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# जैविक खेती सूचना पत्र

## Organic Farming Newsletter

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संपादक Editor डा. ए.के. यादव Dr. A.K. Yadav राष्ट्रीय जैविक खेती केन्द्र, गाजियाबाद NCOF, Ghaziabad	Insect Pest Management in Organic Agriculture <b>Surender K. Sharma</b>	3
सहायक संपादक Assistant Editor डा. दुष्यन्त महलौत Dr. Dushyent Gehlot राष्ट्रीय जैविक खेती केन्द्र, गाजियाबाद NCOF, Ghaziabad	Organic Farming: A Success Story from "Enabavi Village" in Andhra Pradesh <b>K. Surekha, K. V. Rao and B. C. Viraktamath</b>	7
प्रकाशन सहायक Publication Assistant हरि भजन Hari Bhajan सुभाषचन्द्र Subhash Chandra	India Organic News	10
सलाहकार /Advisor डा. कृष्ण चंद्र / Dr Krishan Chandra अतिरिक्त आयुक्त /Additional Commissioner कृषि व सहकारिता विभाग Department of Agriculture and Cooperation	Global Organic National and International Events	15 21
संरक्षक Patron पंकज कुमार Pankaj Kumar संयुक्त सचिव Joint Secretary कृषि व सहकारिता विभाग Department of Agriculture and Cooperation	Book Reviews List of authorised PGS-India Regional Councils	25 28

जैविक खेती सूचना पत्र, राष्ट्रीय जैविक खेती परियोजना के अन्तर्गत जारी एक बहुभाषीय तिमाही प्रकाशन है। जैविक खेती के उत्थान, प्रचार प्रसार व इसके नियामक तंत्र से जुड़े लेख, नयी सूचनाएं, नये उत्पाद, विशेषज्ञों के विचार, सफल प्रयास, नयी विकसित प्रक्रियाएँ, सेमिनार-कॉन्फ्रेंस इत्यादि की सूचना तथा राष्ट्रीय व अन्तरराष्ट्रीय समाचार विशेष रूप से आमंत्रित हैं। सूचना पत्र में प्रकाशित विचार व अनुभव लेखकों के अपने हैं जिसके लिए प्रकाशक उत्तरदायी नहीं है।

Organic Farming Newsletter (OFNL) is a multilingual quarterly publication under National Project of Organic Farming. Articles having direct relevance to organic farming technology and its regulatory mechanism, development of package of practices, success stories, news related to conferences, seminars etc, and national and international events are especially welcome. Opinions expressed in articles published in OFNL are those of the author(s) and should not be attributed to the publisher.

प्रिय पाठको

पिछले ७ वर्षों से इस सूचना पत्र के माध्यम से हम आप सभी पाठकों को जैविक खेती के क्षेत्र में हो रही प्रगति, सूचना तथा विभिन्न राष्ट्रीय व अंतर्राष्ट्रीय घटनाओं की जानकारी देते आ रहे हैं। जैविक खेती के क्षेत्र में यह सूचनापत्र न केवल एक प्रथम सूचना माध्यम है बल्कि वैज्ञानिकों की खोजों को सीधे किसानों के उपयोग हेतु उन तक पहुँचाने का भी स्रोत है। वर्तमान में यह सूचना पत्र लगभग ११०० पतों पर भेजा जा रहा है तथा प्रत्येक माह दर माह इसकी माँग बढ़ रही है। हालाँकि यह सूचना पत्र अभी तक केवल संस्थाओं या संस्थानों को ही भेजा जा रहा है परंतु अन्य उपयोगकर्ताओं की सुविधा हेतु इसके सभी अंक इस केन्द्र के वेबसाइट पर उपलब्ध हैं, पाठक इसके सभी अंक <http://ncof.dacnet.nic.in> से डाउनलोड कर सकते हैं। हर तिमाही में जानकारी का संकलन हमारे लिये एक बहुत ही मुश्किल कार्य है। मैं सभी पाठकों से अनुरोध करता हूँ कि आपके आस-पास जो भी जैविक खेती क्रियाकलाप हों उसकी जानकारी हमें अवश्य भेजें ताकि हम उसे पूरे जैविक खेती परिवार के साथ बाँट सकें। वैज्ञानिक बंधुओं से मेरा निवेदन है कि वे इस क्षेत्र की अपनी उपलब्धियों को भी हमसे बाँटें ताकि आपकी तकनीक सीधे किसानों द्वारा अपनाई जा सके। पूर्ववर्ती परंपरानुसार इस अंक में जैविक कीटनाशी प्रबंधन पर एक लेख प्रस्तुत है जिसमें कुछ पारंपरिक उपादानों को वैज्ञानिक परीक्षण पर जाँचा गया है। जैविक किसानों के उत्पादवर्धन की परंपरा में आंध्र प्रदेश के एक पूर्ण जैविक ग्राम की सफलता की कहानी इस अंक का प्रमुख आकर्षण है। आशा है इस गाँव का यह अनूठा व सफल प्रयास अनेक लोगों को जैविक खेती की ओर उन्मुख करेगा। अन्य स्थायी स्तंभों के माध्यम से राष्ट्रीय व अंतर्राष्ट्रीय सूचनायें, वैज्ञानिक उपलब्धियाँ, घटनाक्रम इत्यादि अपने पूर्ववत् स्वरूप में प्रस्तुत है।

Dear Readers

Since last seven years we are trying our best to update the readers of this newsletter with latest developments, news and happenings around the globe. The newsletter is not only serving as the first information source on various aspects of organic farming but is also providing a platform to scientists to disseminate their findings for adoption by the farmers. The Newsletter is now reaching to 1100 addresses across the country and the demand is growing with every passing month. So far, the issues are being sent in hard copy only to the institutions, but for the benefit of all the users entire data base of Organic Farming Newsletter has been place on the website of NCOF. Readers can access it from <http://ncof.dacnet.nic.in>. But to keep updating our readers it is an uphill task for us to collect the information. With this I request all the readers to please share the latest happenings, information, and research findings etc with us in the field for further dissemination to the entire organic fraternity. I also invite the scientists working in the field to share their research findings for immediate adoption by farmers. Keeping in with the tradition, this issue is being presented with an article on organic pest management wherein some indigenous practices have been validated. To encourage the innovative farmers and farmer groups a success story of an organic village in Andhra Pradesh is an special attraction of this issue. I hope the story will inspire many others to dedicate to the cause of organic farming. Information on various other aspects such latest research findings in national and international forums, details on various national and international events and reviews of recently published books is being provided through standard columns.

ए.के. यादव A.K. Yadav

संपादक Editor

# Insect Pest Management in Organic Agriculture

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Organic agriculture due to its acceptability among consumers has made its place in 160 countries. The total organic area in the world is 37.2 million ha with 1.8 m. producers. India ranks first in number of organic producers followed by Uganda (Report by IFOAM and ITC, 2011). During last seven years, India recorded 25 fold growth, with area increasing from 42,000 ha in 2003-04 to more than 10.08 lakh ha in 2009-10. In Himachal Pradesh, 20 thousand farmers (under conversion and certified) are practicing organic agriculture in 10605 ha. The only limiting factor in mass adoption is the interaction of the insect pests. The green revolution actually increased the potential yield of agricultural crops by the use of high yielding varieties, intensive cropping and extensive use of synthetic fertilizers and pesticides. But these practices aggravated the pest problems in the form of pest resistance, resurgence of pests and adverse effects on non target organisms. However implementation of integrated pest management (IPM) strategies has been instrumental in restricting the use of pesticides but still about 20% of our food products contain pesticide residues above maximum residual level against 2% globally.

Beside other components organic agriculture conceptually means complete prohibition of synthetic inputs in favour of alternatives which are environmentally safe, ecologically sound and socially acceptable. Among crops; vegetables and fruits are of major concern and due to their delicious and perishable nature, they are attracted by a complex of pests and require intensive care to manage them. Organic agriculture primarily aims at the product quality rather than quantity, management of insects below

economic injury level rather than control. To ensure the quantity and quality of the produce, suitable, economical, viable and stringent organic practices need to be defined and validated at the production sites. The 'Organic Pest Management' with the use of biological approaches, such as botanicals, microbial pesticides, pheromones, bio control agents, and other natural control measures are becoming popular. In this perspective, some of the findings of the research trials for the evaluation of these assets and other components of concern in organic pest management has been dealt in detail in this article for the benefit of organic community.

## **A) Evaluation of organic inputs against insect pests:**

The pest attack under organic system can be avoided but still their management is a question mark for which some promising inputs need to be evaluated. With this objective different plant extracts, biopesticides and other cow based organic inputs were evaluated at Model Organic Farm of CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur during 2010-11 against aphid in mustard (8), gram pod borer in Chick pea (16), leaf miner in peas (16), red pumpkin beetle and fruit fly in summer squash and cucumber (15 each). The corrected per cent population counts of these insect pests for the promising inputs were derived from the data in comparison to untreated control (taken as 100%) and are described here. The results of some promising inputs against these insect pests are presented in Tables 1 to 5. Under organic system among them Ghaniri extract (*Polygonum hydropiper*) 5% was found most effective (Table 1). Gram pod borer, polyphagous and a serious pests of

chickpea can be managed efficiently by the use of NPV  $3 \times 10^{12}$  POBs at 10 day interval (Table 2). Pea leaf miner can be managed with the use of Darek astra (*Melia azadirach* extract) 5% at 10 day interval. Summer squash which is generally attacked by fruit fly (*Batocera sp*) and Red pumpkin beetle

(*Raphidopalpa sp*) both can be efficiently managed by topical spray of Darek astra 5% at regular intervals. The cucumber crop is also prone to the attack of these pests but Neem (*Azadirachta indica*) Seed Kernel extract 5% was found to be effectively controlling the problem (Table5).

