain lunar phases are considered to be auspicious for different farm operations and are believed to prevent...
pests and diseases. In the DR most peasants believe these influences are on crop growth and plant resistance, size and shape of fruits and tubers and storage qualities of harvested products. Storage pests like Sitophilus oryzae, S. zeamays, can be controlled and reduced considerably. Farmers consider full moon as the most appropriate time for cutting wood. Wood cut during the new moon on the other hand rots after a few months and is attacked easily by Kalothermis brenis. Similar beliefs are reported in India as well as in some local communities of USA.

In India farmers recognized an increase of termite population in certain lunar phases (Gupta 1997). In many other countries there have been a multitude of experiments investigating the lunar influences on crop growth and development cycles of insects (Schad and Endres 1997).

Other parallels in Dominican and Indian local practices may be identified. In both countries there are two special leguminosae type species which are known to rural people as fish poison and used for catching fish. Long ago, Dominican peasants in the northern mountain area used Tephrosia sinapou or Juanibré, a bush, to catch fish. They stacked the leaves and roots of the bush and threw them into the river. As a result the fish were blinded and died; pregnant animals drinking this water aborted. As the plant was well known for its poisonous and abortive functions, one of the species was investigated by the farmers for its pesticidal effects. Today resources of Tephrosia sinapou are very limited and hardly any fish is left in the mountain rivers. (Some tribals of the district Bharuch of Gujarat use any of the following plants as fish poison: (i) Bark of ‘chinara’ (ii) Leaves of ‘punja’ (iii) Plant of ‘agari’ (iv) Fruit of ‘gala’ (v) Plant of ‘chido’ along with root. The plant is crushed on stones near the stream and suspended in the water after stopping water flow with bunds made of branches, clay and stones. Among all these plants ‘chido’ is the most toxic for fish. refer HB vol 4(2&3) 1993, p 24. Ed).

In India farmers use the same method today using ‘dandavon’ (Acacia auriculiformis), a tree which was introduced from Australia to India in 1985. (Its other uses are not known to the author.)

There are many other parallels like the use of special protective plants with magic or spiritual functions to protect crops or people (e.g Ruta chalepensis which is used in the D R, India, Africa and Romania against the ‘evil eye’) or plants with certain toxic or repellent qualities used against rats, ants, cockroaches and parasitic organisms.

As Gupta (1997) commented on the variety of parallel indigenous practices: “The theory of simultaneous innovations seems to work.” Biggs (1980), Gupta (1981), Verma and Singh (1969) and several other scholars had drawn our attention to the potential of learning from local knowledge and innovations. Pastakia (1995), recently showed how the values of the peasants influenced the way new methods and approaches to pest management were explored. The real challenge seems to be to find ways of encouraging farmers to pursue their own experiments aided by farmer innovators from other regions as well as by empathetic formal scientists.

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Washing Away Whiteflies with a Rain Gun: Saga of a Sprinkler Designer, Annasaseb Udagavi

Arun M Balamatti¹ And B Sundaraswamy²

Not many may have seen an economical sprinkler system covering as much as 140 ft radius to irrigate standing sugarcane crop. Annasaseb Udagavi, a farmer in Sadalga village of Chikkodi taluk of Belgaum district in North Karnataka, has designed a sprinkler head which does not do just that but a lot more.

Twelve years ago, when hardly anybody knew much about drip irrigation, he pondered over the idea of using it in his own way. To save his betel-vine orchard from the acute scarcity of water, Annasaseb fitted PVC pipes used in electrical fittings after making perforations in them with nails. He spent Rs 30,000 to cover two acres of betel-vine in 1985. By irrigating for an hour each day, he successfully maintained the orchard for seven years. But poor prices for betel leaf and labour problems made him switch over to other crops.

Washing away pests: A novel way of pest control

Annasaseb then cultivated tobacco for a few years. It was during this period, that he started thinking about the sprinkler irrigation system. He believed that it was also the best method to wash down the aphids and white flies with a high pressure water spray and save his crops. Subsequently, he switched over to sugarcane cultivation in pursuit of better returns. Although he had dug another well for irrigating the sugarcane crop, the problem of salinity and the difficulty of irrigating the dense crop stands kept him busy searching for alternatives. This is where his thoughts on a sprinkler irrigation system started taking shape.

Birth of a new sprinkler

By studying the conventional sprinkler irrigation system at various exhibitions and locations, he came out with his own design to suit the requirements of sugarcane crop. He worked with wood at home and ultimately arrived at a suitable design which he got fabricated at a foundry. After installing it in his field, he further refined its design. To achieve a balanced shaft movement, Annasaseb added about 400 g of additional weight at the back. At the outlet, he provided a groove for fixing different sized nozzles to throw water to different lengths, as needed. Further, he introduced a locking system to prevent the sprinkler head from throwing water into the neighbouring fields. With all these refinements, Annasaseb now has an almost perfect sprinkler head which he has named after the goddess, Chandraprabha.

Comparison with other designs

The cost of installation and other advantages of conventional sprinkler system depend on the shape of the field, source of water and the crop to be irrigated. However, a simple comparison of a conventional sprinkler system with Chandraprabha Raingun clearly illustrates the advantages of the new innovation over the conventional sprinkler system.

Two ‘Chandraprabha Raingun’ sprinkler heads would be enough to irrigate three acres of sugarcane. The per head cost is Rs 3,500. The per acre installation cost is Rs 15,000, inclusive of the installation of three-inch PVC main pipeline and riser pipe, whereas, the installation cost of a conventional sprinkler system comes to a minimum of Rs 6,000 per acre with a two inch pipeline. It involves components like pump, main pipeline, lateral pipeline, riser pipe and the sprinkler.

Since the spread of conventional sprinklers is a maximum of 40 feet radius, it requires fixing of lateral pipelines and moving the sprinkler from one part to another part of the field. This is a laborious task. Chandraprabha Raingun does not need lateral pipelines because of its large coverage (a maximum radius of 140 feet). Also, because it is installed permanently, it does not require frequent adjustments.

Flexibility in use

The Raingun can irrigate one acre in about one and a half hours. Sprinklers generally have two nozzles, one for applying water over long distances and the other for short distances. But the Chandraprabha Raingun has a special LOPS nozzle which covers both the distances. Also, there is a provision to choose nozzle size: 17, 19, 21 and 23 mm to achieve the required throw distance. For instance, a 17 mm nozzle throws water up to 100 feet radius while a 23 mm nozzle can throw water up to 140 feet. A look at the figures in Table I worked out by Annasaseb reveals his thorough understanding of the working of the system.
Key advantages

The Chandraprabha Raingun can be a boon to sugarcane cultivators considering its many advantages:

(i) The sprinkler system can prevent 15 to 20 per cent of conveyance loss and can achieve uniform application of water, which is not possible in surface irrigation.

(ii) While saving in water consumption ranges from 25 to 50 per cent for different crops with conventional sprinklers, it is 60 to 70 per cent in case of Chandraprabha Raingun. Hence, it is possible to increase the irrigated area by more than two times using the same amount of water.

