

Precision farming makes floriculture profitable M.J. PRABU

The impact is felt in more than 500 acres in and around the village



Better prospects: E. Vadivel (left) with a rose farmer at Denkanikottai, Hosur.

Media reports on failure in agriculture and statistics on farmers suicide rates “may be true in some parts of the country; but another unreported part of the story, is that for every farmer who kills himself, there are hundreds of successful farmers who are earning well under the Precision Farming System,” says Dr. E. Vadivel, Project Officer, Precision farming & Extension, Tamil Nadu Agricultural University (TNAU), Coimbatore.

“Take the case of several hundreds of farmers practising Precision Farming (under the Tamil Nadu Agricultural University, Coimbatore, TNAU).

If one visits their fields and interacts with them, they can experience for themselves how the impression that agriculture is a not so profitable avocation seems false,” he reasons.

Guidance

Almost any crop can be cultivated under this system and a team of dedicated scientists guide the farmers at every step.

Though it sounds like a fairy tale given the present problems in our country’s agriculture scenario, a visit to Denkanikottai village at Krishnagiri, Tamil Nadu seems to substantiate Dr. Vadivel’s statement.

“Economically we are able to smile now. Our children attend private schools and we are able to earn some money. Thanks to the Precision system we save more than 60 per cent on fertilizers, weedicide, water, and electricity.

Earlier we lost our crops during heavy rains, but now we are assured of a good yield and not even one farmer faces loss,” says Mr. Nageswara Reddy, a farmer who earns more than Rs. 5 lakh from open field cultivation of dutch rose grown in his one acre under polyhouse. The impact is felt in more than 500 acres in and around the village.

Expenditure

Agriculture is no child’s play. If you calculate the investment spent on labour, pest protection, irrigation (electricity), it runs to lakhs of rupees, for a small farmer.

With lack of marketing facilities and fluctuating prices, farmers are literally in the dark, not knowing what to do.

Either they lease their lands or sell it as they have a family to take care of.

This is sadly the present condition of our country’s agriculture.

“It is a herculean challenge for scientists and universities to make farmers continue their cultivation. And they are prepared to do it only if they are assured of a good price for their produce,” says Dr. Vadivel.

“Though we come from a farming family we knew only three pest control measures and used them repeatedly. But all this changed with the project scientists visiting us.

They took classes for us, like school children, and taught us proper cultivation techniques and provided guidelines from supplying the seeds, crop protection strategies, in irrigation etc,” says Mr. Nageswara Reddy. A number of farmers in the village sunk borewells (some even sunk 11 borewells) in vain, to get water.

The cost

The cost of sinking a well works out to about Rs. 70,000.

“Think of a small farmer who sinks 3-4 wells? In fact the project saves the government and the farmer from wasteful expenditure. We are able to save more than 60 per cent expense on weedicide, pesticides, water and electricity because of this project,” says Mr. Rama Reddy, rose farmer.

Initial apprehension

Initially the farmers were sceptical as to how scientists could help them. But now “We see the difference, in terms of better yield, more income. If not for the precision project, several of us would be wallowing in difficulty,” says Mr. Ananda Reddy, another rose farmer. At present the farmers sell their rose bunches for Rs. 60 (one bunch) which in turn is sold for Rs 120 at the Bangalore market.

The farmers want the Government to establish a flower auction market either at Hosur, Royacottah, Kelamangalam, Berkari, or Tali (nearby areas) as now they depend on middlemen for selling their produce to far away places. For more information contact Mr. Nageswara Reddy, Sarapapalli village and post, Denkanikottai TK, Hosur, Krishnagiri District – 635114. Mobile: 93451 72574 and Dr. E. Vadivel email: ev@tnau.ac.in, Phone : 0422 6611383, Fax: 0422 6611370.

Integrated management of foot rot in black pepper

Foot rot disease is the most destructive disease of black pepper. This disease affects all the parts such as leaf, stem, collar and roots. Infection to collar and root cause death of vines.

Various methods have been recommended for managing the incidence with varied degrees of success. In recent times bio control agents such as *Trichoderma* as a component in the disease management have shown promise in managing foot and collar rot incidence.

Survival and growth

However, the survival, growth and efficacy of the bio control agents are hampered in high rainfall tracts and thus reduced the potential of bio agents in managing the disease.

A farm trial conducted by Krishi Vigyana Kendra, Uttara Kannada, Sirsi experimented application of 20 kg FYM, 1kg neem cake mixed with 50gm *Trichoderma harzianum* to the base of each vine. A 1.25 sq.mt plastic sheet with a circular collar cut at the centre was made and mulched at the base of the vine to fit tightly to the standard and vine.