Table1: Comparative aphid *Lipaphis erysimi* Linn. Corrected percent population count in mustard crop

Corrected percent population counts of aphid at different intervals				
Treatment	Corrected % aphid population count 10 day after each treatment			
	Pre treatment	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Darekastra 5%	99.09	46.30	7.04	14.45
Ghaniri extract 5%	50.18	15.97	3.63	5.00
Agneyastra 5%	73.80	71.76	39.02	26.12
Neem seed powder 5%	60.38	62.73	26.87	41.67

Table 2: Comparative Gram Pod Borer, *Helicoverpa armigera* Hub. percent corrected population count in Chickpea

Treatment	Pre treatment count	1 <sup>st</sup>	2 <sup>nd</sup>	Plant height (cm)
NPV $3 \times 10^{12}$ POBs	74.07	6.80	17.39	181.50
Panchgavya 10%	148.15	47.10	56.21	161.51
Eupatorium extract 5%	100.00	77.32	59.57	176.88
Dashparni 5%	74.07	63.72	72.61	186.11

Table 3: Comparative Pea Leaf Miner, *Chrotomyia horticala* corrected percent population count in Peas

Treatment	Pre treatment count of maggots	1 <sup>st</sup> Count after 10 day	2 <sup>nd</sup> Count after 10 day	% leaf infestation
Darek astra 5%	139.53	39.97	22.99	19.42
Eupatorium extract 5%	84.76	36.01	38.97	22.25
Panchgavya 10%	142.26	72.29	66.38	63.92
Dashparni 5%	131.86	78.03	52.54	56.08

Table 4: Comparative corrected percent pest population count of Red Pumpkin beetle and Fruit fly in Summer Squash

Treatment	Initial count		1 <sup>st</sup> Count after 10 day		2 <sup>nd</sup> Count after 10 day		% fruit damage by fruit fly
	RPB	Fruit Fly	RPB	Fruit Fly	RPB	Fruit Fly	
Eupatorium 5%	100.00	203.03	19.76	98.53	0.00	40.12	25.00
Darek astra 5%	249.25	506.06	0.00	48.52	0.00	19.76	0.00
Neelkanthi 5%+ Turmeric 0.3%	249.25	506.06	19.76	48.52	19.76	119.76	25
NPV $3 \times 10^{12}$ POBs	49.25	0.00	40.12	195.58	19.76	19.76	50.00
Clove extract 5%+ cow urine	100.00	203.03	0.00	0.00	0.00	40.12	0.00

Table 5: Comparative corrected percent pest population count of Red Pumpkin beetle and Fruit fly in Cucumber crop

Treatment	Initial count		1 <sup>st</sup> Count after 10 day		2 <sup>nd</sup> Count after 10 day	
	RPB	Fruit Fly	RPB	Fruit Fly	RPB	Fruit Fly
Panchgavya 10%	90.00	0.00	100.00	76.43	38.10	4.35
Darek astra 5%	70.00	16.67	88.89	0.00	9.52	13.04
Neelkanthi 5%+ Turmeric 0.3%	0.00	0.00	88.89	38.22	42.86	17.39
Neem seed kernel extract 5%	60.00	77.78	11.11	31.85	23.81	4.35
Eupatorium extract 5%	20.00	0.00	88.89	50.96	38.10	4.35

Note: Corrected percent population was worked out against the 100 percent in case of untreated control

**B) Pest management practices in Organic crop production:** The possible sources of pests' interactions to our crops are:

1. **Seed:** Generally, we reap what we sow, the seed of the suitable variety to the area and comparatively tolerant to insect pests and diseases should be selected. Seed must be properly dried before storage and treated with organic inputs to avoid infections from the store/ farms. For small scale requirement, healthy fruits/ pods can be tied in bundles and kept aurally in sunny site up to the sowing time. Likewise, tubers/bulbs can be stored in cow dung pasted wooden baskets (made partially airtight). For commercial purpose piling of the seed material would be a suitable management practice. Treat the seed with Bijamrit @2lt/ 10 Kg before sowing.

2. **Soil:** Its suitability has the major role for the growth of seed and produce. The timely pre and post operations (tillage and interculture) generally help to manage the pests.

a) **Pre Field Operations:** Deep ploughing will expose the perenating stages of pests, soil inhabiting insects, ensure solarization of the pathogens and help in turning of the soil profile to improve the plant health, etc.

b) **Post Field Operations:** Secondary tillage, inter culture and mulching to preserve the moisture and exposing the immature stages of pests, planting

trap crops, destruction of alternate hosts of diseases and insect pests and manuring are also some of the important cultural practices. Some of the measures need to be planned considering the bio agents, pollinators and population dynamics and the behavior of the pests.

3. **Plant Growth:** Healthy plant growth/ vigor tolerate all infections caused by pests. Though it is dependent upon the different factors like the prevailing climatic conditions, susceptibility of the plant, available strains of pests, bio agents, availability of alternate hosts and the behavior of the pests and availability of forward generations. On the front what we are applying to manage these pests should be an effective formulation for the control of pests in question (sucking, chewing, damaging stage, place of its attack/ infection, etc.). Hence, any (an organic input) application must synchronize with beneficial fauna, time and place targeting only the pest. It is imperative to enlighten some activities for adoption:

a) Soil application of some effective formulations at the time of sowing/ transplanting e.g. *Metarrhizium* (dust/ granule), *Beauvaria* (dust/ granule), *Trichoderma* (spray), biosol, panchgavya, vermiwash (drench, spray) should be done to escape pests and ensure healthy plants.

- b) Protecting crop in tender stage from soil borne diseases like bacterial wilt, damping off, powdery mildew, leaf spot by drenching with biosol, *Trichoderma*, vermiwash, etc. Soft bodied insects like aphids, thrips, white flies, caterpillars (borers and leaf eaters), defoliating and root beetles may be controlled by either dusting of botanicals (neem, darek, ghaniri, safeda,) or their 5-10% extracts.
- c) Planting trap crops in the main crop e.g. marigold around the plots of tomato and bhindi to escape the attack of *fruit borers*.
- d) Use of light traps for managing nocturnal pests.
- e) Sprinkler irrigation to dislodge soft bodied insects like aphids, white flies, etc. Flooding to manage crops against termites and soil arthropods and rodents.
- f) Manually dislodging by roping in standing crops, irrigation against soft bodied and leaf eaters and netting insects for flying adults of butterflies, moths, bugs and beetles.
- g) Collection, conservation and application of bio agents like lady bird beetles against Aphid in oilseeds and cole crops, *Trichogramma* against bhindi and tomato fruit borers.
- h) Use of traps e.g. sticky traps, yellow pans filled with water, pheromone traps for flying insects or one adult sexual counterpart of fruit flies.
4. **Pod / fruit:** Damaged fruit create nuisance to the consumers. In general fruits, pods are attacked by the borers and maggots which lay their eggs either on plant parts or in the inflorescence, so the pre reactive measures should be taken at the buildup stage. The damaging fruits/ parts must be stripped off and destroyed, adults must be netted manually, use sticky, pheromone traps and use of 10% cow urine and fermented butter milk in early stage is beneficial. *Bacillus thuringensis* (B.t.), neem oil, *Verticillium lacani* (priority) or 5-10% solution in water of plant extracts of *Melia* (darek), *Eupatorium*, *Lantana*, *Polygonum* etc. application at week interval will save the crop and be continued till seed maturity.
5. **Seed:** The milking stage of seed is preferred by specific pests of crops. To avoid the population invasion or build up it is better to take preventive measures like trapping adult stages, destruction of egg masses and if unnoticed then destruction of feeding stage grubs/maggots/caterpillars manually. The harvesting of the crop should be at a proper time and drying seed to optimum moisture level for storage reduces the further danger of infestation. Sometimes, few storage pests make their way to godowns through seed from standing crops. The precautions along with the application of some repelling organic input (10% solution of cow urine + Fermented butter milk) may be beneficial.
6. **Packaging and Processing:** The total area of vegetables in the country is 57.32 lakh hectares with annual production of 90.8 m. ton (ICAR, 2002). In case of fruits total area is 45.40 lakh hectares with production of 469.70 m. tones (Source- National Bee Board, 1996-97). Annual post harvest losses up to 20- 30 per cent of the produce of vegetables and fruits in the country has been documented. It is the only drawback and little importance is being given to this aspect for the perishable farm produce. These losses can be put in the use either by processing or value addition. The concept of local markets for the sale of organic products to the locality is of prime importance, if a producer community will be healthy, we can expect more produce, healthy nation and more national income.

# Organic Farming: A Success Story from “Enabavi Village” in Andhra Pradesh

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“Enabavi”, a small village of Lingala Ghanapur Mandal, Warangal District, Andhra Pradesh has created history as the first “Organic Village” of the state. The village consists of 52 farm families with a gross cropped area of 260 acres. The village is rich in crop diversity and farmers are following crop rotations. Rice, tobacco, cotton, pulses, coarse grains, chillies and vegetables are grown in the village using locally available organic manures. One of the striking features of the village is that every family possesses live stock (cows, buffaloes, ox, bulls, goats, sheep and poultry) to produce the required quantities of organic manures such as FYM, vermi-compost and poultry manure etc. Another appreciable feature of the village is, that all the farmers help each other along with their family members in all agricultural operations which is hard to find in these days elsewhere.

At the entrance of the village board, indicating the details of the village and stating the village, as chemical free village, welcome the visitors. Inside the village also, instructions to be followed in organic farming, for sustainable agriculture and how to save water, protect environment etc. are very well written on water tanks, walls of houses etc.

## **Reasons behind shifting to organic farming**

Till 2001, Enabavi farmers were also using huge quantities of conventional chemical fertilizers and pesticides in all their crops. All of a sudden, red hairy caterpillar became a big menace in all the dry land crops and it could not be controlled by any chemical. They had to spend a lot of money for insecticides only. Then, the Centre for Rural Operations and Programmes Society

(CROPS), an NGO was successful in considerably reducing the attack of red hairy caterpillar through non pesticidal methods. Thus, the farmers gained confidence in CROPS organization and developed interest in organic farming practices. It took about 3-4 years for CROPS to change the mindset of farmers and to convince them to go for organic farming. Initially, they could convince only 10 out of 52 families and through constant motivation in collaboration with the Centre for Sustainable Agriculture (CSA) and Centre for World Solidarity (CWS), the entire village started practicing organic farming since 2006. The leader of the village, Mr. Ponna Mallaiah and a few progressive farmers also became the source of inspiration for other farmers. The farmers framed their own rules and regulations, which are being followed by every farmer in the village. They are:

- All farmers should follow organic farming
- Use own seeds
- Every family will go for Agro forestry
- Every family should have a kitchen garden
- Development of dairy
- Every family to maintain records of cost of cultivation
- Dissemination of sustainable agricultural practices to other farmers

## **Organic farming practices being adopted by the farmers**

**Seed Treatment:** Most of the farmers (around 88 %) are treating their seed with cow dung/ cow urine and Jeevamrutham. They select good quality seed, store them in earthen pots and put ash on the top of the seed to arrest the entry of insects.

**Nutrient Management:** The farmers are using easily and locally available organic sources for nutrient management. Rice is the major crop grown in both *kharif* and *rabi* seasons. For rice, in nursery, most of the farmers are using FYM (2000 kg/ac) and others are using poultry manure / Vermi compost / goat / sheep manure / green leaf manuring etc. In the main field, most of the farmers are adding tank silt @ 10 tractors/ac (3-4 t/ac) once in every 2-3 years. Nearly, 85% farmers are using FYM @ 1.5-2.0 t/ac during land preparation and Vermi-compost for top dressing in two splits @ 2 quintals/ac each time. Remaining 15% of the farmers use FYM and poultry manure (1.5 q/ac). For other crops also, farmers are using FYM, vermi-compost, poultry manure, sheep and goat manure etc. Most of the farmers use organic solutions like panchagavya, cow urine, Jeevamrutham etc. as supplementary sources of nutrients. In general, yield levels are slightly less compared to their counterparts in nearby villages, as the farmers are not adding the required/recommended quantities of nutrients through organics, but practically no cash expenditure on inputs compensates their loss.

**Pest Management:** The farmers are using 5 kg neem seed powder in rice nursery. In the main field, they are using decoctions of various leaves, tobacco, neem solutions, garlic + green chilli decoction, neem oil and other cultural methods like pheromone traps, trap crops, alley ways, bird perches, light traps, sticky plates etc. for the control of insect pests and diseases. In other crops also, decoctions of tobacco, neem and other local leaf extracts are being used. Initially, for three years they struggled very hard for pest management by spraying the decoctions every week starting from nursery till maturity. At present, most of the farmers are not using anything except neem seed powder in nursery as the pest incidence is getting considerably low. Only manual weeding is being practiced by all the farmers for weed control.