(iii) Along with irrigation, the sprinkler can be used for the application of fertilizers and plant protection chemicals simply by mixing them in the water tank. This can save a great deal of labour expenditure. More importantly, since the Raingun has a three-inch pipe and a wide nozzle, even composts such as biogas slurry can be applied to the crop through it.

(iv) Since the water is applied with force, pests like aphids, white flies, scales, are effectively washed down.

(v) At the time of harvesting, the farmers are instructed by the sugar factories not to irrigate the crop since it is difficult to transport the produce from wet fields. However, if the crop is not harvested and sent to the factory immediately after stopping irrigation, it loses weight owing to dehydration. By installing the Raingun, the farmer can go for a superficial irrigation without making the soil too wet while still enabling the crop to accumulate weight. *(This is obviously not a fair advice. If such cane goes to the factory, whether co-operative or otherwise, it will lose weight and in turn factory’s viability is adversely affected. If it is a co-operative factory, farmers are also affected. :Ed)*

(vi) After harvesting, the canes are stacked in the field in bundles for a while. If the leaves holding the bundles dry up, the bundles will give way during loading. Annasaheb uses the sprinkler to keep the leaves wet and bundles intact thus facilitating easy loading and unloading.

The Chandraprabha Raingun is an engineering marvel especially since it is an innovation by an illiterate farmer. Annasaheb says that he would derive more pleasure and satisfaction if it benefits a large number of farmers. However, formal and systematic research may be needed to ascertain its performance, especially under high wind velocity and dry hot winds.

Art sustains science

Annasaheb is also an expert sculptor who carves beautiful stone statues and is equally good at repairing antique statues. He has just returned from Japan after such an assignment. He loves travelling and seeing places, more so if it gives him an opportunity to learn something new about agriculture.

Presently, Annasaheb is busy giving final touches to a sprayer which he, promises, will be a good alternative to the laborious hand operated back sprayer. The new sprayer runs on a six-volt rechargeable battery and sprays uniformly to almost six to seven feet width using a metal wheel, found in any audio-record player. Once it is ready, it will be another boon to the farmer.

Acknowledgement

Sri B D Adimani, Assistant Director of Agriculture, Karnataka State Department of Agriculture, Davanagere, directed the researchers to the farmer.

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Table I : Chandraprabha Raingun: Statistical Details

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<th>Pressure psi</th>
<th>Diameter ft</th>
<th>Discharge gallon/min</th>
<th>Spacing ft</th>
<th>Precipitation inch/hr</th>
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The Rice-Fish Double Bind: ‘Khals’ of Assam

M C Talukdar and R K Talukdar

In Assam, rice-fish farming is a traditional practice, well adapted in the low land clayey soils of the entire Brahmaputra valley. In the old alluvial tracts representing the rainfed lowland alfisols, where rice cultivation is a common practice, farmers spare a part of the land for rearing fishes which enter through flood water. On an average, Assam receives about 2000 mm of annual rainfall of which about 70 per cent is received during kharif (June to October) season. Such heavy rainfall inundates the entire paddy fields, thereby offering an ideal opportunity for the fish to infiltrate the field along with the flood waters.

The transplanting of kharif rice is normally completed in the month of July. Farmers raise bunds around the entire field in this season to retain maximum rain water. The fields are generally rectangular or square shaped and bunds are normally made against the natural slope/gradient of the field. It is here that the farmers are found to apply their traditional wisdom and “kill two birds with a stone”.

Farming situations

During a survey of villages of Jorhat district, by a team of Green Plus Society, a voluntary organization, an unusual practice of cultivating rice along with a small ‘khal’ (small pond) on one side of the plot was noticed. The practice was studied further to find out the utility of the pond and its relationship with the socio-ecological system of the area.

Nine major farming situations were identified in the area. It is seen that winter rice is grown in all the plots during July-August irrespective of whether the plot had a previous crop or not. The previous crops may be summer rice, wheat, or mustard or the fields may have remained fallow. Such practices are well adapted to clay loam, silty clay loam and clay soils only. In light textured soils – sandy clay loam, loamy or sandy soils, such practices are not followed. But under these farming situations, it is possible to maintain the water in the field at a desirable level till the harvesting period. The ‘khals’ generally do not dry out before harvest of the rice crop.

The ‘Khal’

‘Khal’ is a local word which implies a man-made depression, usually dug out. It is a smaller version of ponds. Farmers dig ‘khals’ at the lowest point of their rice field for other purposes also. A typical rice field with the ‘khals’ can be seen in the figure below. The size of the ‘khal’ depends on the slope of the land, the amount of rainfall, the depth of inundation, period of inundation and current over-flow. The Khal approximately covers 1/100th part of the rice field. The normal size usually varies between three and six square meters. The whole rice plot is bounded by earthen bunds. The depth of the ‘khal’ is maintained around one to 1.5 m depending on the gradient.

Shape

The usual shape of the ‘khal’ is triangular, though there could be variations. It is dug at the lowest corner of the field. A ‘Khal’ is avoided in the middle of the holding (except when the field is exceptionally large (more than two hectares).

Utility

(i) Assam experiences both heavy rains and occasional droughts. The ‘khals’ become a source of irrigation during occasional drought periods, for instance during the flowering or grain filling stage of the rice crop.

(ii) The ‘khals’ are also a natural fish trap. Fish enter the fields along with flood waters and breed there till the water level in the field is sufficient. When the water level begins to recede from September onwards and the continuity with rivers and other sources gets disturbed, the fishes are trapped within the bunded plot of rice field. They become vulnerable to prey as the food becomes scarce. The ambient temperature also increases. As the water level falls further during October, the fishes migrate to the ‘khals’ for shelter.

(iii) Farmers use the ‘khals’ as a store for uprooted paddy seedlings before transplanting. Sometimes after transplanting, the excess seedlings are kept in the shallow water of the ‘khals’. The roots of the seedlings do not get...
Picking the Odd One Out: Weed Control in the Himalayas
Vijay Jardhari

Weeds are a constant source of problem for farmers. Many multi-national companies offer poisonous solutions in the form of chemical herbicides. Though the chemicals help to control weeds temporarily, the weeds grow again in larger number in the next season as they become resistant to the herbicides. Moreover, constant and prolonged use of chemicals can cause irreparable damage to the soil and water bodies.

Most of the farmers in the Garhwal region use traditional techniques to control weeds. With the introduction of new seed varieties, many new and unfamiliar weeds have appeared and spread profusely.

In the Uttarakhand region of middle Himalayas, paddy is cultivated right from the valleys up to 2000 feet altitude. There is a wide diversity of paddy varieties and also of the weeds. Some common weeds that grow with paddy are 'dhakura', 'mora', 'kukraiya', 'jhurra' and 'dhakuda'. Most of these weeds look similar to the rice plant. During manual weeding operations, women identify them easily and remove them and use them as green manure.

