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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 प्रक्रियाऐ, सेमिनार-कान्फ्रेन्स इत्यादि की सूचना तथा राष्ट्रीय व अर्न्तराष्ट्रीय 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.

संपादकीय

प्रिय पाठको

जैविक खेती विधा पिछले कुछ वर्षों से उत्तरोत्तर प्रगति पथ पर है तथा विभिन्न आवश्यकताओं की पूर्ति हेतु अनेक नये आदान विकसित किये जा रहे हैं तथा प्राचीन परंपरागत तकनीकों का विज्ञान परक मूल्यांकन किया जा रहा है। इस अंक में एक नये होम्योपैथिक आदान का तथा होमा तकनीक का रोगाणुओं पर प्रभाव पर विवरण प्रस्तुत किया जा रहा है। जैविक कपास तथा अन्य उत्पादों में लगातार बढ़ती भारत की उत्पादन क्षमता से भारतीय जैविक खेती उद्योग की विश्व में साख बढ़ी है। अनेक राज्य सरकारें जैविक उन्नयन कार्यक्रम चला रही हैं इसी श्रंखला में मध्य प्रदेश में जैविक खेती उन्नयन नीतियों का राज्य सरकार द्वारा अनुमोदन तथा बिहार में जैविक खेती उन्नयन का विशेष कार्यक्रम जिसके अंतर्गत अगले 4 वर्षों के लिये रू. 255 करोड का प्रावधान किया गया है प्रमुख गतिविधियॉ हैं। इस अंक में पिछले 3 महीनों में आयोजित हुई अनेक सेमीनार/गोष्ठियॉ व कार्यशालाओं में जिन विचार बिन्दुओं पर बहस हुई का भी विवरण दिया जा रहा है। राष्ट्रीय जैविक खेती परियोजना के अधीन हिमाचल प्रदेश कृषि विश्वविद्यालय में आयोजित एक राष्ट्रीय संगोष्ठी तथा एशिया उत्पादकता परिषद जापान व राष्ट्रीय उत्पादकता परिषद नई दिल्ली द्वारा आयोजित जैविक प्रमाणीकरण व जैविक मानकों पर एक अंतर्राट्रीय प्रशिक्षण का भी विवरण अन्य सभी स्थायी स्तंभें जैसे भारत जैविक समाचार, वैश्विक जैविक, राष्ट्रीय व अंतर्राष्ट्रीय घटनायें तथा पुस्तक समींक्षा के साथ प्रस्तुत किया जा रहा है। आशा है पाठक इस अंक को बहुउपयोगी पायेंगे।

ए.के. यादव

संपादक

Dear Readers

Organic farming practices are gaining momentum since last few years and new packages and inputs are being launched to meet the requirements. Traditional technologies are also being evaluated to assess their potential. Current issue deals with one such innovative Homeopathic input and describes a study on effect of homa practices on pathogenic microorganisms. India's growing might in organic cotton and other fields of organic farming indicates growing potential of India-Organic sector in the world. Many State Governments have initiated specific efforts for its promotion. Latest developments in this direction are adoption of organic farming promotion policies by Govt of Madhya Pradesh and launching of Bihar Organic by Govt of Bihar with an astounding Rs 255 crores provision for next four years. The current issue gives a glimpse of such developments with details of issues under discussions in various seminars, conclaves and workshops. Detailed proceedings of a National Brainstorming Seminar-cum-workshop on organic farming organized under NPOF at CSKHPKV, Palampur and International Training programme on certification and standards, sponsored by DAC under NPOF and organized by APO, Japan and NPC India have also been highlighted with other standard columns of India organic news, Global organic, National and International Events and Book Reviews. I Hope readers will find it informative.

A.K. Yadav

Editor

Effect of Homa Farming practices on Agriculturally Important Microorganisms

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Introduction

Homa organic farming system is the application of "Agnihotra" and "Homa therapy" techniques in organic agriculture. It is a holistic healing for agriculture and can be used in conjunction with any good organic farming system. It is a process of purification of the atmosphere as a cumulative effect of various scientific principles harnessed to give rise to an unparalleled purifying and healing phenomenon. The process of agnihotra consists of making two offerings to the fire exactly at the time of sunrise & sunset along with the chanting of two small sanskrit mantras (Paranjpe, 1989) "Agnihotra" reduces pest problems and organic gardening and farming are made easier by using "Homa" techniques (http:// soundlighthealer.com /agnihotra.html). The aromatic substances during Yagna get diffused in the air and offer protection to plant life against harmful organisms (Sharma, 2001). Yajnya replenishes the nutrients that pollution robs from our environment. "Agnihotra" neutralizes pathogenic and parasitic bacteria. (http:// www. tapovan. Net/applications.htm). Positive results of Homa therapy have been reported from many places in India and abroad (Bhujbal, 198; Anonymous, 2007; Richa,2009; http://www.agnihotra. com.au/). "Agnihotra" effect on aerial micro flora was studied by Dr. Mondkar and it was observed that bacterial colonies of *Staphalbus, B-subtlis, Enterococci, E-coli, Staphpylococcus, K. pneumonae* grown before agnihotra showed a definite reduction in colony count in 30 to 60 minutes. There is a definite reduction in micro flora after performing agnihotra.

Dr. B. R. Gupta, Associate Professor, Microbiology, CSA University of Agriculture, Kanpur conducted experiments on effect of agnihotra on plate count of Aerial bacterial flora. He has found that in human residence where no agnihotra was performed the bacterial colony count was 123 as against in the human residence where agnihotra was done regularly the bacterial colony count was as low as a mere 25 (http:// www. altmedicenter. com/am/agnihotra_homa. asp?pageID=agnihotra_homa5. asp). Studies conducted at CSK HP Agricultural University Palampur on the effect of Homa on aerial microbial quality also revealed its positive effect on harmful microbes. Keeping in view of this, a study was conducted to observe the effect of homa environment on soil borne plant pathogens and certain isolates of *Trichoderma* species.