**Productivity trends:** In the initial years of organic farming, yields were very low and the farmers got only 20 - 25 bags/ac (3.5 - 4.3 t/ha) against the normal yield of 40 - 50

bags/ac (7.0 - 8.5 t/ha) under chemical farming in rice. This trend continued for 3 years and from third year onwards, the yields improved to 35 - 40 bags/ac (6.1- 7.0 t/ha) depending on their soil fertility. In case of cotton, the yields in organic cotton are 5-6 q/ac against the yield of 6-7 q/ac in chemical farming. In general, the productivity was low in the initial years due to insufficient quantities of organic manures that were applied but over a period of time, due to improvement in soil fertility and other soil health conditions, the yield reduction came down to 10 -12% after 3-4 years from the initial 50% compared to chemical farming. But, the farmers are still happy with their yields, because with less expanses on inputs their operations are much more profitable and have a strong belief and hope that their yields will still be higher and out yield the chemical farming in the coming years.

**Farmers' perception on organic farming:** Reduction in cost of cultivation is the major advantage as expressed by all the farmers and this has created a greater impact on the farmers to adopt organic farming. Availability of inputs within their own fields decreased their dependence on borrowings and prevented them from debt trap. All of them felt that their soil health and fertility have been improved. More head rice recovery, grain weight with good seed quality and taste (especially in case of vegetables) are other benefits perceived by farmers. The farmers expressed satisfaction over organic farming as there are no health problems and there is improvement in their health after consuming organic foods of their own. They are getting higher price for their produce in local market. They expressed that crops grown with organics withstand well under drought conditions also. Further, they expressed that the shelf life of vegetables has been extended and they remain fresh for a longer period. They observed that organic farming reduced environmental pollution also. They are very happy because many other farmers from surrounding villages are also attracted towards organic farming by seeing their success story.

**Major Constraints faced by the farmers in adopting organic farming:** Majority of the

farmers expressed that organic farming is a difficult process and lot of hard work is involved. Some of the farmers felt that it is labour intensive. Transport problem for carrying manures from other places in terms of cost and facility was also expressed by a few farmers. Problem of availability of manures and lack of proper knowledge on organic farming was felt by a few other farmers. Very few farmers felt that there are no constraints in adopting organic farming.

**Feedback from Farmers:** The main request from farmers is to provide marketing facility for their organic produce to get higher price, though they are getting a little higher price at present for some products in local market. They are expecting Government support in this regard. Recently, NABARD came forward to finance for establishing a stall at Janagam village which is 6-8 km away from Enabavi and help the farmers for marketing their organic produce. Another requirement of the farmers is availability of more organic sources at affordable price and they felt fertilizer companies should manufacture organic manures also in bulk and should be

made easily available to the farmers. They expressed that still they are in need of more knowledge, information, guidance and training in organic farming practices.

**Recognition and award:** Many officials from Central and State Government, Department of Agriculture, scientists, progressive farmers and NGOs are regular visitors of this village and the farmers received great appreciation from all the visitors. For their continuous efforts and hard work, in the year 2010, the village received Baba Ramdev Award as "The Best Organic Village" along with prize money of Rs. one lakh in cash which was spent for the development of the village.

Let us hope that this village becomes a model village and source of inspiration to several other villages in near future. However, efforts are needed to help the organic farmers to get requisite certificates for their products and there is a need to link them to retail outlets in the cities to enable them to get still better price for their organic products.

## President awarded Hindi book on organic farming.

Honourable President Mrs. Pratibha Devi Singh Patil awarded **Rajeev Gandhi Gyan Vigyan award of Department of Official Language, Ministry of Home Affairs, Government of India** for the year 2009-10 to the book entitled "Jaivik Kheti-Nai Dishain" (Organic Farming-New Dimensions) written by Dr. Arun K. Sharma, for original book writing in Hindi in the field of science and environment. This award was given on 14 September, 2011 at Vigyan Bhawan, New Delhi on the occasion of Hindi Divas celebrations. The book was published by Agrobios India, Jodhpur during the year 2009. It contains 10 chapters on various aspects of organic farming e.g. organic system components, organic seed production, nutrition and protection, certification including PGS system, organic farming for rural employment, promotional policies, national and international market and 7 appendixes of information sources in simple hindi.

Many-many congratulations to Dr. Arun Kumar Sharma for this wonderful achievement. The entire organic fraternity is proud of him and his dedicated efforts for popularization of Jaivik Kheti.

## India Organic News

### **PGS-India, National Advisory Committee (NAC) authorises 20 Regional Councils –**

After the launch of PGS-India programme, applications were invited for authorization of Regional Councils. First ever PGS-NAC meeting was held under the chairmanship of the Chairman, PGS-NAC and Jt. Secretary (INM), Department of Agriculture and Cooperation at NCOF, the PGS Secretariat, Ghaziabad on 20<sup>th</sup> July 2011. Among the various decisions made important ones were (a) Co—option of Additional Commissioner (INM) as member NAC, (b) Approval of PGS-India operational manual and approval of PGS-India Green and PGS-India Organic Logos, (c) Approval RCOFs as interim Zonal Councils and (d) Authorization of 20 agencies as Regional Councils spread over eight states. The state of Karnataka has been approved with maximum 7 Regional Councils (RCs) followed by Maharashtra 4 and Tamil Nadu with 3. Uttar Pradesh has been approved with two RCs, while states of Andhra Pradesh, Rajasthan, Kerala and Madhya Pradesh were approved with one RC each. The list of authorised agencies is given on the last page of this issue. As the programme is at its initial stages it was also decided that in the areas where there are no Regional Councils, farmer groups can directly contact respective RCOFs for registration. During the interim period RCOFs shall also act as interim Regional Councils. PGS-India operational guidelines both in English and Hindi are available at <http://ncof.dacnet.nic.in/new/index.html>.

### **Organic food production in the country doubled to 3.8 million tonne in 2010-11-**

Organic food production in the country more than doubled to 3.8 million tonne in 2010-11, even as the area under the chemicals-free cultivation shrank. Area under organic farming declined 3% to 4.42 million hectares in last fiscal, official data showed. In 2009-10, the output of organic products was 1.70 million tonnes, while the acreage was 4.55 million hectares, as per the data presented in the Rajya Sabha by Minister of State for Agriculture Shri Harish Rawat. He said that to determine the impact of organic farming

on soil health and crop quality, Indian Council of Agricultural Research (ICAR) had conducted a study under, Network Project on Organic Farming (NPOF) starting 2004-05. "The limited study conducted under this project revealed that the organic system of plant nutrition helped in improving the organic carbon and microbial biomass in the soil," Rawat said. It also improved the biochemical properties of a few crops like ginger, turmeric, chillies, garlic, tomato, peas, cabbage, French beans and so on, he added. Besides, the content of micro-nutrients like iron, zinc, manganese and copper improved significantly, he said. "Organic foods, in general are reportedly safe for human health as they are almost free from pesticide residues and heavy metals," Rawat noted. According to an agriculture ministry official, India exported 54,000 tonnes of organic food items that were worth Rs. 591 crore in 2008-09. Indian organic exports include cereals, pulses, honey, tea, spices, oil seeds, fruits, vegetables, cotton fibre, cosmetics and body care products. Asia, Latin America and Australia are important producers and exporters of organic foods. Global sales of organic produce touched \$50.9 billion in 2008 from \$25 billion in 2003. Consumer demand for organic products is mainly from North America and Europe. (Source: livemint.com)

### **Campaign against Biotechnology Regulatory Authority Bill -**

Greenpeace members were joined by Delhiites at Dilli Haat near INA Market here on Tuesday the 6<sup>th</sup> September 2011, morning to cook a record-making GM-free *baingan ka bharta* to oppose Biotechnology Regulatory Authority of India Bill, 2011. The cooking was part of a public campaign that saw several people also signing a petition against the upcoming Bill, which is feared to become an easy single window clearance system for GM crops in the country. A battery of chefs from Le Meridien and India Culinary Forum lead the cooking of the *bharta* that has been certified as a record by the Limca Book of Records. A delegation of Greenpeace

members later submitted a signed petition to the Prime Minister's Office against the Bill. "People have the right to say 'no' to GM food and that is exactly what we have done today, we hope that the Government would take notice of the voices of its citizens and stop the introduction of Bill which would become a non-transparent, autocratic body which will lower the bar for the GM crop approvals," said Sustainable Agriculture campaigner with Greenpeace India Kapil Mishra. "Bt. brinjal the first GM food crop that came up for commercialisation was put under an indefinite moratorium last year due to opposition by scientists, farmers, consumers, political parties, as well as environmentalists. Leading the cooking at the record event, Executive Chef at Le Meridien Davinder Kumar said: "We believe in doing whatever we can to ensure safe food and a sustainable environment. We are happy that we could do our bit by joining this people's movement for safe food." According to Greenpeace, the *bharta* was made completely out of organic ingredients sourced from different organic food stores in Delhi to send a message that there are sustainable alternatives that need promotion and support of the Government instead of risky technologies like GM crops. The gathering also urged the Government not to table the Bill but to come up with a biosafety protection legislation that will protect and enhance biosafety and ensure democratic processes are adhered to when dealing with issues as important as food and farming in the country. (Source – The Hindu September 7, 2011)

**Organic farming gets a boost** - Offering incentives to organic farming initiatives, wetland preservation and heronary conservation, which involve the protection of incoming bird species such as water fowls, the Kerala State Biodiversity Board (KBB) has decided to go ahead with its documentation on organic farming. "Documentation is essential to prove that the model works. For instance, it is proved that organic farming is a profitable initiative far from the propagated notion by some, that it is unviable. With that, agro-biodiversity conservation helps in restoring a balanced ecosystem in harmony with nature," said R V Varma, Chairman, KBB. Earlier, Maranchery

and Veliamkode panchayats in Malappuram district were transformed into a fertile area through wetland conservation. About 800 acres of land here had a bumper yield of paddy worth Rs 1.2 crore from organic farming. In addition, through rotation of fish farming after rice harvest, the farmers had a yield of Rs 2 lakh worth fish. Organic farming and wetland conservation initiatives were taken up on the basis of studies conducted by the Cochin University of Science and Technology. Similarly, at Alathur and Padeyetty in Palakkad district, agro-biodiversity conservation through organic farming with over 100 acres of paddy and vegetable cultivation in the homely backyards had directly benefited 69 families in the area. It also offered extra income to many families. Interestingly, Angilakatti, a repellent mixture made from five plants, was used to repel insects and cattle from entering the fields. With that, it helped to restore a balanced ecosystem in the area, with insectivorous birds, earthworm, frogs and perching of birds. In a bid to prevent the rampant poaching of birds, a heronary conservation initiative was launched in Alappuzha and Kottayam districts, and incentives were provided to 21 families that had volunteered to protect birds. A few voluntary organizations also came forward to support the initiative, KBB officials said. Now, more than 10,000 birds can be seen perched on tree tops with about nine species of water fowls in nearly 300 nests. These species of waterfowls like chinnamundi, cherumundi, pathirakakka, neerkaka and chirakozhi are seasonal birds that flock during migration from nearby places. Even if all the model initiatives are documented, the efforts could go in vain unless there is a Government level mechanism to consistently monitor their implementation, according to officials at the Kerala Agriculture Mission. "For instance, in Malappuram the use of imported bio-pesticides from Tamil Nadu is rampant. They are spurious and contain saw dust, which will not lead to any increase in crop yield, and the people are being cheated. Unless the practice is checked, farmers will have the wrong notion that organic farming is not profitable," an official said. Strict Governmental mechanism in coordination with various Departments, including the Agriculture Department, is

required to motivate local bodies and check the inputs used in organic farming initiatives. "However, we do not have sufficient staffers to monitor the progress of the initiatives," KBB officials said. (Source: <http://timesofindia.indiatimes.com>)