The plastic film was covered in such a fashion as to avoid water puddling and weighed down securely with areca fronds towards the outer periphery. The runner shoots and laterals were pruned up to half a meter from the base.

Experiment

The whole operation was completed before onset of monsoon Two prophylactic sprays of 1 per cent Bordeaux mixture were applied so as to cover both the surface of the leaves before onset of monsoon and second at 40 days after first spray.

In this combination of treatment, cent percent vines survived, however the leaf infection was recorded only 8 percent compared to 32 per cent infection in farmer's practice that is mulching with dried grass/leaves/areca fronds and a spray with Bordeaux mixture to vines. The un-mulched vines showed 38 per cent foot rot disease incidence. Besides, the general appearance of the vines was lush green, shiny leaves, early spike initiation.

The farmers felt that this technology was easy, less expensive and effective in management of collar / foot rot disease.

Farmers may use the same plastic mulch several times if quality plastic is used. Care should be taken to remove the plastic soon after the cessation of the monsoon. **Dr. Hemant G. Hegde & Gurudatt M. Hegde** *Uttara Kannada Sirsi University of Agricultural Sciences Dharwad, Karnataka*

Plant, grass buffers break down antibiotics



Research suggests that buffer strips of grasses and other plants can break down veterinary antibiotics in manure fertilizers, which cause emergence of drug-resistant bacteria that could infect livestock and people.

Butterfly vision, wing colours linked

Butterflies that have a duplicate gene allowing them to see ultraviolet colours also have UV-yellow pigment on their wings. The UV-yellow pigment may help the butterflies survive by facilitating the search for appropriate mates. Butterfly experts have suspected for more than 150 years that vision plays a key role in explaining wing colour diversity. Now, for the first time, the research proves this theory true — at least in nine *Heliconius* species.

“They’re not wasting their time chasing after the wrong mate,” said Briscoe, associate professor of ecology & evolutionary biology and lead author of the study, published online recently in the *Proceedings of the National Academy of Sciences*.

Butterflies developed a copy of their UV-vision gene and began displaying UV-yellow pigment 12 million to 25 million years ago, the scientists believe. Of the 14,000 butterfly species in the world, only the *Heliconius* living in the forests of Mexico and Central and South America are known to have the duplicate gene. Butterflies with just one UV-vision gene had yellow wing pigment that was not UV. However, the pigment was UV in butterflies with both genes, according to a University of California, Irvine press release. It was earlier thought that wing-colour mimicry emerged as a defence mechanism to confuse predators such as birds. This created a problem, though: Butterflies that evolved to look alike had a hard time identifying the right species with which to mate. Having both genes allows molecules to form in the eyes that are more sensitive to UV light.

Free float for non-urea fertilizers?

Subodh Ghildiyal, TNN, Feb 18, 2010, 03.11am IST

NEW DELHI: Will the government bite the fertiliser subsidy bullet? The Union Cabinet on Thursday is to take up the proposal for freeing prices of non-urea fertilisers as a first step towards reining in the spiralling subsidy bill. A proposal for 10% hike in price of urea is also part of the ambitious proposal before the Cabinet.

The proposal to switch to a Nutrient Based Subsidy (NBS) regime is being seen as a test case for whether government has the taste for taking tough decisions in the face of mounting fiscal deficit.

The move comes just when the government is dithering over hiking petrol prices.

Fertiliser subsidy, estimated to be around Rs 50,000 crore, has been a holy cow, with successive governments fighting shy of touching it for the fear of annoying farmers' lobby despite the strong argument that it actually benefitted fertiliser producers. The new regime will seek to restrict the subsidy to the amount of nitrogenous and potassium fertiliser in a bag rather than its entire weight. Currently the subsidy is for the entire bag. Taking the decision is not going to be easy this time as well. Already, fertiliser minister M Alagiri has strongly opposed the move, arguing that a switch to the new regime would trigger a hike in fertiliser prices and hurt small and marginal farmers. He has opposed the urea hike by reminding that a similar attempt by NDA to increase the price by 5% led to a furore and rollback of the budget announcement.

The Centre is keen on clinching the NBS so that its implementation from April 1, 2010, can be announced in the budget speech. The DMK minister is sticking to his guns. In his interactions with finance minister Pranab Mukherjee, he has cited opposition to NBS from four ministers in the GoM to back his claim that freeing MRPs in current inflationary spate could add to trouble.

Agriculture minister Sharad Pawar, rural development minister C P Joshi and heavy industries minister Vilasrao Deshmukh expressed strong reservations in the GoM. Alagiri is banking on Trinamool chief Mamata Banerjee's support. For him, the fears about NBS are linked to forthcoming Tamil Nadu elections.