Material and Methods

Pure cultures of seven soil borne plant pathogens viz. *Fusarium solani, F. oxysporum, Rhizoctonia solani, Sclerotinia sclerotiorum, Sclerotium rolfsii, Phoma medicaginis* and *Alternaria* were developed by single spore isolation. 2mm discs of the cultures were cut with the help of cork borer and inoculated on freshly prepared potato dextrose agar plates. Three plates were inoculated for each treatment. The plates were then exposed for six hours in different homa

environments namely in agnihotra hut, in tryambcum hut and at 20 meters distance from the agnihotra hut. The plates kept at 500m distance from the hut (in non-homa environment) served as control. The plates were then incubated at 23±2°C for a week. The data with reference to the diameter of the growth of the pathogens was recorded. The per cent inhibition of the growth of the pathogens was recorded as follows-

$$\frac{D2-D1 \times 100}{D2}$$

Where D2 = Diameter of pathogen in control
D1 = Diameter of the same pathogen in homa environment

The mean values were calculated in each case by taking the average of three replications. The effect of homa ash on all the above mentioned soil borne plant pathogens as well as four locally isolated and effective strains of bioagent *Trichoderma* spp (*T. harzianum* T4 and T5; *T. koningii* T8 and T11) was also studied *in vitro*. The homa ash was incorporated @ 0.1 per cent in the medium. The medium without ash served as control. The culture discs (2 mm) of the pathogens and bioagents were inoculated on the center of the medium plates and incubated. The growth of all the microorganisms was recorded after 7 days. The per cent effect on growth of the pathogens and bioagents was calculated as above.

Results and Discussion

The data with respect to the effect of homa environment on the growth of pathogens has been presented in Table 1. A perusal of data indicates that all the pathogens were inhibited by the homa environment. The maximum inhibition range (29-42%) was recorded in agnihotra hut followed by tryambacum hut (8-32%) and homa environment (4-22%) respectively. Inhibition percentage of *Fusarium solani* was 31.7% when exposed to agnihotra hut but it was 18.75 and 18.33% in other exposures. Maximum inhibition percentage was recorded in case of *Rhizoctonia solani* and *Sclerotinia sclerotiorum* in agnihotra environment i.e. 42.66 and 41.12 % respectively. Sclerotium rolfsii showed minimum (19.4%) inhibition under the same environment. *Phoma medicaginis* and *Alternaria brassicae* were inhibited to the tune of 37.53 and 29.72 % respectively. In tryambacum environment maximum inhibition (32.39%) was recorded in case of *Sclerotinia sclerotiorum* and least (8.33%) in case of *Sclerotium rolfsii*. Under Homa environment *Rhizoctonia solani* resulted in only 4.22% inhibition while *Fusarium oxysporum* and *Phoma medicaginis* recorded 22.77 and 18.37% inhibition respectively.

Reduction in fungal population can be attributed either to fungicidal or fungistatic effect (Mondkar, 2011). The phenomenon could be explained by giving two reasons: (a) Agnihotra fumes are rich in formaldehyde and other substances which have inhibitory effect on microorganisms (b) A phenomenon like smog formation and its diffusion in the upper strata might be a likely postulation.
The data with respect to the effects on homa ash on the growth of soil borne pathogens and bioagents have been presented in Table 2. The data indicates that all the organisms were inhibited by the homa ash. The degree of inhibition of pathogens was 4.4-39.6% compared to bioagents (6.8-12.8%). Maximum inhibition was recorded in case of *Alternaria brassicae, Sclerotinia sclerotiorum, Phoma medicaginis* and *Fusarium solani* i.e. 39.6, 32.7, 30.9 and 17.1% respectively. Other pathogens showed only 4.4-6.8% inhibition. The bioagents showed in general least inhibition i.e. 6.8-12.8 %. *T. harzianum* and *T. koningi* showed 6.8-7.5% and 12.5-12.8% inhibition respectively.

Table 1. Effect of different environments on growth of Plant Pathogens

Environment/ Pathogen	Agnihotra hut		Tryambacum hut		Homa environment		Control
	Growth (mm)	Inhibition (%)	Growth (mm)	Inhibition (%)	Growth (mm)	Inhibition (%)	Growth (mm)
F.solani	16.4	31.7	19.6	18.33	19.5	18.75	24.00
R.solani	25.8	42.66	34.7	22.88	43.1	4.22	45.00
S.sclerotiorum	18.9	41.12	21.7	32.39	26.2	18.38	32.10
S.rolfsii	8.4	19.41	37.4	8.33	36.6	10.29	40.80
F.oxysporum	39.4	32.65	39.3	21.01	42.1	22.27	44.80
Phoma medicaginis	39.7	37.53	39.8	28.57	42.2	22.96	45.00
A brassicae	39.4	29.72	38.5	27.02	42.4	18.37	45.00
Inhibition range	29-42%		8-32%		4-22%		

Table 2. Effect of Homa ash on the growth of Plant Pathogens and Bioagents

Treatments	Growth (mm)	Control (mm)	% Inhibition
Sclerotinia sclerotiorum	23.8	35.4	32.7
Fusarium solani	26.0	31.4	17.1
Fusarium oxysporum	28.5	30.6	6.8
Sclerotium rolfsii	38.7	41.2	6.1
Rhizoctonia solani	43.0	45.0	4.4
Alternaria brassicae	21.8	36.1	39.6
Phoma medicaginis	23.0	33.3	30.9
Trichoderma harzianum (T4)	33.2	35.9	7.5
Trichoderma harzianum (T5)	31.5	33.8	6.8
Trichoderma koningii (T8)	33.3	38.2	12.8
Trichoderma koningii (T11)	34.9	39.9	12.5

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Success Story

Response of Organic Homeopathic Media (S_3/30) on Incidence of Softening and Quality Attributes of Mango cv Dashehari

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In recent years various homeopathic preparations, approved as organic inputs, have been found to be effective not only in nutrient management, but also in plant protection of various pests in different field crops and plantation crops. To study the effect of one such homeopathic media known as S_3/30 developed by Vishwa Manav Sewa Samiti was tested for its response on incidence of softening of tissues around stone in Dashehari Mango and its quality attributes. The study was undertaken by the Uttar Pradesh Council of Agricultural Research (UPCAR), Lucknow during the years 2006-07 and 2007-08. This article has been complied on the basis of report submitted by UPCAR to VIMASES.