### **Recent Developments of No-Till and Organic Farming in India: Is a Combination of These Approaches Viable?**

The increase in crop production brought by the green revolution in India is now shadowed by new challenges related to soil degradation (e.g., erosion, decline of soil organic matter content, salinization) and scarcity of water resources. The present work particularly discusses the contribution of no-till and organic farming, which are increasingly being adopted in India, to meet the increasing food demand in a sustainable way. Under no-till, erosion is reduced to rates close to those found in natural ecosystems, provided enough mulch is retained at the surface which is usually not the case in India, because of competing uses, for example, fodder, fuel, construction material, and also crop residue burning for land preparation. No-till should therefore not be considered separately from complementary measures, aiming at retaining mulch on the soil surface. Efficient recycling of organic material needs to be implemented concomitantly with diversifying fodder and fuel sources which requires enhancing the multifunctionality of farming systems. These prerequisites make it difficult for farmers to adopt no-till, particularly the poorer ones for whom experimentation with new techniques often involve unbearable financial risks. Organic farming apprehends the farm as an organism, and is thus a good option to improve sustainability as introduced above, e.g., by closing nutrient cycling. However, organic farming typically implies tillage for weed control (no chemical herbicides). "Natural farming," as promoted by Fukuoka (1978) combines no-till with organic farming. An overview of available literature on Indian experiences with "natural farming," most of it originating from unconventional sources (i.e., reports available on Internet, but no peer reviewed literature) indicates that crop yields can compare well with the highest

yields in a particular region. Increased productivity and environmental benefits are also often mentioned. The limited accuracy of these sources makes it necessary to pursue further investigations, and we conclude with propositions for future work in this context. This should start with a rigorous assessment of existing "natural farming" systems regarding their productivity and environmental benefits, in order to demonstrate its potential before starting projects that promote the system for broader adoption. (Source – Duboc et al 2011, Journal of Sustainable Agriculture Volume 35 (6), 576-612)

### **Soil Testing Protocols for Organic Farming—Concept and Approach**

In this article the authors discuss the concept of soil testing for organic farming and have identified a number of novel methods for estimation of potentially mineralizable nitrogen (N), microbial biomass nitrogen, speciation of biologically active phosphate fraction, and potassium. More so, modification in lime requirement, and cation balancing, a concept for cationic plant nutrition in organic farming are proposed. The present communication suggests an attribute designated "biological fertility index" combining both chemical and biological attributes for exploring the contribution of microbes toward soil fertility. Furthermore, the present article suggests technical approaches for carrying out research on identification of suitable extractants and their validation for robustness for formulating suitable protocols. Successful development of such soil testing protocol will be helpful to the personnel of state soil testing laboratories and organic certifying agencies presently lacking such facilities. (Source Saha and Mandal, 2011, Communications in Soil Science and Plant Analysis Volume 42, (12) 1422-1433)

### **Viability of organic farming in the hills of Uttarakhand**

In Uttarakhand most of the hill farmers are resource-poor, and therefore apply very low level of chemicals, fertilizers and pesticides. As a result, hill soils are almost free from residues of pesticides and chemical fertilizers. This is a very strong point in favour of Uttarakhand for becoming

a successful 'organic state'. Uttarakhand can enjoy a number of benefits from the adoption of organic farming. The price premiums for the products, conservation of the natural resources in terms of improved soil fertility and water quality, prevention of soil erosion, preservation of natural and agro-biodiversity are major benefits. Economic and social benefits like generation of rural employment, lower urban migration, improved household nutrition, local food security and reduced dependence on external inputs will be large gains in the hill conditions. The protection of environment and the consequent increase in the quality of human life will be other contributions of organic farming. Organic Farming has the twin objective of the system sustainable and environmentally sensitive, in order to achieve these two goals, it has developed some rules and standards which must be strictly adhered. There is very little scope for change and flexibility. Thus, the Organic Farming does not require best use of options available rather the best use of options that have been approved. That's why lack of inputs being a general problem among producers. Also, to encourage organic farming, market support system need be strengthened (Source – Pathak and Singh Annals of Horticulture Year : 2011, Volume : 4, (1)).

**Food security of small holding farmers: comparing organic and conventional systems in India** - This study compared farm production, crop yield, input cost, and income in organic and conventional farming systems in three states of India: Uttarakhand, Madhya Pradesh, and Tamil Nadu. The results showed that organic farming reduced the input cost without affecting the net margin in all three states. Total food production was found to be comparable for the two systems in two of three states. While yield of rice and wheat generally was lower under the organic systems, yield from intercropping food crops was generally higher. The number of agro-ecological methods and percentage of farms practicing different agro-ecological methods were higher under organic systems than conventional systems. These results suggest that organic farming has the potential to improve food security of small farmers by reducing indebtedness due to the

lower cost of production without affecting total farm production and farm income. (Source – Panneerselvam et al 2011, Journal of Sustainable Agriculture, 35 (1), pp. 48-68)

**Impact of large-scale conversion to organic farming on food production and food security for resource poor farmers in India**

- Though India is self sufficient in food production, 231 million people are undernourished of which the major parts are situated in rural areas as small and marginal farmers. This illustrates that food insecurity is not entirely because of lack of adequate food production, but because vulnerable people are too poor to buy food. This study assessed how a conversion from conventional production to organic production would impact on the purchasing power of small holders in Tamil Nadu and Madhya Pradesh and how this would impact on the total food production in these states. In addition a situation was considered in which fertilizer subsidies was discontinued and the farmers had to carry the full cost of fertilizer. The study indicated that adoption of large-scale organic conversion would improve the purchasing power of marginal and small farmers without any major negative impact on the food production. The organic farms had higher gross margin than conventional farms even at no premium, at, respectively, 10, 25 and 41% with a 0, 10 and 20% price premium. In the situation of discontinuation of government's fertilizer subsidies, the gross margin of conventional farms was found to be affected drastically. Regarding total food production where around 62% of the area (1.9 million ha) in Tamil Nadu was converted to organic farming the overall state food production was 5% lower in the organic than in the conventional situation. Similarly, around 30% of the area (3.0 million ha) in Madhya Pradesh was converted to organic, which gave a 2% lower overall state food production than in conventional farming. It is concluded that conversion to organic farming helps in reducing debts and improving the purchasing power of the farmers without impairing overall food supply and thus leading to improvement in overall food security. Moreover, organic conversion integrating more legumes, crop

diversification and lower cost of production was found to be helpful for reducing the consequences of crop failure which is frequent in Indian agriculture. (Source – Panneerselvam et al 2011, Organic eprints)

**Analysing innovative sustainable practices and income generation in organic farming and GRA fields in Bahour, Puducherry, India** – In past decades, agricultural development was mainly focused on short term productivity, based on external inputs resulting in neglect and improper use of natural resources. Thus, it led to ecosystem damage and loss of food security. This has forced the farmers, scientists and the policy makers to look at sustainable farming techniques through organic farming. In India there is greater possibility of bringing green revolution agricultural areas under the ambit of sustainable farming/organic farming. Research and development is necessary to better understand the complex ecological processes as well as the management capacity of farmers. Hence, this research study was done to analyze the reach and adaptation level of sustainable farming techniques by organic farmers and non-adoption (sustainable farming techniques) reasons among the Green Revolution Agriculture (GRA) farmers at farm level. This will help us to find different strategies to popularize sustainable organic farming among the farmers in order to overcome food crisis. (Source - Gopalswamy Poyyamoli and Anbarashan Padmavathy, 2011, Journal of Development and Agricultural Economics Vol. 3(6), pp. 252-260).

**A confluence of Fair Trade and organic agriculture in southern India** - Although the confluence of Fair Trade and organic agriculture has become a salient phenomenon, they contradict each other at the production level: Fair Trade focuses on

specific products, while organic agriculture targets production units. This article explores how Southern small-scale producers cope with this discrepancy, by observing one farmers' group's attempt to obtain the two certifications in India. This case study identifies stakeholders who react to the two certifications differently under different livelihood strategies. Combining the two initiatives may not always be the best practice for realising poverty reduction and environmental conservation aims which the initiatives have in common. (Source – Makeitan 2011 Development in Practice, Volume 21, Issue 2)

**Rhizosphere Microbial Populations and Physico Chemical Properties as Affected by Organic and Inorganic Farming Practices** - The present study was undertaken during May-September (2007) to investigate the effect of organic viz., plant compost (PC), vermicompost (VC), integrated plant compost (IPC) and farmyard manure (FYM) and inorganic (NPK) fertilisers on the rhizosphere microbial population and soil physico chemical properties of soybean variety JS80-21. Control (CON) plot was also maintained without any fertilisers. Results showed that application of organic fertilisers had enhanced the microbial population compared to NPK and CON. The highest fungal and bacterial population was recorded in VC and the least in CON plot. Application of organic fertilisers also showed increase in rhizosphere soil physicochemical properties compared to NPK and CON plots. The above finding revealed that organic fertilisers would be able to sustain the soil fertility for a longer period by meeting the demand of present and future generation. (Source – Das and Dakhar 2011 American-Eurasian J. Agric. & Environ. Sci., 10 (2): 140-150)

## Global Organic

### **Organic food and impact on human health: Assessing the status quo and prospects of research**

The paper gives an overview of recent studies investigating the health value of organic foods and presents a framework for estimating the scientific impact of these studies. Furthermore, the problems connected with the different research approaches are being discussed. A number of comparative studies showed lower nitrate contents and less pesticide residues, but usually higher levels of vitamin C and phenolic compounds in organic plant products, as well as higher levels of omega-3 fatty acids and conjugated linoleic acid in milk from organically raised animals. However, the variation in outcomes of comparative studies is very high, depending on plant fertilization, ripening stage and plant age at harvest, and weather conditions. Moreover, there appeared no simple relationship between nutritional value and health effects. It is difficult therefore to draw conclusions from analytical data about the health effects of organic foods. Some in vitro studies comparing health-related properties of organic vs conventional foods showed higher antioxidative and antimutagenic activity as well as better inhibition of cancer cell proliferation of organically produced food. If 'health effects' are defined as effects on defined diseases in humans, evidence for such effects is presently lacking. Animal studies carried out so far have demonstrated positive effects of an organic diet on weight, growth, fertility indices and immune system. Recent human epidemiological studies associated consumption of organic foods with lower risks of allergies, whereas findings of human intervention studies were still ambiguous. The hypothesis might be that organic food increases the capacity of living organisms towards resilience. To confirm this, effect studies on specific markers for health are necessary. (Source – Huber et al 2011 NJAS - Wageningen Journal of Life Sciences)