Recognizing look alike weeds

However, as it is very difficult to recognize some weeds in paddy field, farmers have devised ingenious ways to control them. 'Dhakura' or 'jhumroo' is one such weed. It is also referred to as a kind of wild paddy. While harvesting paddy, some ripened grains of 'dhakura' fall in the field and sprout in the next season. And in the subsequent years, the same 'dhakura' assumes menacing proportions and becomes very difficult to control given its close resemblance to the paddy plant.

It starts flowering and setting seed earlier than the rice plant does. While harvesting, the ears start shattering and seeds get scattered all over the field. The paddy crop suffers. After a few years, the whole field is swamped by 'dhakura' which affects the paddy yield. After a few cycles of growth, the 'dhakura' seeds become stronger and resistant to disease, drought and flood.

Farmers change the variety of the paddy in each season to control such weeds. For example, if the 'dhakura' weed is from the white stalk variety of paddy such as 'thaapchini', 'kangudi', 'nyuri' and 'gorakhpuri', farmers sow red stalk variety of paddy such as 'rikhva', 'lalmati' and 'bangoi'. Once the plants grow, weeds can be easily identified by the colour of their stalks. Farmers can then easily spot and remove the white stalked weeds from the red stalked paddy. The uprooted weeds can of course be used as manure. The farmers lend each other these seed varieties whenever necessary. This exchange also helps in maintaining the diversity.

Organic herbicide

There is another weed called 'mora'. Its roots grow deep and cling to the soil making it extremely difficult to uproot. The Uttarakhand hill-farmers have invented an organic herbicide to control this weed. Apricot grows in abundance in this region. The oil extracted from apricot seeds is used for various medicinal and culinary purposes. The seed husk, known as 'haddela', is considered to be a waste product. The elderly and experienced farmers, however, believe that 'haddela' can be used to control 'mora' weed. They scatter the husk in their fields to control 'mora'. It is also a good manure.

Vijay Jardhari is a young committed activist in the Garhwal region. He spearheaded the Beej Bachao Andolan and conserved a large number of local rice varieties at his own farm. He is trying to conserve not just the biological diversity but also the diversity of knowledge. He describes here a traditional practice of weed control in rice.

1. Henwalghati, PO Nagni, Tehri Garhwal, Uttar Pradesh, Pin: 249 175

Contd from Page7

damaged but are cleaned in the process.
(iv) The 'khals' are harvested two to three times in a season depending upon the amount of rain water or overflow. About three to ten kg of fish are harvested each time. During winter season, these supplement the food supply.
(v) Some local varieties of fishes such as 'goroi' (Murrels), 'koi' (Climbino perch), 'singi' and 'magur' (Cat fish) help in controlling the weeds and loosening soil near the roots of the rice plant.
(vi) The ducks reared in the 'khals' also help in loosening the soil around the root zone of the rice plant. However, ducks are allowed into the field only after the rice plants are established well in the soil.

1. Department of Extention Education, Assam Agricultural University, Jorhat, Assam.
We have been discussing the issue of incentives for individual herbalists and also for the community for last eight to ten years. The case of Thiru Muthu Servai describes vividly the cost of our inertia. By not developing a practical solution we are losing this knowledge very fast. We welcome comments from the readers. :Ed.

**Nam Vazhi Velanmai**  
(Tamil version of Honey Bee)  
Mr. P Vivekanandan, Editor  
SEVA, 43, T P M Nagar, Virattipathu  
Madurai 625010, Tamil Nadu

Thiru Muthu Servai is almost 90 years old and lives in Kuralampatti village of Mannar Thirumalal District. He is famous for his traditional treatments. Muthu Servai has planted a rare herb ‘Vatha madakki’ (*Clerodendrum phlomides*) on the boundary of his field. This is a shrub with small leaves. It cures many human and cattle diseases and it is also known as ‘thuzhuthalalai’. Now Muthu Servai cannot even speak cogently. Nobody from the younger generation is willing to learn his store of knowledge. Some remedies practised by Muthu Servai are given here.

**8401 Hypothermia or shivering in cattle**

In extremely cold weather, the joints of the cattle may become stiff. A gunny bag soaked in fermented rice water is put on stones heated by burning rice husk. The extract of the ‘vatha madakki’ (*Clerodendrum phlomides*) leaves is poured on the heated gunny bag. The animal is given fomentation with this gunny bag. This treatment relieves the stiffness of joints.

**8402 Fractured bones**

Six pieces of ‘vasambu’ (*Acorus calamus*), six ‘valampurikkai’ (*Helicteris isora*), six peppers and a few seeds of ‘karuncheeragam’ (*Foeniculum vulgare*) are crushed together and mixed with three handfuls of ‘vatha madakki’ leaves and some water. A pinch of ‘kasturi’ is added to the mixture. The above mixture is administered internally while ground ‘vatha madakki’ leaves are applied externally over the fractured bone and bandaged after splitting with bamboo-sticks.

Muthu Servai Vaidyar, Kuralampatti village,  
Comm: R S Narayanan.

**Organic agriculture for better health**

Gloria Farm, which belongs to Aurobindo Ashram in Pondicherry has an area of about 100 acres. This farm is located in a place called Pillaiyarkuppam in Pondicherry. Organic farming is being practised here for the past 25 years. Some of the organic farming practices of this farm are explained here.

**8403 Herbal pesticide**

An organic pesticide can be prepared by mixing the following ingredients in a container of about 15 litres capacity. Five litres of cow’s urine, one litre leaf extract of ‘noolchi’ (*Vitex negundo*), one litre leaf extract of *Acorus calamus*, one litre of asafoetida extract (soak hundred grams of asafoetida in ten litres of water and take one litre) and seven litres of water. The leaf extract is prepared by boiling two handfuls of leaves in 10 litres of water till it becomes one litre. It is to be strained after cooling for getting the extract. Three tanks of this pesticide solution (each 15 litres) can be sprayed over one acre during evening hours. This organic pesticide can be used against all types of pests and diseases of paddy.

**8404 Circular pits to save water consumption in Banana plantation**

Generally the farmers plant about 850 - 900 suckers of banana in square or rectangular beds. In this farm, circular pits with a circumference of 4½ feet and a depth of three feet are dug and seven to eight suckers are planted on the periphery of every pit. Irrigation is given to the pits through the connecting channels once every two weeks. Garbage and crop wastes are put in the pits and allowed to compost. A space of 12 feet is maintained between every two rows of such pits, so that a tractor can pass easily between them. The water requirement can be reduced to 50 percent by this method of planting. In this method, banana can be ratooned for three years after which fresh suckers can be planted.