Response of homeopathic media (S_3/30) on firmness, incidence of softening and quality attributes of mango cv. Dashehari (2006-2007)

The homeopathic media (S_3/30) with unknown composition (Produced by VIMASES) was sprayed in Dashehari mango tree (10 nos.) @ 125 ml (S_3/30 media) + 500 g jaggary twice at seven day interval (before one month of harvesting) and one spray of homeopathic media (S_3/30) @ 250 ml + 500 g jaggary once during first week of June. Water sprayed trees were taken as control. The fruits for observation were harvested two times after treatment. The first harvesting was done in second week of June and second in 3rd week of June. The physiological loss in weight (PLW), total soluble solids (TSS), firmness and softening of fruits were assessed in ripped fruits on 7, 9 and 12 days of storage.

The result presented in Table - 1 and 2 clearly indicate that the fruits taken from treated trees were found to be more firm (1.2 -1.8 kg cm^{-2}) than the control (0.9 kg cm^{-2}) on 7 day of storage. Softening incidence was negligible up to 7 day of storage in all the treatments including control. However, after 7 day of storage softening around stone appeared with maximum intensity (3-4 scale) in control as compared to both the treatments (1-2 scale), its incidence was intensified in the fruits observed on 12 day of storage. The ripening index of harvested fruit from T2 treatments, i.e., 250 ml S_3/30 + 500 jaggary was found to be best as indicated by highest YI (158.95), L (57.64), a (10.59) and b (47.0) values as compared to their minimum value in control (YI = 140.40, L = 30.41, a = 3.89, b = 38.03).

The fruits harvested during 3rd week of June from treated trees showed clear cut difference in physiological weight loss when compared to the control. Comparatively minimum weight loss was recorded in T2 followed by T1 and T0. There was not much difference in TSS on 0 day of sampling among the treatments, however the TSS increases slowly in T2 (14.0 – 21.5^{0}B) as compared to sharp rise in T0 (13.5 – 25.0^0 B). Treated fruits were also

found more firm than the control. Interestingly, no softening was observed on 7 day of storage in treated fruit as compared to 1 – 2 softening in control, whereas, on 9 day of storage the softening appeared around stone in both the treatment. Thus, these treatments appeared to have beneficial effect on fruit quality of Dashehari mango.

Response of homeopathic media (S_3/30) on incidence of Jelly seed and quality attributes of mango cv. Dashehari (2007-2008)

The homeopathic media (S_3/30) was again tested on Dashehari mango for the incidence of jelly seed. In contrast to two sprays during the previous year before 30 day of harvesting of fruits, during the year 2007-2008 seven treatments with three replications were used in the experiments. The dose i.e. 125 ml S_3/30 (homeopathic media) + 500 g jaggary and 250 ml S_3/30 (homeopathic media) + 500 g jaggary were used.

Water sprayed trees were taken as control. The fruits for the observation of incidence of jelly seed and other associated parameters were harvested twice after treatment. The first harvesting was done in third week of June and second harvesting of fruits was done in the first week of July as the maturity of fruits during this year was delayed for 10 – 15 days. The physiological weight loss, acidity (in term of pH), TSS, firmness, softening status, colour index of fruits were assessed in ripened fruits on 0, 7 and 9 days after storage.

Table. 1 - Response of S_3/30 (homeopathic medium) on incidence of softening of fruit and associated parameters in mango cv. Dashehari (second week of June)

Treatment per tree	Firmness (kg cm^{-2})				Softening status			
	0 day	7 day	9 day	12 day	0 day	7 day	9 day	12 day
T1	> 12	1.2	< 0.5	< 0.3	0	0	1 – 2	2 – 3
T2	> 12	1.8	< 0.9	< 0.3	0	0	1 – 2	2 – 3
T0	> 12	0.9	< 0.2	< 0.2	0	0 -1	3 – 4	4 – 5
CD (p = 0.05)	-	0.01	-	-	-	-	-	-

T1 = 125 ml + 500 g jaggary two time at one week interval (before one month of harvesting of fruits), T2 = 250 ml + 500 g jaggary one time (First week of June), T0 = Control

Table. 2 - Response of S_3/30 (homeopathic medium) on incidence of softening of fruit and associated parameters in mango cv. Dashehari (Third week of June)

Treatment per tree	PLW (%)		TSS (^{0} Brix)			Firmness (kg cm^{-2})			Softening Status
	7 day	9 day	0 day	7 day	9 day	0 day	7 day	9 day	
T1	12.23	15.87	13.0	23.0	22.0	> 10	0.75	0.35	2 – 3
T2	11.00	14.34	14.0	21.5	24.5	> 10	0.90	0.36	2 – 3
T0	13.20	17.25	13.5	25.0	23.0	> 10	0.45	0.18	4 – 5
CD (p = 0.05)	-	-	0.90	1.12	0.85		0.25	0.15	-

T1 = 125 ml + 500 g jaggary two time at one week interval (before one month of harvesting of fruits), T2 = 250 ml + 500 g jaggary one time (First week of June), T0 = Control