### **Nutritional Quality and Safety of Organic Food**

Food security, nutritional quality and

safety vary widely around the world. Reaching these three goals is one of the major challenges for the near future. Up to now, industrialized production methods have clearly shown severe limitations such as a worldwide contamination of the food chain and water by persistent pesticide residues, and reduced nutrient and flavor contents through low-cost intensive food production and/or processing. In line with several published literature reviews, the French Agency for Food Safety (AFSSA) performed under author's coordination an up-to-date exhaustive and critical evaluation of the nutritional and sanitary quality of organic food. This review is based on the AFSSA report issued and recently published studies. The major points are: (1) organic plant products contain more dry matter and minerals (Fe, Mg); and contain more antioxidant micronutrients such as phenols and salicylic acid, (2) organic animal products contain more polyunsaturated fatty acids, (3) data on carbohydrate, protein and vitamin levels are insufficiently documented, (4) 94–100% of organic food does not contain any pesticide residues, (5) organic vegetables contain far less nitrates, about 50% less; and (6) organic cereals contain overall similar levels of mycotoxins as conventional ones. Thus, organic agricultural systems have already proved able to produce food with high quality standards. The author propose also improvements of organic production to achieve sustainable food production for humans in the near future. (Source – Danis Leiron 2011 Sustainable Agriculture 2(2) : 99-110)

### **Organic Agriculture and Food Production: Ecological, Environmental, Food Safety and Nutritional Quality Issues**

Conventional agricultural systems should not only produce much greater amounts of food, feed, fibre and energy to meet the global needs, but also challenge problems to improve health and social well-being of man, reduce dependence on fossil fuels, adapt to climate change and extreme weather, reduce environmental degradation and decline in the quality of soil, water, air

and land resources throughout the world as well. The present one-dimensional physical and chemical production systems should be replaced by an agricultural paradigm that rely more on biology, ecology and sociology, and meet global food needs based on the soil, water, land and fertility resources without compromising the capacity of future generations in meeting their environmental, food and resource needs. Organic agriculture as an alternative to conventional systems of food production should contain features of agricultural systems that promote the environmentally, socially and economically sound production of food and fibre, and aim to optimize quality at all levels. The underlying principles are to minimize the use of external inputs as far as possible and use of resources and practices that enhance the balance of ecosystems and integrate components of farming systems into an ecological system. Recognizing the ecological principles, self-regulating ability and system stability, agro-biodiversity, climate change and global warming, soil nutrients and soil biology, erosion, non-chemical crop protection and generally agroecosystem health are the most significant ecological and environmental issues regarding production systems. Organic agriculture in farming, processing, distribution or consumption is to sustain and enhance the process of food safety and health at all stages and levels of the agroecosystem in order to prevent serious food safety hazards such as pathogens like prions (BSE), allergens, mycotoxins, dioxins, GMOs, pesticide residues, growth hormones, food additives like colorants, preservatives, flavours, process aids, nitrite added to processed meat, salt, added sugar and saturated fat. There are growing evidences suggesting that organic agricultural systems produce enough quantity and quality foods and have a number of ecological, environmental and health advantages for consumers over food from conventional systems. (Source - Reza Ghorbani et al 2010, Sociology, Organic Farming, Climate Change and Soil Science, Sustainable Agriculture Reviews, Volume 3, 77-107)

### **Soil Functions and Diversity in Organic and Conventional Farming - Intensification**

of modern agriculture is one of the greatest threats worldwide and it has led to growing concern about conserving biodiversity and its role in maintaining functional biosphere. It is now clear that agricultural intensification can have negative local consequences, such as increased erosion, lower soil fertility, and reduced biodiversity; negative regional consequences, such as pollution of ground water and eutrophication of rivers and lakes; and negative global consequences, including impacts on atmospheric constituents and climate. Concerns about the ability to maintain long-term intensive agriculture are also growing. Organic farming is now seen by many as a potential solution to this continued loss of biodiversity due to recycling of natural resources and no negative impact of synthetics. Though almost all the soil processes are regulated by soil microbes, the link between microbial diversity and soil function is not well understood. This review article assesses the impacts on biodiversity of organic farming, relative to conventional agriculture, through a review of comparative studies of the two systems, in order to determine whether it can deliver on the biodiversity benefits. It also identifies and assesses soil processes regulated by microbes under organic and conventional management practices. It also highlights changes during conversion from conventional to organic cultivation regarding biological processes as well as abundance of microbes. It emphasized tools to measure functional diversity and activity of microbes including molecular tool. The review also draws attention to four key issues: (1) differences in functional diversity under organic and conventional management practices; (2) variation in soil processes due to organic management practices; (3) molecular tools and comparative studies related to analysis of microbial biomass or characterization; and (4) changes during conversion to organic farming. Concerning environmental protection, in general, the risk of adverse environmental effects is lower with organic than with conventional farming methods, though not necessarily so; with reference to soil fertility and nutrient management, organic farming is suited to improve soil fertility and nutrient management markedly on the farm level; regarding biodiversity, comparison studies

show that organic farming has more positive effects on biodiversity conservation. Organic farming identifies a wide range of soil microbial community that benefit from organic management through increases in abundance and/or species richness. Management practices used in organic farming are particularly beneficial for farmland wildlife. Although the continuing debate on the issue of adoption of organic farming has not come out with clear-cut resolution in many parts of the world, the biodiversity aspect in soil functions will be on the positive side for the foreseeable future. (Source – Supradip Saha 2010, Sociology, Organic Farming, Climate Change and Soil Science Sustainable Agriculture Reviews, Volume 3, 275-300)

### **Soil Carbon Sequestration and Organic Farming: An overview of current evidence**

- With the recent interest in the potential for agriculture to capture atmospheric CO<sub>2</sub>, through the accumulation of soil carbon, measurements in this area have been viewed as increasingly important. Promoting soil health and encouraging the development of soil organic matter have always been central tenets of the organic approach, and the contribution of organic systems to this area has therefore been of considerable interest. This paper attempts to review the current evidence in this area, presenting the following main points: (1) Organic cropping systems have considerable potential for increasing soil carbon, through the incorporation of fertility building grass-clover leys and use of livestock manures within diverse crop rotations, when compared with specialist (eg: monoculture) cropping systems; (2) The exact amount of carbon that can be sequestered through organic management of cropping systems is still uncertain, due to the disparity in assessment methods, and farming end-use systems; (3) The difference between the wide range of organic and conventional farm types is not yet clear, partly because of the current difficulty in defining these systems and their individual characteristics; (4) Organic management of grassland is unlikely to increase soil carbon levels over those from conventional management, but the reliance on legumes and biological instead of industrial nitrogen

fixation will still have a positive impact on climate change mitigation through reduced fossil energy use and related carbon dioxide and nitrous oxide emissions; (5) Future work is needed in this area to (a) determine the common characteristics of organic and conventional farming systems in terms of carbon stocks and flows (b) ascertain the contribution of grass/clover leys in terms of providing soil carbon and (c) take full account of external factors such as previous land use. Current/ongoing work may help us to answer some of these questions, until this work is completed; the authors conclude that while organic farming can certainly contribute to soil carbon sequestration within cropping systems, the precise quantification of this area remains uncertain. This should not prevent the implementation of organic farming as one of the methods for atmospheric CO<sub>2</sub> reduction. (Smith et al 2011, Organic Centre Wales, Aberystwyth University, Ceredigion)

### **Soil Protection through Organic Farming: A Review**

- About 17% of the total land area in Europe is affected by erosion, and an estimated 45% of European soils have low organic matter content. Because agriculture occupies the largest proportion of land, agricultural management is decisive for soil conservation and soil quality. Here authors evaluate, on the basis of published research, whether or not organic farming might be a way to maintain and restore soil quality. Results of field experiments and studies of practical farms show concordantly that soil organic matter typically increases or is conserved better with organic than with conventional farming practices, with differences becoming exceedingly pronounced with time. Soil organic carbon was 6–34% higher under organic than under conventional management, with two studies finding no pronounced differences and two studies with very old organic farms exhibiting 50–70% more soil organic C than their conventional neighbours. This goes along with an increase in soil total nitrogen content of up to 21% (47% on one of the old organic farms), which nevertheless was shown not to lead to increased nitrogen losses to the groundwater due to nitrogen-conserving practices used in organic farming. In the “plant available” soil contents of phosphorus

and potassium, there appears to be no general trend under “organic” as compared to conventional management. Soil structure is typically positively affected by organic farming practices. There were up to 70% more stable macro-aggregates in organic farming, and infiltration rates were up to twice as high as under conventional management. Soil water content increased by 5–72% in the studies analyzed, and increased soil water content was reported to account for 30% higher yields in the organic systems during the extremely dry years experienced during the Rodale Farming Systems Trial. Erosion, as assessed by measuring topsoil thickness, was lower under organic management, resulting in 2–16 cm thicker top soils. When the universal soil loss equation (USLE) method was used to model erosion, between 15% and 30% less erosion under organic management was reported. In summary, the research analyzed shows that organic management protects and improves soil quality. The main factors responsible for these benefits were identified as larger inputs of organic matter (manure, compost); more diverse crop rotations, including cover crops and green manures; and a longer time span of soil cover. Because organic farming is the only farming system that is legally defined and controlled, these benefits of organic farming can be relied on, although there is some differentiation within organic farming by different farm types and production intensities. (Source - Eva Erhart and Wilfried Hartl 2010, Organic Farming, Pest Control and Remediation of Soil Pollutants, Sustainable Agriculture Reviews, 2010, Volume 1, 203-22)

**Evaluation of the Micronutrient Composition of Plant Foods Produced by Organic and Conventional Agricultural Methods** - The aim of the present analysis was to evaluate the micronutrient content of plant foods produced by organic and conventional agricultural methods. Studies were identified from a search of electronic databases (1980–2007, inclusive) as well as manual searches. A total of 66 studies (describing 1440 micronutrient comparisons) were identified. Thirty-three studies (908 comparisons) satisfied the screening criteria which considered cultivar, harvesting, and

soil conditions. In studies that satisfied the screening criteria, the absolute levels of micronutrients were higher in organic foods more often than in conventional foods (462 vs 364 comparisons,  $P=0.002$ ), and the total micronutrient content, expressed as a percent difference, was higher in organic (+ 5.7%,  $P < 0.001$ ) as compared to conventionally grown produce. The micronutrient content of food groups was more frequently reported to be higher for organic vegetables and legumes compared to their conventional counterparts (vegetables, 267 vs 197,  $P < 0.001$ ; legumes, 79 vs 46,  $P=0.004$ ). This trend was supported by a mean percent difference in micronutrient content favoring organic vegetables (+ 5.9%,  $P < 0.001$ ) and legumes (+ 5.7%,  $P < 0.001$ ). Further research is required to determine the effect of organic agricultural methods on a broader range of nutrients and their potential impact on health. (Source – Hunter et al 2011, Critical Reviews in Food Science and Nutrition Volume 51, Issue 6,)

**Is there any difference between the phenolic content of organic and conventional tomato juices?** - The present study aims to compare the phenolic and hydrophilic antioxidant profiles of organically and conventionally produced tomato juices. Comparisons of analyses of archived samples from conventional and organic production systems demonstrated statistically higher levels ( $P < 0.05$ ) of phenolic compounds in organic tomato juices. This increase corresponds not only with increasing amounts of soil organic matter accumulating in organic plots but also with reduced manure application rates once soils in the organic systems had reached equilibrium levels of organic matter. Using principal component analysis, results show that phenolic compounds and hydrophilic antioxidant capacity were responsible for the differentiation between organic and conventional tomato juices. Thus, there appear to be genuine differences in the bioactive components of organic and conventional tomato juices not previously reported. Highlights of the study were: (a) Differences in bioactive components of organic and conventional tomato juices not previously reported (b) Crop management

influence food composition and, therefore, the production of high-quality foods (c) Twelve polyphenols are able to distinguish tomato juices from different agronomic treatments (d) The higher polyphenol content in organic juices is due to a higher phosphorus uptake and limited nitrogen availability. (Source - Anna Vallverdú-Queralt et al 2011 Food Chemistry Pages 222-227)