Comm: P Vivekanandan

**Will you stand by the IPRs of peasants?**
Coriander Curtails Weeds!
Sowa Repels Pod Borers

12

A Dialogue on People’s Creativity & Experimentation

Hittalagida
(Kannada version of Honey Bee)
Dr T N Prakash, Editor
Department of Agricultural Economics
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8405 Seed treatment aids germination

8405.1 If the seeds of watermelon are soaked in kumkum (vermilion) water or milk for a day before sowing, they will germinate faster and grow into healthy plants.
Prabhakar and Senapathi Gowda, Sagar

8405.2a Bitter gourd also germinates faster and develops well when the seeds are soaked in milk for a day prior to sowing.
Narasimha Murthy, Sirsi

8405.2b Seeds of various varieties of beans are soaked in milk for a day and then planted; the resultant plants are healthy and the yield is good.
T S Hegde, Hitalahalli
Comm: Arunkumar and Anand

8405.3 According to the farmers of Chipageri, before sowing of ragi seeds if some dry cow dung cakes are burnt in the field and if it rains thereafter, the ‘ragi’ plants become disease resistant and grow much faster.
G D Lambhur, Chipageri

8405.4 Slow germinating seeds like radish and beet-root are tied in a piece of cloth and soaked overnight in water and are sown after sprinkling water on them repeatedly. Plants from these seeds are well developed and fast growing.
Subbaraya Bhatt, Yellapur

8406 Coriander controls weeds

A method to control Striga asiatica weed in the jowar (Sorghum vulgare) field is by using coriander (Coriandrum sativum). Coriander seeds are planted between the rows of jowar. Nearly 200 g of coriander seeds are sown for every three kg of jowar seeds. Once the coriander plants are big enough the strands twist themselves around striga weed and suppress its growth. This way the weeds are finally eliminated from the fields.

8407 Pest preventive measures

Leaves of ‘mukkadaka’ (Lasiosiphon eriocephalus) or ‘kasaraka’ (Strychnos nuxvomica) or neem (Azadirachta indica) or Agave americana are collected in a bucket to which ten litres of boiled water are added. The mixture is allowed to ferment for a day and the extract is diluted with water and sprayed once in 15 days on crops as a prophylactory measure. This mixture is said to repel the pests and diseases and keep the host plant intact and healthy.
Purshottama Rao, Dist: Shimoga

8409 Insect free brinjal

To control pod borer (Leucinodes orbonalis) in vegetables like brinjal, ‘sabsige’ (Anethum sowa) plants (also called ‘sowa’ in Hindi) are sown in the rows along with the vegetables. The strong odour of this plant is found to repel the insects.
Barama Gowdaru

8410 Control of blast disease in paddy

The paddy blast disease is caused by a fungus called Pyricularia oryzae. To control this fungus, two to three kg of ‘kavlusaraka’ (Careya arborea) bark are crushed in water and applied to paddy fields.
Purshottama Rao, Dist: Shimoga
Preserving Colostrum Milk

Colostrum milk is used to prepare a delicious sweet dish but it is difficult to get whenever we want. It is only available after the delivery of the calf. But the enterprising villagers of Prakasam district have found out a way to have a plentiful supply of this milk.

A clean piece of thin, muslin cloth is dipped in raw colostrum milk on the first day after the delivery of calf, and is allowed to absorb the milk. Then the cloth is dried and kept in a clean polythene bag. The process is repeated on the second and the third days also.

The cloth is stored in a polythene cover and can be used to make colostrum milk whenever needed. To reconstitute colostrum the cloth is dipped in raw, normal milk and is squeezed in a separate vessel. When the milk is boiled, colostrum coagulated milk can be made. It is believed that the cloth can be used for six months.


Polythene Prevents Pests!

The farmers of the Circar Districts observed that the larvae cannot climb on a polythene sheet. The surface being smooth, the larvae are unable to get a grip on it. And also the pests cannot make their way through the soil. So, the farmers built a small barrier along the boundaries of the field using polythene sheets to prevent pests crossing the boundaries. They drive small sticks (nine to twelve inches long) at a distance of four to five feet on the ground along the boundaries. A roll of polythene sheet is spread over the sticks in such a way that it hangs from the sticks vertically and partly spreads over the ground. To prevent the pests making their way from below the sheet, the farmers cover the end of the sheet on the ground with dry soil. Some farmers add some pesticide also along the barrier. The polythene sheet roll costs Rs 100 per kg. Not more than Rs 300 needs to be spent to protect a field of an acre.


Storage of Garlic

Garlic has several medicinal as well as culinary uses. Garlic mixed with pepper and salt is consumed along with rice to prevent indigestion. But storage of garlic is difficult, especially when it is not dry. Garlic can be stored for any number of days by keeping it in a vessel containing ragi grains.

Contributed by Mrs Parijatamma, Puttur, Tenetiga, vol 2(3&4):8, 1997
One wonders about the relationship between the cranes and the rickshaw-puller. Well, these are the cranes that fly thousands of kilometers to visit the world-famous Keoladev Bharatpur Bird Sanctuary every winter. And Mr K S Sharma is one of those few rickshaw-pullers who not only take the tourists around the sanctuary, but also impart information about the birds.

“Look, this is the Brahmini Maina! It is otherwise called Bhooori Maina, but because it bathes each morning like the Brahmins, it is called Brahmini,” Sharma justifies the name. Of the 400 bird species that inhabit the sanctuary, Sharma can recognize almost 300 of them. How does an ordinary rickshaw-puller have so much knowledge?

About nine years ago, the sanctuary administration decided to allow rickshaws carrying bird-watchers and tourists into the sanctuary. The idea being that there would neither be any pollution nor any noise, and the birds could be watched undisturbed. With this assumption, a training programme was started for the rickshaw-pullers.

Contrary to the expectations of the administration, around 5000 rickshaw-pullers applied for the training programme; only 30 were selected. A few more programmes were introduced later on. Currently the number of registered rickshaw-pullers has reached 82. Each registered rickshaw has a painted yellow-coloured strip, on which the number of the rickshaw is written. Only a registered rickshaw is allowed inside the sanctuary.

During the three-month training period, the rickshaw-pullers had no source of income and they had to pay fees as well. “We know that at the end of the training, we will belong to a category that has an alternative source of income,” said one of them. These registered rickshaw-pullers now charge Rs 25 per hour.

Ratan Singh, the puller of the rickshaw number 9, indeed belongs to a special category. He is a life-member of the Bombay Natural History Society. Bird-watchers coming from Europe and America reserve his services prior to their visits, by informing the sanctuary administration. Singh recognises all the inhabitant bird species and their habits.

The rickshaw-pullers’ interest in the birds is infectious. One would be enjoying the ride, when the rickshaw would suddenly stop. “Look at that bird’s neck; it resembles a snake, but the bird eats fish. What is more interesting is that although it can catch small fish, it can only eat its mouth first. It throws the fish in the air in such a manner that the fish comes down with its mouth pointing downwards, straight into the waiting bird’s beak.”