The results presented in Table 3 and 4 clearly revealed that there was significant improvement in PLW in treated fruits at 7 and 9 day of storage and minimum PLW (6.17%) was obtained with T1 treatment i.e. tree which was sprayed with 125 ml homeopathic media + 500 jaggary at maturity followed by T4 (6.57%) in comparison to maximum physiological weight loss in control. The acidity was marginally elevated in fruits obtained from treated trees (pH 4.08 – 4.63) as compared to control (pH 5.23). On 0 day of storage no significant change in TSS was observed among the treatments, however its lower level was recorded in most of the treatments with minimum level in T1 (14.2^0B) as compared to maximum TSS (17.0^0B) in control. Interestingly the data on firmness on 7 day of storage clearly showed that the fruits obtained from treated fruits were more firm than the control fruits. The maximum firmness (0.72 kg cm^{-2}) was obtained in T4 followed by T1 (0.65 kg cm^{-2}) in comparison to minimum in control (0.27 kg cm^{-2}), however on 9 day of storage there was no significant difference in the firmness of fruits among the treatments.

Table. 3 Response of S_3/30 (homeopathic medium) on incidence of softening of fruit and associated parameters in mango cv. Dashehari (third week of June)

Treatment per tree	Acidity (pH)		TSS (^{0} Brix)			Firmness (kg cm^{-2})		Softening Status	
	7 day	9 day	0 day	7 day	9 day	7 day	9 day	0 day	7 day
T1	4.63	4.66	6.5	14.2	17.2	0.65	0.35	0	0
T2	4.53	5.29	6.7	17.1	17.3	0.45	0.35	0	0
T3	4.08	5.77	7.0	15.1	15.3	0.50	0.35	0	0 – 1
T4	4.43	5.33	6.3	15.2	17.0	0.72	0.40	0	0
T5	4.58	4.22	6.6	16.1	17.3	0.50	0.45	0	0 – 1
T6	4.58	4.99	6.0	16.2	15.8	0.52	0.32	0	0 – 1
T0	5.23	5.49	7.0	17.0	17.5	0.27	0.30	0	1 – 2
CD (p = 0.05)	0.23	0.31	1.2	1.5	0.89	0.02	0.06	-	-

[T1= 125 ml + 500 g juggary sprayed one month before harvesting, T2= 250 ml + 500 g juggary at maturity stage, T3= 125 ml + 500 g juggary sprayed at marble and egg stage, T4= 250ml + 500 g juggary sprayed at marble and egg stage, T5= 125 ml + 500 g juggary sprayed at marble, egg and maturity stage, T6= 250 ml + 500 g juggary sprayed at marble, egg and maturity stage, T0= Water spray (Control)]

Table. 4 Response of S_3/30 (homeopathic medium) on incidence of softening of fruit and associated parameters in mango cv. Dashehari (1^{st} week of July)

Treatment per tree	As observed after storage in Days										
	Acidity (pH)			TSS (^{0} Brix)			Firmness (kg cm^{-2})			Softening Status	
	0	7	9	0	7	9	0	7	9	0	7
T1	3.78	5.10	5.24	8.5	17.8	18.2	5.6	0.37	0.32	0	0 – 1
T2	3.64	5.59	5.70	7.0	18.0	15.0	9.0	0.35	0.22	0	0 – 1
T3	3.57	5.01	5.66	6.5	15.8	16.8	8.3	0.40	0.27	0	0 – 1
T4	3.63	4.76	5.43	9.0	16.4	16.9	4.1	0.40	0.25	0	0 – 1
T5	3.75	5.61	4.99	6.0	17.0	17.5	8.5	0.45	0.35	0	0 – 1
T6	4.00	5.44	5.53	12.5	18.2	17.1	2.6	0.45	0.30	0	1 – 2
T0	4.11	6.00	5.74	14.2	15.9	16.7	1.6	0.37	0.27	0	2 – 3
CD (p = 0.05)	0.46	0.57	0.39	0.46	1.00	2.10	0.2	0.10	0.15		

As far as incidence of softening is concern during this year the incidence was comparatively less compared to the previous year. Softening incidence was negligible up to 7 day of storage in all the treatments including control. On the other hand, after 7 day of storage softening around stone appeared with maximum intensity (1 – 2 scale) in control as compared to minimum incidence in treated fruits (0 – 1 scale). The surface fruit colour was also analyzed (Table 5) with colour image analysis system and maximum value of L (57.00), a (8.39) and b (48.77) was recorded in control fruit (Table 5). These results clearly showed the significant role of S_3/30 on prolonging the senescence of mango fruit.

The fruits of all the treated trees were also harvested in late season i.e. 1st week of July. When compared with the PLW of fruits harvested during 3rd week of June, loss of weight was more on both the day of observation (7 and 9 day) after storage. The minimum PLW was recorded in T5 i.e. in 125 ml homeopathic media treatment sprayed at egg, marble and maturity state of fruit development followed by the fruits harvested from T4 i.e. 250 ml homeopathic media sprayed at marble and egg stage of fruit development. The PLW on 7 day of storage was in the range of 7.43 – 11.01%, whereas it was in the range of 10.12 to 13.58% on 9 days of storage. The fruits of treated trees were more acidic up to 7 day of storage with maximum acidity in T4 treatment (pH 4.76) as compared to minimum acidity in control (pH 6.0) at 7 day of storage, however significant difference in acidity was not recorded on 9 day after storage. Significant variation in TSS on the day of harvesting (0 day) was observed among the treatments and its minimum value was in T4 treatment, however on 7 and 9 day of storage the TSS was comparatively low in control fruits. Large difference in firmness among the treatment on 0 and 7 days of storage was recorded as indicated by the data on 0 day. The control fruit showed 1.6 kg cm^{-2} firmness whereas the treated fruit had firmness in the range of 2.6 – 9.0 kg cm^{-2}. On the other hand marginal difference on 7 day and non significant variation on 9 day was observed in the fruits harvested from different treatment as compared to the control fruits. In general the incidence of softening in fruit was less during this year of fruiting and no incidence was observed in the treated fruits whereas control fruits showed 1 – 2 scale of this disorder.