Reservoir worth Rs 1 crore houses pigs and cattle

February 17th, 2010

New Delhi: Nearly Rs 1 crore were spent on developing a water supply system in a colony in southwest Delhi but a recent inspection revealed that the place now houses pigs and cattle.

This came to light when the Central Information Commission (CIC) was hearing an appeal of Mr Jawahar Singh who had asked if any fund has been set aside for water development in Pocket-4 of Bindapur in southwest Delhi.

"A discussion with about 15 officers of the Delhi government who have come, indicates that DDA (Delhi Development Authority) appears to have spent about Rs 1 crore for laying a system of pipes and underground reservoir. DJB (Delhi Jal Board) claims that when the joint inspection was done it was found that the reservoir had no pipes or equipment for pumping, and it was housing pigs and cattle," the Information Commissioner, Mr Shailesh Gandhi, noted in his order.

The DJB official told the commission that there is no system in place by which "water supply of Bindapur Pocket-4 can be ensured and it is not known what happened to the money spent".

"The officers present tell the commission that Bindapur Colony Pocket-4 is an authorized colony developed by the DDA and there is difficulty in supplying water to this colony. Around this colony there are unauthorized colonies where the government is finding it easy to supply water," Mr Shailesh Gandhi noted.

Criticising the Delhi government for not being able to supply water in an authorised colony, Mr Gandhi said: "It is apparent that the Delhi government is incapable of supplying water which is a basic function which the government has to fulfil. In spite of two chief secretaries loftily committing that water has to be supplied to this colony, there is no urgency or will to ensure that water is supplied."

"This despicable pushing the blame within the government can continue for decades without fulfilment of a simple promise made to this colony. This commission has no authority in this matter but will send a copy of this decision to the chief minister of Delhi in the hope that a promise made by the government to Bindapur Colony Pocket-4 can be fulfilled," he noted in his order.

The BT Debate



Bt Brinjal in deep freeze

Citing a lack of scientific consensus and the absence of any “over-riding urgency”, the govt of India put an indefinite moratorium on the introduction of a genetically-modified brinjal developed after ten years of research. Govt questioned the logic of letting private companies drive biotechnology research in agriculture. The brinjal in question has been developed by Mahyco — a private firm in which global seed major Monsanto holds a 26% stake — in collaboration with two Indian agricultural universities.

What is a GM crop?



As the name suggests, a genetically modified crop is produced by bringing about a change in the genetic structure of the plant. It is generally done by introducing an outside gene, sourced from other plants or organisms, to develop some special characteristic in the crop. In conventional hybridisation, two or more varieties of the same crop are

cross-bred, through cross-pollination or some other method, to develop a hybrid variety with some desired characteristic. Bt crops are genetically-modified after inserting a particular gene (Cry1Ac) from the soil bacterium, *Bacillus thuringiensis* (Bt), into a plant cell. *Bacillus thuringiensis* is a naturally occurring bacteria that produces a toxin poisonous to certain types of insects.

Bt cotton experience



Bt cotton was the first GM crop approved by the govt for commercial cultivation in India. From the initial three varieties of Bt cotton developed in 2002, farmers in the country now have more than 200 Bt cotton hybrids to choose from. Since the introduction of Bt cotton, the average productivity of cotton has risen from 191 kg per hectare in 2002-03 to an average of 466 kg per hectare in 2007-08 with Gujarat showing a productivity of 625 kg per hectare. Almost 80 per cent of the cotton area is now under Bt cotton. India has already overtaken the US as the second largest producer of cotton in the world, next only to China.

Where the world stands...



Argentina, the US and Canada produce 90% of the world's transgenic crops. Japan, Australia & New Zealand have introduced mandatory labelling for all food containing genetically modified organisms. **US:** GE crops adopted widely

since their introduction in 1996; genetically engineered soybeans and cotton most widely used, followed by cotton and corn. **Europe:** Virtually no market for GM food in Europe; requires labelling of all foodstuff containing 1 pct or more GM material. **China:** Granted safety certificates to two strains of GM rice and one of GM maize for field trials. **Latin America:** GM soybean is grown widely with Brazil and Argentina being the main producers; GM corn also widely cultivated. **Australia:** Has approved GM cotton, carnations and canola for commercial cultivation; GM soy, cotton & corn imported and are approved for consumption.

Are GM foods safe?



Different GM organisms include different genes inserted in different ways. This means that individual GM foods and their safety should be assessed on a case-by-case basis and that it is not possible to make general statements on the safety of all GM foods. GM foods currently available on the international market have passed risk assessments and are not likely to present risks for human health. In addition, no effects on human health have been shown as a result of the consumption of such foods by the general population in the countries where they have been approved.