Sometimes a rickshaw-puller may not be able to identify a bird. “The sanctuary administration did not have another training programme for us. Hence, we could not update our knowledge,” says Sharma. Bharatpur’s Keoladev Bird Sanctuary is spread over approximately 26 sq km. It can be reached by rail and road from Delhi, Agra and Jaipur. A person not interested in birds must also visit this sanctuary just to hear the intriguing stories of these rickshaw-pullers.
Nest Strainers and Tuber-Indicators: Grassroots Wisdom from Rajasthan

Satish Kumar Sharma

Nest strainer

Half built nests of ‘baya’ (*Ploceus philippinus*) are used for sieving ‘ghee’ (butter oil) and buttermilk in many villages of Alwar, Bharatpur, Jaipur, Sikar, Ajmer districts of Rajasthan. Similarly these nest-strainers are also used in local jaggery making process by tribals and farmers of Rajasamand, Udaipur, Dungarpur and Banswara districts. Sugarcane juice is expelled by farmers in cattle-driven mills in the field itself. The sugary sap so produced may have some suspended impurities. Before boiling, the sap is sieved twice or thrice through such nest-strainers. Sometimes two nests are used, keeping one above another, for a more effective sieving.

Generally half built nests of ‘baya’ contain deposits of mud or cow dung on the internal walls of the egg chamber. The nest without the deposits, is considered good for sieving purpose. Before use, a nest is washed twice or thrice with pure water to remove dirt. It is kept upside down as a funnel on a narrow mouthed container. To facilitate sieving, chin-trap of the nest is also removed.

Fruit-abscission control in mango

Fruit-abscission takes a very heavy toll on mango crop. To stop premature fall of mango fruits, many farmers of Mavli Tehsil of Rajasamand district make a shallow depression in the upper surface of one of the thickest branches and fill it with mustard oil. Gradually the tree absorbs the oil. This treatment is believed to check fruit abscission in mango.

Natural crop protection from rodents

In Kankarmala village of Jhadol tehsil of Udaipur district, Bhils use a simple device to keep away nocturnal rats, mice and porcupines from *Rabi* crops. Many rattlers, which are locally called ‘*jalra*’ are erected at different points in the field, preferably towards the periphery, to scare the rodents away. To prepare a ‘*jalra*’, a bamboo pole of about two to three metres in length is erected firmly on the ground. A large sized *teak* (*Tectona grandis*) leaf is hung at the upper end using a 0.50 to 0.80 m long peel strip procured from leaf - rachis of a wild date palm (*Phoenix sylvestris*). When the leaf dries, it moves with the wind and strikes the pole making a rattling sound. Besides this, the owls also use the bamboo pole-tips as a perch and help in rodent control. During the day, many insectivorous birds also use the pole as perch station.

Indicators of rain

Khemji Bhil of Jawad village in Sarada tehsil, Udaipur district collects a tuber of ‘mirchiya kand’ (*Corallocarpus epigious*) every year after the monsoons. He ties the tuber with a string and hangs it from a peg. The tuber remains as it is till mid-June. Ten to fifteen days before the arrival of monsoons, a new shoot arises from the tuber. Khemji says that the emergence of new shoot is a sign of commencement of monsoons.

Similarly, the wild plantain, *Ensete superbum* is an important indicator of monsoons. In Jhadol tehsil of Udaipur district new sproutings of this species is believed to indicate the arrival of monsoon rains and preparations for sowing of *kharif* are made accordingly.

Inducing fruiting in male papaya trees

Many farmers of Mavli Tehsil do not remove male trees of Papaya. They drive two to five small nails made by bamboo splits in the basal portion (at a height of about 50 cm) of the stems of male trees. This is said to be good for induction of fruiting even in the male papayas. (A similar practice was reported in HB 6(2):12 to make coconut trees bear fruits. :Ed)

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1. Range Forest Officer, Aravalli Afforestation Project, Jhadol, Udaipur district, Rajasthan

Will you stand by the IPRs of peasants?
Culture and Conservation: Plants Used in Ganesh Pooja

The role rituals play in conserving biodiversity is less explored area. We discussed the issue of conserving particular uncultivated grain or vegetable on a specific day of religious or cultural significance earlier (HB vol 7(2):1-2). This article is communicated by Rajiv Khedkar of ADS and has been actually developed by Karnataka Forest Department and Mr Abdul Kareem from FRLHT. 

Siddhi Vinayak Vrata: Patra Pooja

Ganesh, as a remover of obstacles, occupies a special place in the Hindu pantheon. No work, or pooja of any kind, commences without invoking the blessings of Lord Ganesh, who is also believed to be the repository of knowledge.

Ganesh commands respect and attention from the highest to the lowest. Puranas are replete with instances of even those blessed with divine powers coming to get the blessings of Lord Ganesh. None other than Lord Krishna was a seeker of the blessings of Lord Ganesh.

Apart from the normal worship, there are two special Vratas to propitiate Lord Ganesh. One is called the Sankashta Chaturthi Vrata and is performed on the fourth day of the dark fortnight of the Hindu Calendar year. And the second one is the Siddhi Vinayaka Vrata which is performed once a year on the fourth day of the bright fortnight of the Hindu month, Bhaadrapada. Some specific species of flowers and leaves are used to offer Pooja to Lord Ganesh, preceded by the chanting of mantras. Some of these special flowers are mentioned here along with their special properties.

References
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PID, CSIR. 1986. The Useful Plants of India. New Delhi

Plants used in Ganesh Pooja

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<th>No</th>
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<td>1.</td>
<td>Machi</td>
<td>Artemisia vulgaris Linn.</td>
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<td>3.</td>
<td>Bliva</td>
<td>Aegle marmelos Correa ex Koen.</td>
<td>Astringent, digestive, diarrhoea, dysentery, cooling</td>
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<td>Doorva</td>
<td>Cyanodon dactylon Pers.</td>
<td>Diuretic, bleeding, piles, cuts &amp; wounds</td>
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<td>5.</td>
<td>Datoora</td>
<td>Datura metel Linn.</td>
<td>Narcotic, antispasmodic, skin diseases</td>
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<td>6.</td>
<td>Badari</td>
<td>Zizyphus jujuba Lam.</td>
<td>Cooling, tonic, anti emetic, diarrhoea</td>
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<td>7.</td>
<td>Apanarga</td>
<td>Achyranthes aspera Linn.</td>
<td>Diuretic in renal dropisies, piles, boils, skin eruptions</td>
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<td>8.</td>
<td>Tulasi</td>
<td>Ocimum sanctum Linn.</td>
<td>Expectorant, antiseptic, urinary disorders, insect bites</td>
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<td>9.</td>
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<td>Nerium indicum Mill.</td>
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<td>Evolvulus alsinoides Linn.</td>
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<td>Terminalia arjuna W. &amp; A.</td>
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<td>21.</td>
<td>Arka</td>
<td>Calotropis gigantea (Linn.) R. Br. ex Ait.</td>
<td>Dysentery, elephantiasis, fever, cough, cold asthma</td>
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Non-Chemical Agriculture Can be Competitive

We have been asked this question many times that given the increasing demand for food, can we really do away with chemical inputs? Are we not emotional in the matter? And sometimes we have been charged that we want to take agriculture backward. This is so despite the fact that we shared more than one thousand non-chemical innovations in improving yield, controlling pests, curing animal diseases, etc., through Honey Bee during last eight years. These were taken from our database having more than five thousand innovations. Perhaps, we need to be more efficient in convincing the leaders of research in the country. If you notice the kind of innovations farmers are trying, for instance the efforts to improve productivity through water management, or controlling weeds through residue management, you will appreciate why such innovations are not scaled up. There is no corporate interest supporting these innovations. Although, we are sure that in due course green entrepreneurs will emerge who will add value to these innovations and become global leaders in sustainable technologies. In the meanwhile our collaborators in different language versions are determined to spread the word about alternative technologies around. The inertia of Science and Technology leaders does not deter us.