On 9 day after storage the fruits showed the symptoms of post harvest diseases with majority of Anthracnose and rotted later on. This data clearly indicated that the pre- harvest spray of homeopathic media had beneficial impact on the quality of Dashehari fruits and its shelf life could be prolonged with this treatment.

Table. 5 Response of S_3/30 (homeopathic medium) on chromacity value of mango fruits

Treatment S_3/30 (homeopathic media) per tree		**Chromacity Value**		
		L	**a**	**b**
T1	125 ml + 500 g jaggary one month before harvesting	48.41	3.85	25.92
T2	250 ml + 500 g jaggary at maturity stage	55.67	3.84	33.29
T3	125 ml + 500 g jaggary sprayed at marble and egg stage	52.05	4.41	29.79
T4	250 ml + 500 g jaggary sprayed at marble and egg stage	45.21	6.23	21.82
T5	125 ml + 500 g jaggary sprayed at marble, egg and maturity	53.47	4.72	30.70
T6	250 ml + 500 g jaggary sprayed at marble, egg and maturity	50.35	3.09	28.88
T0	Control (water spray)	57.00	8.39	48.77

India Organic News

Organic Cotton A Success Story in India - Organic cotton represents a small fraction of all cotton produced (just over 1 percent). However, unlike global production of conventional cotton, organic levels have continued to grow. 2,74000 farmers are growing organic cotton in 23 countries, producing 241,697 mt of organic lint (1.1 million US bales). This represents a growth rate of 15 percent on last years' production of 209,950 mt. South East Asia remains the highest producer Region; with over 80 percent of organic cotton produced in India. Among other countries, Syria moves from third to second place, and Turkey fell from second to third place. The remaining countries in descending order are: China, United States, Tanzania, Uganda, Peru, Egypt, Mali, Pakistan, Burkina Faso, Israel, Benin, Paraguay, Greece, Tajikistan, Senegal, Nicaragua, South Africa, Brazil, and Zambia.

The high growth can be attributed to factors such as: a strong agronomy, economies of scale and close links to a vast manufacturing base. However, it is clearly having knock-on effects for the rest of the world. It is observed that production in some parts of the world stagnate or even dip slightly, with producers in West Africa, Latin America and Turkey reported to finding it difficult to compete with prices coming out of India. Other major events affecting organic cotton production worldwide included contamination of organic cotton in Uganda by the spraying of chemicals to combat the disease, climatic stresses in China and Latin America, pest attacks in Turkey and Syria, and other crops receiving higher prices generally. The fact that many countries are still recovering from the impact of the global economic recession continued to effect market confidence and therefore investment in organic cotton production. What's interesting, and reassuring, is that although organic cotton production has reduced in a number of key organic cotton growing countries, the commitment to organic agriculture has remained high; with cotton being replaced by other organic crops (more lucrative at the time).

According to the *Organic Cotton Market Report 2009* released by Organic Exchange in May 2010, global sales of organic cotton apparel and home textile products reached an estimated $4.3 billion in 2009. This reflects a 35 percent increase from the $3.2 billion market recorded in 2008.

Since last three years India is occupying the top place in organic cotton production and is contributing to almost 81% of total world production. Organic cotton is predominantly being grown in states of Madhya Pradesh, Maharashtra, Orissa and Gujarat. In fiber quality majority of the produce belong to Medium & Long staple length. 236,701 small and marginal farmers belonging to 209 groups are producing organic cotton under direct supervision and internal control system management of either the fiber processors or Exporters. Some progressive farmer groups have also emerged in recent years with their independent sales network. As per the figures released by Organic Exchange, organic cotton is being grown in 369,923 ha (2009) with total seed cotton production of 592,973 mt (195,757 mt lint) packed into 898,523 bales.

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 Volume 35, Issue 1, 2011, Pages 48 – 68)

Changing scenario of organic farming in India: An overview - India produces a large variety of food crops including cereals, pulses and oilseeds. Diversified agriculture is the priority of the Central Government, and technical and financial support is being extended to farmers to encourage diversification especially in the areas of horticulture, floriculture, medicinal and aromatic plants, apiculture (bee-keeping) and sericulture. The Government is continuously working towards the development of agribusiness sector through considerable emphasis on infrastructure and food processing. However, there is still a scope for further development and up-gradation of technology and agri-infrastructure to attain world-class standards. The main emphasis is on quality enhancement, infrastructure development and the use of modern technology. Organic farming was practiced in India since thousands of years. The great Indian civilization thrived on organic farming and was one of the most prosperous countries in the world, till the British ruled it. Increasing pesticide residues in food materials, eutrophication of surface and ground-waters and increasing nitrous oxide emissions which are detrimental to the ozone layer of the atmosphere, drew attention towards the harmful effects of modern agriculture and environmentalists pressed hard for a more sustainable agriculture. The role of organic farming in Indian rural economy can be leveraged to mitigate the ever-increasing problem of food security in India. With rapid industrialization of rural states of India, there has been a crunch for farmland. Further, with the exponential population growth of India, the need for food sufficiency has become the need of the hour. Furthermore, the overuse of plant growth inhibitor, pesticides and fertilizers for faster growth of agricultural produce is detrimental to human health and the environment as a whole. An attempt is made to analyze the importance of organic farming, principle of organic farming, Organic farming in rural economy, consumption pattern and export of organically produced products in India. (Source - Chandrashekar 2010, International NGO Journal 5(1) : 34-39)