**Antioxidant Activity, Color, Carotenoids Composition, Minerals, Vitamin C and Sensory Quality of Organic and Conventional Mandarin Juice, cv. Orogrande**

- The effects of organic farming on antioxidant activity, CIE L\*a\*b\* color, carotenoids composition, minerals contents, vitamin C and sensory quality of Orogrande mandarin juices were studied. Independent of the farming type, mandarin juices can be considered as good source of some important nutrients, such as potassium and antioxidant chemicals, for example,  $\beta$ -cryptoxanthin. Organic farming of mandarins resulted in juices with higher antioxidant activity, total carotenoid concentrations, minerals (Ca, K and Fe) contents, vitamin C content, more appealing and intense orange color and better sensory quality. For instance, organic Orogrande juice contained significantly ( $p < 0.001$ ) higher total carotenoids content ( $22.7 \pm 0.3$  mg/L) than conventional juice ( $15.7 \pm 0.4$  mg/L); a similar pattern was observed for the antioxidant activity, with values being  $0.076 \pm 0.004$  and  $0.053 \pm 0.003$  mM Trolox m/L in organic and conventional juices, respectively. A trained panel stated that organic Orogrande juices had higher intensities of orange color, fresh mandarin and floral aromas than conventional juices. (Source P. Navarro et al Food Science and Technology International June 2011 vol. 17 no. 3241-248)

**Adoption of organic farming: Are there differences between early and late adoption?**

– Based on the fact that not all farmers adopt a technology at the same time, it is argued in this paper that the distinction between groups is important because early, medium and late adopters respond differently to economic and non-economic factors when they consider

whether to take up organic farming or not. The individual effects on adoption between the groups are identified by the use of multinomial logit analysis. The results provide evidence that there are significant differences in the characteristics between the adopter groups. The findings also reveal that the factors that affect adoption play a different role for early, medium and late adopters, particularly with regard to farming intensity, age, information gathering as well as attitudes of the farmer. More specifically, early adopters were the youngest to adopt organic farming and their decisions were found to be less profit related compared to other groups. Late adoption is constrained by risk considerations, while environmental attitudes and social learning were identified to be important determinants for all adopter groups. Overall, the findings strongly suggest, that for policy measures to be effective, the current state of diffusion has to be taken into account. Research Highlights are (a) Differences in early, medium and late adoption of organic farming are examined. (b) The adopter groups differ significantly in certain farm and farmer characteristics. (c) Many factors that affect adoption play a different role for the adopter groups. (Source – Lapple and Rensburg 2011, Ecological Economics 70 (7), Pages 1406-1414)

**Pakistan Initiates Work on the Preparation of National Guidelines for Production, Processing, Labelling and Marketing of Organically Produced Foods**

- The Pakistan Standards and Quality Control Authority (PSQCA) of the Government of Pakistan has initiated work for preparing the Guidelines for Production, Processing, Labelling and Marketing of Organically Produced Foods. An Organic Foods Technical Committee, consisting of scientists and regulators from both public and private sector, has been constituted by the PSQCA for this purpose. The Committee members include experts from the governmental departments with representatives from private companies involved in the production; processing, marketing and labelling of organically produced foods in Pakistan. The aim of the guidelines will be: (a) to protect consumers against deception and fraud in the market place and unsubstantiated product claims;

(b) to protect producers of organic produce against misrepresentation of other agricultural produce as being organic; (c) to ensure that all stages of production, preparation, storage, transport and marketing are subject to inspection and comply with these guidelines; (d) to harmonize provisions for the production, certification, identification and labelling of organically grown produce; (e) to provide National guidelines for organic food control systems in order to facilitate recognition of national systems as equivalent for the purposes of imports; and (f) to maintain and enhance organic agricultural systems in the country so as to contribute to local and global preservation. (source - <http://www.organic-world.net>)

**E. coli – A Problem Not Specific to Sustainable Agriculture** - There has been much speculation about the pathogenic EHEC bacterial strain that has tragically claimed the lives of more than 30 people so far in Germany. Meanwhile, the transmission pathways have for the most part been identified. The origin of the pathogen, however, is largely unclear. In the context of the EHEC outbreak there have been debates as to whether certain agri-cultural methods (e.g. mixed holdings including both livestock and crop production, or the use of organic fertilizers for vegetable production) or certain sanitization methods for fresh consumable products (such as the use of organic acids, a mild treatment that leaves fewer residues) may increase the risk of infection. This document does not address the current epidemiological situation of the outbreak in northern Germany. Its purpose is rather to provide background information on the question of how sustainable agricultural methods based on nutrient cycling deal with pathogens that can be transmitted from animals to humans (zoonoses). The document can be downloaded in several language versions from [OrgPrints.org](http://OrgPrints.org): Enterohaemorrhagic E. coli (EHEC) – A Problem Not Specific to Sustainable Agriculture.

**USDA census shows profitability of organic farming** - Organic farms had higher net income in 2008 than the USDA's figures for all farms in 2007, the latest all-farm

numbers, reported by the National Agricultural Statistics Service (NASS). The 14,540 organic farms reporting in had an estimated average net income that was \$20,249 per farm per year higher than the all-farm figure. (Net income is total sales less expenses. "This shows that organic production systems were more profitable than conventional farms during this period, while also improving the soil, conserving energy, and sequestering more carbon," said Jeff Moyer, farm director for the Rodale Institute. "This is exciting data shows the pioneering achievements of this type of farming. "The organic farms had average annual sales of \$217,675 (compared with the \$134,807 average for all U.S. farms in 2007), and higher average annual expenses of \$171,978 (\$109,359 for all farms). Organic farms were, on average, more profitable than the average of all farms in the U.S., according to results of the first-ever federal census of organic agriculture. A total of 14,540 organic farms had sales of \$21.1 billion from more than 4 million acres of farm and rangeland, according to the USDA's Economic Research Service. (Source - [www.rodaleinstitute.org](http://www.rodaleinstitute.org))

**Canada's Organic Rules in Full Force** - Canada's Organic Products Regulations have been fully enforced after June 30, two years after the regulations became law in 2009. The Canadian Food Inspection Agency (CFIA) has followed a two-year Stream of Commerce and Enforcement Policy, allowing operator's time to become fully compliant with the regulations. During this "phase-in" period, the CFIA managed minor non-compliances through notification and education, requiring correction within reasonable timelines. The 2009 regulations made Canada's organic standards mandatory for both domestic and imported products, and launched the now familiar "Biologique Canada Organic" logo, which allows consumers to identify products that meet Canada's organic requirements. The CFIA oversees and enforces the organic certification system, as well as organic claims in the marketplace. (Source - Canada Organic Trade Association, <http://www.ota-canada.ca/>)

## National and International Events Seminars/ Conferences/ Workshops

**Workshop to define Himachal Pradesh Organic Farming Policy – 18<sup>th</sup> August 2011**, Department of Agriculture, Himachal Pradesh organised a one Day “Organic Stakeholders Workshop to develop Organic Policy for Himachal Pradesh. The workshop was Chaired by Shri Ram Subhag Singh, Secretary Agriculture, Government of Himachal Pradesh and Dr Tej Pratap, Vice Chancellor SKUA&T Kashmir, Srinagar. Important dignitaries participated in the workshop include Dr. A.K. Yadav, Director, NCOF, Dr J.C. Rana, Director Agriculture, Himachal Pradesh and Shri Manoj Menon, Executive Director, ICCOA, Bangalore. After day long deliberation a draft of policy document was prepared. The concluding session was joined by the Chief Minister of Himachal Pradesh Prof. Prem Kumar Dhumal. Lauding the efforts of the committee designated for the purpose and the efforts of Dr Tej Pratap in drafting the policy document, Chief Minister Prof. Dhumal emphasized the growing importance of organic farming in the country with strategic advantage of Himachal Pradesh for capturing the opportunity of organic agribusiness. The salient features of the proposed “Organic Farming Policy: Vision and Mission” are as follows:

### Vision and Mission

- i. Facilitate creating enabling environment for organic farming by farmers of the state, through formulating favourable policies, developing appropriate institutions, plans, infrastructure and market access to organic farmers.
  - ii. Ensure production and market access to organic produce in the state by facilitating network of supply chains and markets.
  - iii. Strengthen crop-livestock linkages and make Himachal organic compost rich state,
  - iv. Convert forests and forest produce into certified organic, facilitating organic fodder supplies and livestock products.
  - v. Facilitate organic agribusiness investment in the state.
  - vi. Facilitate development of organic villages/ areas and organic valleys, to transform these into organic agro tourism .
- Organic farming policy: Scope**
- i. Farm lands and crops; comprising, annual and perennial food crops, fiber crops, horticulture crops- fruits and vegetables, plantation crops, and spices crops etc.
  - ii. Livestock and livestock products, cattle, sheep, goats, poultry, fisheries, honey bees, and sericulture, etc
  - iii. Forests, rangelands, pastures, waste lands, support lands/ common lands, revenue lands , and the non timer forest products collected as wild harvest from these lands.
  - iv. Water resources of the state, rivers, streams, springs, ponds, all drinking water sources and irrigation sources.
  - v. Processed foods and beverages, such as , beer and wines etc.
  - vi. All farm produce from plant and animal origin,
  - vii. Inputs, like manures, compost, municipal solid waste of biodegradable nature, liquid microbial solutions, bio-insecticides, repellents, anti-feedants, fungicides, hormones and enzymes of plant and microbial origin etc.

The proposed draft is now being widely circulated for feedback and comments. Based upon the feedback received within the stipulated time the draft may be suitably modified and then shall be sent to the cabinet for approval.

The strategic step of Himachal Pradesh is highly laudable and encourages the efforts of organic fraternity in the country. The step is going to have far reaching effect not only on the economy of the state but may also have encouraging effect on other States.