Salt and spice

Ambarambhai applies a coat of salt water to cumin seeds to ensure better germination. About 250 g of salt dissolved in a half litre of water is used for treating 10 kg of cumin seeds. This treatment is also believed to increase yields.

Smoke is virus away

A virus infection in chilli plants, causes the leaves to shrivel. This leads to loss of nutrition in the plants and the crop yield falls. Kanubhai Desai of district Mehsana has developed a method of fumigating away the virus. He burns ‘guggul’ (*Balsamodendron mukul*) and fumigates the plants with its smoke. The ‘guggul’ is placed on burning cow-dung cakes and is carried around the field so that each plant is exposed to the fumes.

It is believed to show results within five days. About 700 g of ‘guggul’ is required for one acre crop.

Proper irrigation saves cumin

Farmers generally believe that excessive moisture leads to various kinds of diseases in cumin. Devshiji Thakore has been irrigating his field judiciously to prevent his cumin crop from being injected with ‘kaliyo’ disease. He made his plots small so that not much water is collected in the fields. A light irrigation is given right after sowing. The next
irrigation is given after a gap of seven to eight days. And a third and final irrigation is given at the pre-flowering stage. Later, the irrigation is totally stopped.

Last year many farmers of this area, who irrigated their crop four or more times, suffered due to the infestation of ‘kaliyo’ disease in their crop. Devshibhai’s field remained unaffected.

Devshibhai kept his crop free from dew also by using the following technique. Everyday, in the early morning hours, two persons holding a cotton or a coir rope between them, walk through the plants so that the rope gently touches the leaves and the dew drops are knocked off. (Readers may recall that similar practice has been reported in HB from Sri Lanka, India and also from China (see HB vol 5(2):10). :Ed)

Devshibhai Hathijibhai Thakor, Dist. Mehsana. Comm: Vanarsinhji Thakor and Jalamsinh Zala

8417

Cumin controls weed

‘Dharo’ (Cynodon dactylon) is a perennial weed which is very difficult to remove. The roots spread to considerable depths and mechanical measures also become useless. Devshijji Thakore has an innovative solution for this problem. Harvested dried stalks of the cumin crop are spread in the area affected by ‘dharo’. During monsoons, the rain water percolates down through these stalks. The farmers believe that this process suppresses the growth of the weed gradually.

As the stalks decompose and mix with the soil, ‘dharo’ is destroyed. It is believed that if a crop is grown immediately after this treatment with cumin stalks, it results in poor growth of the crop. The stalks are allowed to decompose fully over a year or so. Later, regular crop can be grown without any problem of ‘dharo’.

Devshijji Hathijibhai Thakore, Dist. Mehsana Comm: Vanarsaiji M Thakore

8418

Control of larval pests in chickpea

Ms Alkhiben Vankar uses leaves of ‘ardusa’ (Adhatoda vasica) and ‘karanji’ (Pongamia pinnata) for controlling larval pest in chickpea. About five kg each of ‘karanji’ leaves and ‘ardusa’ twigs with leaves are crushed in a stone or wood mortar to obtain the juice. The juice is mixed with 10 litres of water and the solution is filtered three times through a cloth. The solution is further diluted with one litre to five litres of water and sprayed on the crop. About 8-10 litres of this solution are required for an acre. Three early morning applications in a week provide satisfactory results.

Alkhiben Menthabhai Vankar, Dist. Sabarkantha. Comm: Ramanbhai Menthabhai Sutariya

8419

Small plots yield more!

Shri Umedbhai Patel altered the carrot planting method for increasing yield. Generally, in north Gujarat, the size of the plots is large (20'-30' x 6'-8'). Umedbhai says that root crops like carrot require soft and loose soil. And large plots retain larger quantity of water that compacts and hardens the soil.

So he experimented with deep tillage in small plots (10' x 3') in his field based on its slope and ensured that soil did not harden due to irrigation. Also, the greater number of bunds thus created in the field, made the soil soft and conducive to root growth. Small plots also helped in reducing the requirement of irrigation water.

Umedbhai’s production went up from 2500 to 3000 kg/ha to 3500 to 4000 kg/ha because of this practice. The quality of carrots also improved with increase in girth and length.

Umedbhai Keshabhai Patel, Dist. Mehsana Comm: Chimnabhai Hirabhai Parmar
Increasing cattle milk production

Owners use different techniques for increasing milk production. Maganbhai Khoont feeds the cattle with a mixture of cotton ball, dried beans of ‘desi baval’ (*Acacia nilotica*) and kernels of pearl millet. All these ingredients are boiled in water and the animal is fed with the boiled mixture at the time of milking. According to Maganbhai, the inner kernel from mango stone may also be added to the cattle feed to increase milk production.

Maganbhai Savjibhai Khoont, Dist. Rajkot. Comm: Ritaben Gopalbhai Chapala

Remedy for Swollen Udders

Sometimes, due to wrong methods of milking or dirt on milker’s hands, the udders and teats are injured, resulting in reduction of milk, pus in the milk and swelling of the udder.

Govindbhai Bhoorabhai Dhanasil, a cattle breeder of Junagadh district uses the juice of ‘piloodi’ (*Salvadora persica*) leaves to cure this condition. The juice is applied on the swollen udders twice a day. The swelling disappears within two days.


Common cold in cattle

Cattle often suffer from common cold during the winter. As soon as the symptoms appear in an animal, farmers of Rajkot district feed 250 g of groundnut oil once a day to the cattle. They also include onions in the cattle feed and allow the animal to eat as much as it can. In the evening the infected cattle are given a decoction of ‘tulsi’ leaves (*Ocimum sanctum*), mint leaves (*Mentha virdis*), tea leaves or powder and anni seeds or ‘ajwain’ (*Trachyspermum ammi*). All these ingredients are boiled in water till the water reduces to half of the original volume. The decoction is then cooled and filtered and given to the ailing animal every day. According to the farmers, this treatment cures the cold in three to four days.

Govindbhai Govindbhai Kapadia, Dist. Rajkot. Comm: Jagdish Vaghela

Urine Blockage

Cattle, especially bullocks, often suffer from urinary blockage due to stones. Shri Mansukbhai Samijibhai Savaliya suggests use of ‘jamun’ (*Syzygium cumini*) juice for this problem. One or two measures of the juice made of the tender skin of ‘jamun’ fruit is administered twice a day for two to three days. This treatment brings relief to the animals.