Status of Organic Farming and Research Experiences in Rice - India has tremendous potential to become a major exporter of organic rice in the international market. During 2008-09, around 5630 MT of organic basmati rice was exported from India through APEDA. Considering the importance of organic farming and to generate comprehensive scientific research data, field experiments were conducted for five years (2004-05 to 2009-10) covering ten crop seasons on a deep black clayey vertisol (Typic pellustert) at the Directorate of Rice Research farm, to compare organic and conventional farming systems with fine quality rice varieties. During the first two years, kharif grain yields in plots with inorganic fertilizers were superior to those with organics by 15-20%. However, during later years, grain yield improved in

organics plots to parity with those with inorganic. During rabi, plots with inorganic were superior in grain yield to those with organics for the first four years but both the systems were on par during the fifth year. Most of the grain quality parameters were not influenced though moderate improvement in nutritional quality (protein, phosphorus and potassium contents) was recorded with organics, especially in brown rice and polishing reduced the quality improvement. In general, there was no significant difference in the insect pests' incidence between the systems in most of the years with an exception in a few years where decreased pest incidence and increased parasitism was observed with organics compared to inorganic. Organic system significantly improved the soil quality and the sustainability index of the soil was maximum with organics (1.63) compared to inorganic (1.33) after four years of study. Benefit cost ratio was less with organics (by 26%) compared to inorganic in the first year which improved with organics over inorganic (by 22%) at the end of fourth year. (Source -K. Surekha et al 2010 Journal of Rice Research Vol.3 No 1 : 23-35).

Comparative economics of organic and inorganic farming - Investigation was undertaken to estimate cost and returns in organic and inorganic farming considering cotton, pigeon pea and mung in Kharif season and wheat in Rabi season. For these, total 100 samples were studied, out of which 50 were organic cultivators and 50 were inorganic cultivators. The gross income was observed higher in organic farming. Input-output ratios were higher in organic farming as compared to inorganic farming. They were 1.49 against 1.27 for cotton, 1.64 against 1.53, for pigeon pea, 1.54 against 1.38 for mung and 1.49 against 1.28 for wheat at cost 'C'. The major constraints observed were lack of awareness, high input cost, low yield, certification from Government and poor market linkage (Source – Tripathi et al 2010 Agriculture Update, 2010 Vol. 5 Issue 3 & 4 397-399).

Ponneem A new botanical pesticide for organic farming - Ponneem is an organic based pesticide developed by the Department of Entomology, Loyola College, Chennai. Its benefits are reaped by the farmers at Kanchipuram and Thiruvallur. The entire village of Kolumanivakkam, Kanchipuram district is using Ponneem bio pesticide for pest management. The college gave Mrs.Uma Maheswari farm leader, self help group, TANUWA free samples of Ponneem. But she did not have trust. However when her paddy plants were two months old, it got affected by white hopper and shoot borer. She tried with Ponneem and miracle happened. All the pests vanished and she got higher yield. Also she came to know of the beneficial insects from the college students and officials. Ravi of Vayalanallor village, Tiruvallur also tried it in his farm consisting of 1 acre brinjal, 1 acre Bhendi and 2 cents chili. The result was visible in 15 days. Almost all the pests were controlled and the field looked fresh. The professor and Head, Department of Entomology Loyola College, Chennai Mr. Inasimuthu, says that, this product was a result of hard work on trials with various combinations of 8 oils including neem oil, pungam oil, elupai oil and cashew oil. They tested it in the farms and submitted the results to the Government, who on being satisfied gave the needed financial support. The farmers are also satisfied with its results hence there is more demand for the product. Presently, it is given free of cost and arrangements are being made to supply it to all farmers of Tamil Nadu with the Government help. It has also been submitted for patent. The advantage of Ponneem is that it not only kills harmful insects but also improves the population of beneficial insects. To prepare Ponneem, mix 45% of neem oil, pungam oil and 10% of soap solution (wetting agent). Mix 30ml of Ponneem with

10 liters of water and spray. The requirement for 1 acre is 1½ liters of ponneem, it can be reduced based on pest attack. It should be sprayed either in the morning or evening as the pest movement is high at this time. (Source - http://agritech.tnau.ac.in/success_storie)

Government of Bihar launches "Organic Bihar Project" – The State Government of Bihar has launched Organic Bihar Project and has allocated a sum of Rs. 2550 million for next five years. It tends to promote vermin-compost on large scale. It has been made demand based and farmers are promoted to set up units for vermicompost production. Biofertilizers, green manuring and biogas with or without human excreta is also promoted. The practice of integrated nutrient management and integrated pest management is promoted with additional support to farmers for bio and organic inputs. Organic certification has been taken up with the help of certifying agencies. It is also planned to have a local certifying agency so that the benefits of certification could reach out to the small and marginal farmers. One village in every district has been identified as organic village. It has yielded laudable success. The success is proposed to be replicated on a large scale. Sohdih village in Nalanda District found a place on the global map for organic potato production. Similarly litchi is being grown under organic certification in Muzaffarpur District through NAFED. Suitable agencies are being identified for certification of crops in other districts. Important crops identified for organic certification are: vegetables and fruits including potato, cauliflower, tomato, cabbage, peas, lady finger, carrot, litchi, guava and mango. It is expected that some unique organically produced commodities like jute, litchi, cosmetic raw materials viz: herbal and aromatic plants and makhana from Bihar will soon be ready for export to different world markets. The scope for other promising crops from Bihar include, Zardalu, an improved mango variety, Katarni rice from Bhagalpur and Shahi/ China litchi varieties from Muzaffarpur. To make the Bihar organic products unique Government of Bihar has also launched Bihar Brand of Organic Products "JAI B".