**Workshop on Organic Basmati Rice Production and Marketing** - A one day Workshop on Organic Basmati Rice Production and Marketing was organized at Jammu Club, Jammu on 20 September, 2011. Minister for Agriculture of J & K, Jenab Ghulam Hassan Mir asked the rice growers of the state to go for organic farming as it has inherent cost advantage in view of growing markets for organic products at global level while addressing a gathering of farmers and Agriculture Department officers and scientists after inaugurating the workshop organized by Directorate of Agriculture, Jammu and sponsored by Basmati Export Development Foundation (BEDF) in collaboration with APEDA. More than 150 farmers from Jammu, Kathua and Samba and officers of the Department attended the workshop. Speaking on the occasion, the Minister said that there is a growing awareness and demand for organic agricultural products in the national and international market in view of the health hazards of the pesticide and chemical fertilizer residues. He added that the organic cultivation of Basmati rice needs to be popularized and is being taken up in large scale in our state. He disclosed that the farmers can harvest rich dividends and the farming can become sustainable by introducing organic farming on commercial, scientific and organized lines. The Minister hoped that the farmers will achieve a major breakthrough in agriculture through organic farming of Basmati Rice with the innovative collaboration of the Department and with the scientists. He congratulated the Rice growers of the state for inclusion of grains of Basmati Rice-370 and Ranbir Basmati varieties of R.S Pura by the Ministry of Commerce, Govt. of India in its list of exportable items. He further added that R.S Pura and surrounding areas take pride in projecting the traditional Basmati Rice as a geographical indicator crop as far as Jammu region of J&K state is concerned. He stressed upon the rice growers of the state to go for organic farming as it has inherent cost advantage and markets for organic products are coming into existence at global level. Director Agriculture, Jammu Ajay Khajuria in his address appreciated the sustained efforts of R S Pura Rice Growers Association for campaigning for the

Government intervention in promoting the interests of traditional basmati rice growers of the state. He said that the technical session and Buyer-Seller Meet at Chandigarh during Agro-Tech-2010 provided the local farmers an opportunity to listen to the experts from APEDA and Basmati Export Development Foundation (BEDF) and All India Rice Exporters Association (AIREA) who shared their valuable experiences in production, post harvest management and marketing of Basmati Rice. He said during the event the experts and scientists, provided a deeper insight into the prospects of basmati Rice promotion in J&K state. He further disclosed that the promotion of organic farming is being done by the Department under respective components of CSS namely RKVY, Technology Mission for NE and Himalayan states and National Vegetable Initiative for Urban Clusters. He revealed that 531 vermicompost units were setup during 2010-11 in Jammu region, while 327 more units are being setup in the current year. DGM, APEDA Navneesh Sharma also discussed the role of APEDA in certification of organic production. Smt Samidha Gupta from APEDA discussed the procedure of organic farming certification and growers group system for farmers. Senior Scientist and Incharge BEDF, Dr Ritesh Sharma, who was instrumental in organizing this workshop, gave detailed introduction about Basmati Rice Export Development Foundation (BEDF). The other resource persons who deliberated in the workshop included consultant HAFED, Panchkula Mr. Kamaljeet, Mr.R Sudershan Executive Director AIREA, Dr. Rameshwar from CSKHPKV, Palampur, Dr. Dushyant Gehlot, NCOF, Ghaziabad, DR. J P Sharma Associate Director SKUA&T, Jammu, Mr.V K Bhakri, Joint Director Agriculture (Inputs) and Joint Director SLUB Mr C S Bhagat. Joint Director Agriculture Extension Dr S S Jamwal, presented vote of thanks.

**Conference on Earth Science and Climate Change Research** – is scheduled for September, 25-28, 2011 at the International Centre Goa. GLOBE Regional Office for Asia Pacific in association with the Indian Environmental Society is the organizer of the conference. The conference will be attended

by the scientists research scholars, academicians, NGOs and other communities. The main focus of the conference will be to promote and encourage research campaign on Earth Science and Climate Change Research. The conference will also help in developing a strong network among various participants. The main aim of the conference is to disseminate the message and values of research on environment to scientists, academicians, youth, and students through innovative approach and help to initiate Research Campaign and action on the most critical environmental issue of concern such as climate change. For more details and participation please contact Dr. Desh Bandhu, Chairman, Conference on Earth Science and Climate Change Research, Director-GLOBE Regional Office for Asia-Pacific or visit [www.globeindia.org/asia-pacific](http://www.globeindia.org/asia-pacific)

**AgriTech India 2011-** South India's largest exhibition on Agriculture, Farm Machinery, Equipment, Water Management, Dairy & Agri Processing Industry is being organized 09-11 September, 2011 at Gayathri Vihar Palace Ground, Bangaluru. Delegation in the exhibition will be from Holland, Sri Lanka, Bhutan, Nepal and Bangladesh. Farmers from State Horticulture Mission will also be participating in the exhibition. The exhibition will give plate form to almost all communities from Agriculture fields. Interested persons / exhibitors may contact: Media Today Pvt. Ltd. (Exhibition Division), T-30, 1<sup>st</sup> Floor, Khirki Extension, Malviya Nagar, New Delhi-110 017 or visit: [agritechindia.com](http://agritechindia.com)

**One Day Workshop on Organic Agriculture & Certification** - Amity Institute of Organic Agriculture (AIOA) is organizing "One Day Workshop on Organic Agriculture & Certification" under ATMA Project for District Ghaziabad with a view to educate and motivate the prospective organic growers of the region. The Workshop is being held on Thursday, the 29<sup>th</sup> September 2011 at 10.00 am in the F- 1 Block Seminar Hall of Amity University Campus, Sec 125, NOIDA, India.

**The 17<sup>th</sup> IFOAM Organic World Congress 2011-** The 17<sup>th</sup> IFOAM Organic World

Congress 2011 is scheduled to be organized at Namyangju Sports & Culture Center, Namyangju City, Gyeonggi Province, Republic of Korea during 26<sup>th</sup> September, 2011 to 5<sup>th</sup> October, 2011 the program will include various sessions on Urban Agriculture, Textile Seed, Aqua Culture Wine etc. Local tour to experience organic agriculture is a part of the program. Interested persons may please visit the website

[http://www.kowc2011.org/eng/01\\_owc/overview.asp](http://www.kowc2011.org/eng/01_owc/overview.asp) for further details

**Organic gardening workshop scheduled for Sept. 29 in Southington** - A gardening workshop that will teach residents how to practice organic lawn and landscape care will be offered on Sept. 29. "Green Up Your Land with Organic Land and Lawn Care" is to take place at 6:30 p.m. in the Southington library. Put on by the Northeast Organic Farming Association of Connecticut the group encourages people to utilize methods of farming and gardening that respect biodiversity. Throughout the workshop participants will be given handouts with information and resources on how to practice organic lawn care as well as the importance of it. (Visit [www.myrecordjournal.com](http://www.myrecordjournal.com))

**Sustainable Cosmetics Summit...Taking natural & organic beauty to new frontiers** - The first-ever Asia-Pacific edition of the Sustainable Cosmetics Summit hones in some of the major marketing and technical issues associated with natural and organic cosmetics. Topics on the summit agenda include formulating sustainable cosmetics, growth openings in global natural & organic cosmetics market, sustainability best-practices, green ingredients and marketing & distribution innovations. The summit takes place in Hong Kong on 7-8th November 2011. Participants of the Asia-Pacific summit will learn how to overcome the major formulation issues associated with natural & organic cosmetics and identify business opportunities in the Asian and global market. Like previous editions, the Sustainable Cosmetics summit will bring together key stake-holders in the beauty industry that include cosmetic manufacturers, ingredient & raw material suppliers, retailers &

distributors, industry organizations & certification agencies, researchers & academics, investors, etc. Organized by Organic Monitor, the aim of the Sustainable Cosmetics Summit is to encourage sustainability in the beauty industry by bringing together key stake-holders and debate major issues in a high-level forum. The next European edition of this executive summit takes place in Paris on 28-30th November. For more details and participation visit <http://www.sustainablecosmeticssummit.com/Asia/index.htm>

**2011 New Mexico Organic Farming Conference** - The 2011 NM Organic Farming Conference was held during February 18-19th at the Marriott Pyramid Hotel in Albuquerque, New Mexico. Various technical issues such as on crops, livestock, weed and pest management, market gardening, and farm support were discussed in over 30 sessions. Sessions were organized by experienced organic producers and experts in the field. For more information contact Le Adams at 505-473-1004 x 10 or Joanie Quinn at 505.841-9067.

**BioFach Japan** - In 2010, the international organic trade fair BioFach Japan successfully celebrated its ten-year anniversary: more than 260 exhibitors welcomed over 17,000 trade visitors to the halls of the "Tokyo Big Sight" trade fair grounds. From 1 to 3 November 2011, the largest Japanese trade fair for organic foods, natural cosmetics and textiles will welcome visitors to metropolitan Tokyo for the eleventh time. Because of the catastrophes in the spring of this year, Japan is even more dependent on food imports than before. At the same time the demand for organic products is rising appreciably. The recent "Japanese Organic Market 2010 – 2011" study forecasts huge potential for the green market. Current sales of organic food products in Japan amount to an estimated

1.3 billion US dollars. This is equivalent to about 1 percent of the total Japanese food market.

**USA: Natural Products Expo East conference and events and BioFach America** - The largest East Coast trade event, showcasing the latest launches in **natural, organic and healthy living products** and co-located with All Things Organic-BioFach America and The Organic Summit will be held at the Baltimore Convention Center in Baltimore, Maryland, from 21 to 24 September 2011. The fair is open to a professional audience of media, manufacturers, buyers and industry members. Natural Products Expo East will bring together industry members in a variety of networking events including the annual Community Celebration, Celebrity Chef Demonstrations, Women in Naturals Reception and through partnership events with the OTA, eTown, Farm Aid and Vitamin Angels. The entire education program encompassing business management, consumer trends, retailer workshops, supply, sourcing, and digital strategies, and the state of the industry can be found. For further details visit [www.organic-market.info](http://www.organic-market.info).

**Sustainable Foods Summit, June 23-24, 2011**- The 4th edition of the high-level "Sustainable Foods Summit" took place in Amsterdam (June 23-24) and focused on two major aspects of sustainability in the food industry: carbon footprint reduction and sustainable ingredients. The summit was organized by Organic Monitor at Amsterdam, The Netherlands. This event featured four sessions on Pioneering Sustainability Initiatives, Climate Change Strategies, Marketing & Distribution Innovations, Lowering Environmental Impacts by Sustainable Ingredients, For more details visit [www.sustainablefoodssummit.com](http://www.sustainablefoodssummit.com).

## Book Reviews

**Climate Change and Food Security in India, A.K. Tripathi and H. Pathak (Eds.), 2011. The Society of Agricultural Professionals, CSAUAT, Kanpur, India 344 p.**-The present book encompasses lead and invited papers presented by the eminent scientist during the National Symposium on "Food Security in Context of Changing Climate" held at CS Azad University of Agriculture and Technology, Kanpur, UP, during 30 October-01 November, 2010. Total 28 Chapters and Proceedings and Recommendations of the NSFSC-2010 has been incorporated in the book. Contributors to the book has contributed articles on Climate Changes, Climate Change and Agriculture, Weather based insurance, Precision farming, Organic Agriculture, Weed Management Food Forage based system for food and nutritional security, Role of Micronutrients in crop Productivity, Livelihood Security, Post Harvest Management of Fruits and Vegetables, Intellectual Property Rights and many more others issues related to and in association with climate change. The book will be very useful for researchers, students and academicians. (DG)

**Proceedings of Brain Storming Conference on Bringing Homa Organic Farming into the Mainstream of Indian Agriculture System, 2009, Dr. Ulrich Berk, Bruce Johnson (Eds.), Fivefold Path Publications, Dhule, Maharashtra, India, 98 p** - This Brainstorming Conference was organized at the instigation of Dr. R.K. Pathak, then Chief Consultant of National Horticulture Mission, and supported by the Planning Commission, Government of India. It was an effort to show how individuals and organizations can work together to create a sustainable world in the field of agriculture. It also gives advice on how to communicate across different groups and organizations and key recommendations for future research and action. The conference was held in Tapovan, an example of a flourishing, sustainable world, and of how to respond effectively to the greatest challenges of our time. The proceedings

includes deliberations by various resource persons on the topics such as; Farmers experience with homa organic farming, Effect of homa organic farming on environment, scientific evaluation, Expectations and prospects, Homa organic farming-technical details etc. These proceedings will definitely serve better for understanding Homa Farming Practices. (DG)