Scientists’ comment: Dr Anjaria says that if urine is not stopped totally, a mixture of jamun and sugarcane juice with milk and water and a boiled decoction of ‘gokharu’ and ‘satodi’ roots will help expulsion of the stone. But if the urine is stopped totally then no diuretics should be administered.


Readers may recall an article published in Honey Bee (Vol 8(1): 3-4) on innovative dryland agro-forestry practice developed by Sunda Ram, a young educated farmer from Sikar, Rajasthan. He had submitted a proposal to IDRC (International Development Research Centre), Canada supported Using Biodiversity project for collecting and screening indigenous land races.

He has already developed a new high yielding variety of chilli and collected 30 local varities of ‘bajra’. Honey Bee congratulates Shri Sunda Ram on getting this research award of Rs. 3,00,000 and hope that he will provide a new model of approach to participatory breeding, independent of formal scientists, if the latter continues to ignore his efforts.

First Farmer to Get A Research Award

Honey Bee Vol 8(4) October-December, 1997

Will you stand by the IPRs of peasants?
The IV Annual Meeting of IIM-A, SRISTI, Gram Vidya piths, GAU and Honey Bee Network in Gujarat

The fourth annual meeting of the Honey Bee Network, Gram Vidya piths and SRISTI was held at the Ravi J Matthai Auditorium, IIM-A, on November 29, 1997. About two hundred participants attended the meeting from all over the State. The main purpose of the meeting was to discuss the work done by the Network in the past years, and to evolve a framework for the future. The participants comprised innovators, farmers, herbalists, herbal healers, scientists, students and teachers of the Gram Vidya piths, and government officials of the state rural development department and other members of the network.

Prof Anil K Gupta, while welcoming the participants, enumerated four main points for a successful network: distributed leadership, collective responsibility, proper resource allocation and vision for long term development. The leadership for various research and dissemination responsibilities should be distributed in the network depending upon where comparative advantages lay. Similarly, the financial and other resources should be shared regardless of who raised which resource. Likewise, tolerance of respective inadequacies and limitations can be appreciated much better if we had long term vision about common cause. Only then collective responsibilities can emerge. He also admitted that the Honey Bee network has not yet been able to achieve these fully and this meeting is aimed at finding ways of building these characteristics into the network.

Shri Chhelbhai Shukla, an eminent Gandhian, and Shri Amrutbhai Agrawat, the innovator of Aaruni Bullock-cart, from village Pikhor, district Junagarh and member, SRISTI advisory committee presented their views on the network. Various members of the SRISTI network briefed the audience about the activities of the network. Group discussions were held to design research programmes for the next year in the fields of on-farm research, indigenous veterinary medicine, educational innovations, natural resource management etc. Farmers and innovators from remote villages participated in the discussions. For the first time women healers from various villages found a platform to speak about their knowledge and share their ideas with other innovators and professionals.

About 45 persons were awarded prizes. They include DRDA officers, scientists from Gujarat Agriculture University, students of Gramvidya piths, and other villagers who have scouted innovations from different villages of Gujarat. The innovators so scouted were specially felicitated. Sri S K Shelat, Chairman, GIIC, Dr A W P David, MD, GMDC, Prof P M Shinghi, Dean, IIM-A, Premjibhai, and Shri Chhelbhai Shukla gave away the prizes. Dr David said that restructuring of minds is essential to recognise the innovative potential at grass roots. Prof Shinghi quoted Bhagavadgita to underline selfless ‘satvik’ service by innovators like Karimbhai.

Sri Shelat expressed his appreciation of the work carried out on natural resource management by SRISTI and Honeybee Network. He advised members to compile an Encyclopaedia of indigenous practices, which can be used all over the world.

Workshop on ITK for Watershed Management held at Beijing, Nov 17-25, 1997

PWMTA (Participatory Watershed Management Training in Asia), part of FAO, promotes participatory watershed management in the Asian region. It organized a workshop to sensitize policy makers and trainers about the importance of indigenous knowledge systems in Watershed Management Programmes. Eight countries viz., Pakistan, Bangladesh, Myanmar, Thailand, Sri Lanka, Nepal, India and the host country, China, participated in the workshop. The keynote address was delivered by Shri Anupam Mishra of Gandhi Peace Foundation.

A wealth of information, on how people at grassroots have been generating solutions, was presented from all eight countries. The Centre for Management in Agriculture at IIMA, and Honey Bee presented the study from India. Copies of the compilations may be requested from Dr Prem Sharma, Regional Coordinator, PWMTA-FARM Programmes, PO Box 25, Kathmandu, Nepal.
Will you stand by the IPRs of peasants?

21 percent of these lies above the US
A simplified finding suggests that 1.3
using a random Mante Carlo simulation.
chlorpyrifos equivalents was calculated
understanding of the hazards associated
has valuable information on scientific
and individual diet patterns. The book
legal and policy instruments in the US,
promised by various pesticides, prevailing
see the study of
has already released three issues.
The inaugural issue carries an account of
Indian Agriculture in the Eighteenth
century by a British traveller, Maj. Gen.
Sir Alexander Walker originally published
in Dharampal’s Indian Science and
Technology in 18th Century (p.1-20). Y
L. Nene contributed an article on Babur
Nama, the Moghul ruler Babur’s
observations on Indian flora, fauna and
agriculture in the sixteenth century.
Another British traveller Capt. Thos
Halcott on Drill Husbandry in South
India notes that the drill plough in use
was much better in dropping grains
efficiently than the patented one at that
time (p 23). Deepak Kumar’s study of
science in agriculture during Victorian
India (vol 1(2):77-103) analyses the
contribution of science in the British rule
towards agricultural development. R L
Babier in his observation on Ancient
Irrigation Works in Ceylon (vol 1(3):161-
176) says that Sinhalese are probably the
first inventors of ‘valve-pits’ or ‘valve
towers’ used for controlling outward
flow in reservoirs.

A wide range of interesting insights into
agriculture and related activities from a
historical perspective are presented in the
journal. The journal was initiated by
Asian Agri-History Foundation in 1997
which has already released three issues.

The book provides a detailed map of the
pattern of toxic residues found in food
items in the US. This data is combined
with scientific findings on health hazards
posed by various pesticides, prevailing
legal and policy instruments in the US,
and individual diet patterns. The book
has valuable information on scientific
understanding of the hazards associated
with these residues and the history of US
policy instruments in this area. The book
offers some guidance for policy makers
in other countries.

Estimate of children’s exposure to
chlorpyrifos equivalents was calculated
using a random Mante Carlo simulation.
A simplified finding suggests that 1.3
percent of these lies above the US
Environmental Protection Agency’s
definition of safe exposure. The specific
insight of the study is not in identification
of specific diet/residue, risks for specific
age group but in the issues concerning
analyses techniques in this context.