Launching of Certificate course in Organic Farming – Recently a one year Certificate course on Organic Farming was launched by Sheth Faramji Cavasji Contractor Community College (SFCCCC), in collaboration with Gujarat Life Sciences & Science Ashram, Vadodara under Indira Gandhi National Open University. This unique course shall be of one year duration with two semesters. First semester shall be on Organic farming covering aspects such as Introduction to Organic Farming, Organic Production System, Inspection and Certification of Organic Produce and Economics and Marketing of Organic Produce. Second semester shall be on water harvesting and water management. Inaugurating the launch of the course Dr. A.K. Yadav, Director, National Centre for Organic Farming elaborated the importance of Organic Farming in India as well as globally. He stressed that over a period of time organic farming can provide viable solutions to sustainability. On this occasion Padmashree Dr. Muni Mehta, Former Vice Chancellor and Founder Director GLS and Ashram spoke about the need for organic farming & job opportunities after completing the course in organic farming. The meet concluded by distribution of books on pioneer American Organic Farmer George Washington to the students by Dr. Jaimini of Science Ashram. Mr. Nikitin Contractor Director SFCCCC introduced the curriculum of the course in the meet & also proposed a vote of thanks.

Global Organic

Organic agriculture promotes evenness and natural pest control - Human activity can degrade ecosystem function by reducing species number (richness) and by skewing the relative abundance of species (evenness). Conservation efforts often focus on restoring or maintaining species number, reflecting the well-known impacts of richness on many ecological processes. In contrast, the ecological effects of disrupted evenness have received far less attention, and developing strategies for restoring evenness remains a conceptual challenge. In farmlands, agricultural pest-management practices often lead to altered food web structure and communities dominated by a few common species, which together contribute to pest outbreaks, Here it is clarified that organic farming methods mitigate this ecological damage by promoting evenness among natural enemies. In field enclosures, very even communities of predator and pathogen biological control agents, typical of organic farms, exerted the strongest pest control and yielded the largest plants. In contrast, pest densities were high and plant biomass was low when enemy evenness was disrupted, as is typical under conventional management. Results were independent of the numerically dominant predator or pathogen species, and so resulted from evenness itself. Moreover, evenness effects among natural enemy groups were independent and complementary. Results obtained strengthen the argument that rejuvenation of ecosystem function requires restoration of species evenness, rather than just richness. Organic farming potentially offers a means of returning functional evenness to ecosystems. (Source - Crowder et al 2010 Nature Volume: 466, Pages: 109–112)

Environmental Impact of Different Agricultural Management Practices: Conventional vs. Organic Agriculture - Organic agriculture refers to a farming system that enhance soil fertility through maximizing the efficient use of local resources, while foregoing the use of agrochemicals, the use of Genetic Modified Organisms (GMO), as well as that of many synthetic compounds used as food additives. Organic agriculture relies on a number of farming practices based on ecological cycles, and aims at minimizing the environmental impact of the food industry, preserving the long term sustainability of soil and reducing to a minimum the use of non renewable resources. This paper carries out a comparative review of the environmental performances of organic agriculture versus conventional farming, and also discusses the difficulties inherent in this comparison process. The paper first provides an historical background on organic agriculture and briefly reports on some key socioeconomic issues concerning organic farming. It then focuses on how agricultural practices affect soil characteristics: under organic management soil loss is greatly reduced and soil organic matter (SOM) content increases. Soil biochemical and ecological characteristics appear also improved. Furthermore, organically managed soils have a much higher water holding capacity than conventionally managed soils, resulting in much larger yields compared to conventional farming, under conditions of water scarcity. Because of its higher ability to store carbon in the soil, organic agriculture could represent a means to improve CO_2 abatement if adopted on a large scale. Next, the impact on biodiversity is highlighted: organic farming systems generally harbor a larger floral and faunal biodiversity than conventional

systems, although when properly managed also the latter can improve biodiversity. Importantly, the landscape surrounding farmed land also appears to have the potential to enhance biodiversity in agricultural areas. The paper then outlines energy use in different agricultural settings: organic agriculture has higher energy efficiency (input/output) but, on average, exhibits lower yields and hence reduced productivity. Nevertheless, overall, organic agriculture appears to perform better than conventional farming, and provides also other important environmental advantages, such as halting the use of harmful chemicals and their spread in the environment and along the trophic chain, and reducing water use. Looking at the future of organic farming, based on the findings presented in this review, there is clearly a need for more research and investment directed to exploring potential of organic farming for reducing the environmental impact of agricultural practices; however, the implications of reduced productivity for the socioeconomic system should also be considered and suitable agricultural policies should be developed. (Source – Gomiero et al Critical Reviews in Plant Sciences Volume 30, Issue 1 & 2, 2011, Pages 95 – 124)

Efficient soil microorganisms: A new dimension for sustainable agriculture and environmental development - Sustainable agriculture is vital in today's world as it offers the potential to meet our agricultural needs, something that conventional agriculture fails to do. This type of agriculture uses a special farming technique wherein the environmental resources can be fully utilized and at the same time ensuring that no harm was done to it. Thus the technique is environment friendly and ensures safe and healthy agricultural products. Microbial populations are instrumental to fundamental processes that drive stability and productivity of agro-ecosystems. Several investigations addressed at improving understanding of the diversity, dynamics and importance of soil microbial communities and their beneficial and co-operative roles in agricultural productivity. However, in this review authors describe only the contributions of plant growth promoting rhizobacteria (PGPR) and cyanobacteria in safe and sustainable agriculture development. (Source **-** Jay Shankar Singh et al Agriculture, Ecosystems & Environment 2011 Volume 140, Issues 3-4, Pages 339-353)