**Good Agricultural and Collection Practices for Medicinal Plants-Illustrated Booklet for Farmers and Collectors, Food and Agriculture Organization of the United Nations compiled by Ben Heron and Satyabrata Maiti, FAO, Italy, 40 p** - Good Agricultural and Collection practices (GACP) for Medicinal Plants are a set of guidelines aimed at advising medicinal plant producers on how to improve the safety, efficacy, and quality standards of raw materials used in the preparation of herbal medicines. One of the objectives of the guidelines was to create a basis upon which further country or region-specific standards can be developed that are targeted specifically towards the farmers and collectors of that area. This booklet is part of an initiative taken by the FAO in 2010 to develop training material that further simplified the standards into a format that allows for easier comprehension and adoption by farmers and collectors. In addition to this booklet a training video and a trainers' manual have also been developed, all of which have been designed to used together to achieve the best GACP training results. (DG)

**Biodynamic Organic Farming : An Ecofriendly Homeopathic Alternative to Chemical Farming L.L. Somani, Agrotech Pub, 2011, 208 p, tables, figs, ISBN : 8183212093**-Biodynamics is an advanced organic method in which no artificial fertilizers or chemical sprays are used. The plant is influenced not just by the soil in which it grows, but by the water in the soil and the atmosphere, other plants nearby, the air around it, the amount of light and

warmth it receives from the sun, and also the influences coming from other cosmic bodies, the moon, the sun, planets and stars and the entire cosmos. This book on biodynamics has following chapters: 1. Biodynamic farming at a glance. 2. Non-chemical methods of farming. 3. What is biodynamics? 4. The biodynamic farming: A holistic approach to organic farming. 5. History of biodynamic farming. 6. Need of biodynamic farming. 7. Summary of Steiner's eight lectures. 8. Biodynamic farming -- the movement. 9. Principles of biodynamic farming. 10. Organic farming vs. biodynamic farming. 11. Biodynamic and conventional farming. 12. The farm as an agricultural individuality. 13. Zodiac principle of biodynamic. 14. Biodynamic planting calendar and lunar and solar rhythms. (DG)

**Efficient Utilization of Farm Wastes for Sustainable Agriculture A.B. Singh, K. Sammi Reddy, M.C. Manna and A. Subba Rao, Agrotech, 2011, 328 p, figs, tables, ISBN : 8183212123,-**This book

contains very useful information on various on-farm and off-farm organic wastes being used for soil fertility management in INM and organic farming, nutrient enriched composts preparation, use of vermicomposting techniques for biodegradation of organic wastes, conservation agriculture, and the effect of organic wastes on crop and soils quality, soil carbon dynamics. This publication will be quite useful to researchers, students, extension persons, policy makers and all those engaged in developing efficient nutrient management strategies for sustainable agriculture. Contents of the book are 1. Rational use of different on farm and off farm organic resources in India 2. Efficient manure application, availability in soil, crop utilization and response analysis of manure nutrients 3. Chemical and biochemical quality assessment of compost prepared from organic wastes 4. Effect of use of sewage water, MSW and city wastes on crop quality parameters 5. Sewage water utilization for production of medicinal and aromatic plants 6. Recent developments in the assessment of crop produce quality 7. Online fertilizer recommendation system 8. Nutrient mineralization characteristics of different organic manures 9. Issues in soil

test crop response correlation based fertilizer recommendations: a self introspection 10. Contribution of on-farm and off-farm resources in integrated nutrient management prescriptions 11. Status and prospects of organic farming in India 12. Micronutrients in soil - their role in plant growth and estimation by soil test methods 13. Nanotechnology in agriculture 14. Potential traditional water harvesting systems for sustainable crop production in Madhya Pradesh 15. Efficient use of sugar industry wastes for sustainable crop production and soil fertility 16. Soil testing as a tool for balanced nutrition for sustainable agriculture 17. Nutrient use in Indian agriculture and paradigm shift in fertilizer policy. (DG)

**Organic Farming, Archana Singh, Pointer, 2011, xii, 260 p, ISBN :**

**8171326471-**The present book Organic Farming incorporates critical review and research articles on management of organic farming. Important articles are on Ancient Plant Protection Practices: Relevance As On Now, Organic Agriculture: Global and Indian Scenario, Organic Farming in India: Perceptive and Prospects, Standards and Certification and Inspection in Organic Agriculture, Organic Farming: Status and Scope in Special Reference to Indian Agriculture. Valuable information on Exploitation of Traditional Knowledge in the Management of Crop Diseases under Organic Agriculture in India, Plant Growth Promoting Rhizobacteria for Biocontrol of Plant Diseases, Pest Management in Organic Farming, Kunapjala (Organic Manure and Pesticide) for Crop Health. The detailed information is given on Bio fertilizers: Its Production and Application in Organic Farming. Plant Growth Promoting Rhizobacteria (PGPR) Associated with Plant Nutrition, Mycorrhizal Inoculation of Potential Medicinal Plants, Biogas Manure (BgM) a Rich Source of Plant Nutrients and Substitute to Inorganic Fertilizers, Impact of Organic Cultivation on Soil Health for Long Term Sustainability, Sustainable Crop Production through Organic Farming, its Waste and Management, Organic Culture and GM Technology, Certified Organic Farming: Evolution and Regulations, Socio Economic Impact of Organic Farming:

Concept, Measurement and Issues. One article is more relevant in the present scenario which is related to human health, as pesticides and chemicals polluted the food and drinking water which cause many human diseases out of which one important disease like Diabetes: The Chronic Health Hazard of Non Organic Farming. The sufficient information is given on Organic Live Stock Production and Food Production Method and Animal Health. The text covers available information on principles and practices of organic farming related to agriculture and livestock. The book will be useful and widely accepted by students, teachers, researchers, Botanists and Agriculturists and to all those who are interested and concerned with the organic farming. (DG)

**Organic Soil-Fertility and Weed Management**, Steve Gilman Chelsea Green Publishing, 2011 - 127 pages - Soil is a living organism that loves to cooperate with farmers and gardeners. A green thumb will appear on those who align themselves with its health and requirements. This book discusses: Soil habitat Sustaining soil fertility The soil food-web Nutrient availability and deficiency After reading this book, readers will not only have a different view on soil, but on weeds as well. Knowing and utilizing the energies and characteristics of weeds, as Gilman teaches, will make for a more productive garden, and less stressful gardening.

**Organic farm management handbook** - The new edition of the Organic Farm Management Handbook is now available, published by the Organic Research Centre at Elm Farm. This publication is covering a broad range of market, certification, policy, financial and technical information about different organic systems and enterprises. The Organic Farm Management Handbook is a reference source on conversion to and continued organic farming for farmers, growers, consultants, bankers, land agents, buyers, students and many more interested parties. The Organic Research Centre sees

this new edition as necessary in a time of emerge from recession and in preparation for the next phase of CAP reform. Coupled with the serious attention now being given to the role of organic farming by the European Commission as part of the CAP Reform debate, now may be the time to start thinking again about the potential of converting to organic farming. The handbook reflects the difficulties that the organic sector has faced in the market place, but also shows the evidence from the Farm Business Survey which revealed that organic farms have in general maintained income levels and continue to perform as well as similar non-organic farms. Looking forward, increasing general food prices and a potential recovery in the UK organic market, which has continued to grow elsewhere in Europe and globally despite the recession, mean that prospects for organic farming maintaining its profitability are good. Copies of the handbook can be ordered via email at £ 18.50 plus p&p, with a discount available for bulk orders and trade purchasers.

**Microbial Biotechnology for Sustainable Agriculture, Horticulture and Forestry by D.J. Bagyaraja, New Publishing agency, New Delhi, pages 308, Price Rs. 2180, US\$ 90** – The book encompasses to cover comprehensively different group of microorganisms used for sustained productivity of plants important in agriculture, horticulture and forestry. The readers may appreciate the potential and fascination of biotechnological approaches used for utilizing microorganisms in sustainable agriculture, horticulture and forestry. The readers may appreciate the potential and fascination of biotechnological approaches used for utilizing microorganisms in sustainable agriculture, horticulture and forestry. The book is a comprehensive and detailed analysis of the subject. The book will be useful to students, teachers and researchers interested in microbiology, biotechnology, natural resource management, organic farming and sustainable agriculture, horticulture and forestry. (Jacket)

**List of Authorised Regional Councils approved during the first PGS-NAC meeting held on 20<sup>th</sup> July 2011 at PGS Secretariat, NCOF, Ghaziabad, U.P.**

**Andhra Pradesh**

Society for Elimination of Rural Poverty  
HMDA Hermitage Office Complex, 4th  
Hyderabad  
Andhra Pradesh 500004

Makkal Nala Sangam  
No.2 Selection Tailors Upstair Back Side,  
Salem  
Tamil Nadu 636115

**Karnataka**

Participative Watershed and Rural  
Development Agency (PRAWARDA)  
#8-9-270/A-36, Behind Baridshahi Garden,  
Bidar  
Karnataka 585401

Organic Farming Organization  
Dhanalakshmi Illam, No. 15, Third Main  
Vellore  
Tamil Nadu 632001

Shri Saptgiri Rural Development  
Society  
No. 932, 1st Block HRBR Layout, Kalyan  
Bengaluru  
Karnataka 560043

Organic Farming Organization  
Dhanalakshmi Illam, No. 15, thrid Main  
Vellore  
Tamil Nadu 632001

Belgaum Integrated Rural  
Development Society (BIRDS) KVK  
Nagnaur  
Belgaum  
Karnataka 591319

**Maharashtra**  
Neem Foundation  
Village Gondkhairy, Amrawati Road  
Nagpur  
Maharashtra 441501

Association for Promotion of Organic  
Farming  
UAS Alumini Building (By the side of  
Bengaluru  
Karnataka 24

Gramin Krishi Kranti Seva Bhavi Sanstha  
Yammewar Complex, Near Market  
Nanded  
Maharashtra 431807

Social Welfare and Rural Development  
Society (SWARDS)  
Raghava Nilaya, GBN Gate Near T.V.V.  
Tumkur Karnataka

Centre of Science for Villages  
Post Box No. 21, Kumarappapuram,  
Wardha  
Maharashtra 442001

Mysore Green Exports Pvt. Ltd.  
No. 213/Y, 13th Main Road, 3rd Block,  
Bengaluru  
Karnataka 560010

Siddhi Vinayak Group,  
Opp. Govt.. Milk Dairy,  
Amravati, Maharashtra

Janodaya  
No. 3, 9th Cross, 5th Main, Jayamahall  
Bengaluru  
Karnataka 560046

**Madhya Pradesh**

Paryavaran Sanrakshan Evam Adivasi Vikas Kendra  
413/1, Mittal Apartment, South Civil Lines Jabalpur  
Madhya Pradesh 482001

**Kerala**

Manarcadu Social Service Society  
Manarcadu P.O.  
Kottayam  
Kerala 686019

**Rajasthan**

Society for Organic Agriculture Movement (SOAM), 26,  
Gayatri Nagar-B, Maharani Farm, Durgapura,  
Jaipur-302018 (Rajasthan)

**Tamil Nadu**

T.V. Srinivasan Centre for Rural  
Training  
Bethalappally, Sipcot II  
Hosur Tamil Nadu 635125

**Uttar Pradesh**

Foundation for Agriculture Resources  
Management and Environmental  
Remediation (FARMER)  
SJ-14, Shastri Nagar  
Ghaziabad  
Uttar Pradesh 201002

Horticulture Produce Management Institute,  
3/15 Mohan Nagar, Industrial Area,  
Ghaziabad, Uttar Pradesh