The book provides a detailed map of
the pattern of toxic residues found in food
items in the US. This data is combined
with scientific findings on health hazards
posed by various pesticides, prevailing
legal and policy instruments in the US,
and individual diet patterns. The book
has valuable information on scientific
understanding of the hazards associated
with these residues and the history of US
policy instruments in this area. The book
offers some guidance for policy makers
in other countries.

Sharing of knowledge in local language
with the people from whom we learn
adds an element of authenticity. It is
actually an ethical obligation to which
we often do not pay much attention. The
book deserves appreciation for recognising
the potential of local tribal language and
thus contribute to conservation of cultural as well as
biological diversity. The book is a
compilation of about 150 medicinal
plants with coloured photographs with
their medicinal properties and other
description published in English and
Bhil languages. The attempt by SPWD
(Society for Promotion of Wastelands
Development) which supported the effort
to document the knowledge of the
traditional Bhil tribal healers is indeed
commendable. Most species of trees and
herbs dealt with are found in the forests of
Maharashtra and adjoining areas of
Rajasthan and Madhya Pradesh where
the Bhil tribes live. The book contains
remedies for all kinds of common
ailments which can be administered in
a very simple way. For instance, for
pain in chest and abdomen, Ricinus
communis leaves are lightly heated on
fire and then tied around the affected
part in the morning and evening till
cured (p 137). For curing diarrhoea in
infants, eight inches long stem of
Cocculus hirsutus is made into a single
bangle and then put on the infant’s hand
for seven days (p 162).

This compendium has well-documented
information about medicinal values of the
plants and can be a useful base for further
validation and value addition.
Non violent way of driving parrots needed

Tapan Padhi
Regional Centre for Development, Cooperation, 424, Sahidnagar, Bhubaneswar - 751 007, Orissa.

I put forth a query on behalf of the farmers of the Bolangir district of the western Orissa. Four months back we started working with the farmers in the Gudvella Block of this district. For this semi-arid perennially drought hit region, the usual activities for improving the condition of the farmer would have been to go for contour bunding, mixed cropping and growing more legumes to enhance the soil fertility. But the farmers rule out cultivation of any legumes as very small in size and their beak is more curved than the usual parrots (very small in size and their beak is more curved than the usual wild parrots (very small in size and their beak is more curved than the usual wild parrots) so as to keep them away from the beans. Only rice could be cultivated in this region. According to the farmers it just is not possible to scare away these parrots by wind operated tin bells or any other means known to them. The agriculture department officials suggest to kill these birds by using lethal pesticides, which is not proper. An alternative way for scaring away these birds has to be found out Can you suggest us any methods? Whether any alternative crops can be taken up to address this issue? Please help us find a way out.

(Please write to us what did Railway Departments say. :Ed)

Credibility of local knowledge?

Kalpana Das
Intercultural Institute of Montreal, 4917, Saint Urbain, Montreal, Canada, H2T 2W1

As usual Honey Bee (vol 8(1)) is extremely rich in information. We consider this publication to be in a leadership role for collecting and compiling information on local knowledge and practices in the areas of agriculture, environment and so on.

I would like to make a brief comment on the “initial” report of the ICCIG January ‘97. I was a participant in this conference. The highlights of this meet, for me, was the place accorded to the “Innovative” farmers from several regions of India as “partners” in dialogue. And the linguistic pluralism of India being reflected all through the conference. The credit definitely goes to the organizers.

Although I understand, the report in the last issue of Honey Bee to be a synthesized version, a crucial point (from my point of view) has been completely neglected. There was a group of people, including a few anthropologists, social activists and some grassroots groups, who raised a somewhat dissenting voice, regarding the academic treatment of the grassroots knowledge. The issues raised included, conservation of traditional knowledge vs. innovation of knowledge; framing and scrutinizing local knowledge with the parameters of scientific-dominant knowledge for their credibility and legitimation, and in the process totally ignored the issue stemming from conflicting cosmologies of these two knowledge systems. On the third day of the conference, some of us including some grassroots groups expressed their feeling being “disempowered” as the conference went along. A voice was raised against the demeaning way, in some of the concurrent sessions, the presenters as well as the discussants dealt with the credibility issues of local knowledge. I consider these issues to be vital to enter into any adequate dialogue between the dominant knowledge bearers and the grassroots knowledge holders. Equality of status of parties in dialogue is an essential prerequisite for any effective interaction without domination.

(As you acknowledge, the ICCIG 97 provided a platform. If some convenors of parallel sessions did not respect the spirit of partnership, it only shows how far we have to go and how deep are the barriers to genuine intellectual participation of people. I wish, instead of giving up, you had articulated these ideas right there and influenced the process. But for all of us, ICCIG provided an invaluable experience. If we want we can change the way
discourse on indigenous knowledge proceeds. We tried with some success. :Ed

I have a better solution!

Nathabhai K Dodhiya
PO Trakuda, Ta: Candal, District Rajkot

The Loksarvani issue of July- August’97 carried a practice of treatment using crushed supari (Areca catechu) powder mixed with a glass of water to cure bloat in animals. I have tried it with little modification. I added 500 g of Groundnut oil and 30 g of asefoetida to the mixture of supari and water. This has relieved my buffalo in just two hours and restored her rumination. I have also sent my appreciation to Ms Niraben Choudhary, the innovator of the practice.

(Thank you Nathabhai, we are delighted to learn about the modification. This kind of farmer to farmer exchange of information for continued experimentation is our goal. We hope to see more of such interaction among farmers. : Ed).

Cancelling subscription!

Dr L S Yadav
Reader, Dept of Agri. Engg, NERIST, Nirjuli PO- 791109, Arunachal Pradesh

Inspite of my humble request, my article was not published in Honey Bee. Now, it is not possible for me to subscribe to this journal. Thank you.

Hope you are happy now, Dr Yadav, that your letter is published. We are sorry, we could not publish your contributions. :Ed

Need more information on horses and poultry

Annie Trivett
Post Box : 57, Kodaikanal - 624 101

Congratulations for producing a fascinating magazine. I would like to have more information on horses and poultry, especially on egg yield production. I am an animal lover and I would be very happy to hear about remedies that may be produced on the farm for little or no cost, and also we have homeopathy.

Keeping ants away!

Padma Rajagopal
35/Madanahalli, Yecwal, Mysore

I visited Gurdwar (Tamil Nadu, in the western Ghats) recently and found a solution to termite problems in kuccha buildings. What the hill tribes do in this areas is to use mud from termite mounds in the building where protection from termites is needed. We tried it, to coat woven Bamboo sheet walls, to keep out the wind. It appears to work in places where termites were coming up, eating the bamboo sheet as they came. Now they are leaving this wall alone! Do your scientists have an explanation for this?

Ants Help Elimination of Worms in Potatoes: Innovation From Honduras

First find a good sized ant-hill

Put the potatoes on top of the ant hill

The ants eat all the worms inside and on the potatoes

The ants come out to defend their home

sent by Prof Peter Thurston, Cornell University

Will you stand by the IPRs of peasants?