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 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 anti-oxidant 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. It is further proposes improvements of organic production to achieve sustainable food production for humans in the near future. (Source - Denis Lairon Sustainable Agriculture Volume 2 2011, Part 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. Organic agriculture is developing rapidly and the organic land area is increased by almost 1.8 million hectares compared to the consolidated data from 2005. Worldwide, in 2006, over 30.4 million hectares were managed organically by more than 700000 farms, constituting 0.65 percent of the agricultural land of the countries surveyed. Recognizing the ecological principles, self-regulating ability and system stability, agro-biodiversity, climate change and global warming, soil nutrients and soil biology, erosion, nonchemical 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 – Ghorbani et al Sustainable Agriculture Reviews, 2010, Volume 3, 77-107)

Conversion to Organic Farming: A Multidimensional Research Object at the Crossroads of Agricultural and Social Sciences – A Review - Literature on the conversion to organic farming is scattered. However, both the conversion of farmers to organic farming and of consumers to organic food are the driving forces for the development of the organic sector. In this review, authors combine agricultural and social scientists' viewpoints for a critical appraisal of literature on conversion to organic food and farming. First, a brief historical retrospective enables us to refer the scientific production to the institutional and economic context over the past decades. Secondly, it review the methods used to

analyze conversion in agricultural and social sciences, and show that emphasis is most often laid upon the effects of conversion and the motivations to convert, on the basis of comparative approaches with so-called conventional agriculture. Therefore, the literature minimizes the importance of transitional aspects and trajectories, and rarely approaches conversion as a longer process than its legal duration and from a wider point of view. Thirdly, it also examined the paradigms of input efficiency and system redesign, which frame discussions about transitions in agriculture, beyond organics, and therefore helps shed light on sustainability issues. Authors suggest that analyzing conversion and more generally transitions in agriculture as multidimensional issues, involving both production and social practices, entails interdisciplinary approaches and the redefinition of some central research topics. (Source - Stéphane Bellon and Claire Lamine 2009 Sustainable Agriculture Part 6, 653-672)

Japan Government to issue origin certificate for all farm products for export - The Japan Government decided to issue certificates to identify producing districts for all Japanese farm products shipped overseas to allay overseas concern on their safety following radiation leaks at the Fukushima Daiichi nuclear plant, Government officials said. The plan was endorsed at a meeting of senior vice ministers of relevant Government ministries and agencies at a time when a growing number of overseas consumers are distancing themselves from Japanese farm products due to the nuclear crisis at the Fukushima plant. Various countries are also moving to restrict imports of agricultural products from Japan. The European Union has been calling on Japan to issue such certificates of origin for its agricultural products. The senior vice ministers also agreed on a plan to convey accurate information to foreign Governments via Japanese embassies and other diplomatic missions to keep foreign consumers from demonstrating excessive reactions to the situation. Although the nuclear crisis' effects on sales of Japan's manufactured products have been limited, the Government is preparing to issue certificates of origin for those products in cooperation with the chambers of commerce and industry nationwide.

Global degradation of soil and water worse than the Fukushima catastrophe? - Risks borne by society in general are often not considered in economic decision processes. Profit maximization is given greatest precedence, while resources and the natural and social systems are overly burdened. The recent Fukushima-catastrophe in Japan and the explosion of the oil platform in 2010 are symptomatic of this trend. However, though the "super catastrophes" generate much media attention, there are also slow-burn catastrophes resulting from gradual changes that eventually reach a point where they become a question of survival for humanity. Such irresponsible activities occurring over a long period can also lead to a lingering, but just as enduring destruction of the basis of life. The dwindling area of fertile farmland is particularly a dramatic example of the global loss of natural resources. Not only are the rainforests disappearing, but also arable land is diminishing alarmingly fast. A study by the global Food and Agriculture Organization (FAO) shows that in 1961 there was 4307 m^2 of arable land available per person which declined to just 2137 m^2 in 2007. The growth of the global population and the continued loss of soil through erosion and other factors are driving this downward trend still further. Like soil, water is of utmost importance to humanity. Non-renewable fossil groundwater is being used up, fresh water reserves are diminishing and water

resources all over the planet are becoming more and more polluted. Demand for water, especially from industry and food production, remains extremely high. The International Conference on Sustainable Business and Consumption (SusCon) organizers believe a fundamental change of attitude, which only can be triggered by state, economy and consumers working together, is urgently needed and calls for discussions on the subject of primacy of ethics in daily economic life full prominence, with the particular aim of developing concrete recommendations and solutions. The 3rd SusCon – International Conference on Sustainable Business and Consumption – will take place in Nuremberg, Germany, from 28 to 29 June 2011. It will present best business practices that can solve problems with a holistic approach. In addition, innovative technologies, such as drinking water treatment, recovery of phosphate and the revitalization of leached soils, will be presented.

Long Term Organic Farming Research at University of Hawaii - In 1993, a long-term organic farming research project was established at a 1 ha plot on a University of Hawaii Experiment Station in Waimanalo, Hawaii (22ºN 168ºW). The Waimanalo Station is at 30 m elevation, has a mean annual temperature of 24.6ºC, with a monthly range from 22-27ºC. Mean annual rainfall at the site is 1380 mm with an annual range of 500-1800 mm. This field had been fallow with a grassy cover for about 15 years prior to experiment initiation. The soil type of the station is a vertic haplustoll, derived from lava and coral. Initial soil fertility was pH of 6.5-7.0, organic matter content= 1.3-1.8, and in ppm, P=65-490; K=300- 520; Ca= 4000-7100, and Mg= 1300-1500. The entire plot was divided into 3 sections to conduct the following trials: 1) A replicated section with 4 treatments and 4 blocks per treatment to evaluate the effect of long-term compost and synthetic fertilizer applications on the soil quality and biomass productivity of a host of vegetables (including lettuce, basil, zucchini, & Filipino spinach); 2) A demonstration section for growing a host of vegetables year-round to showcase a variety of organic farming techniques such as rotations, intercropping, organic mulches, etc; and 3) A demonstration section to demonstrate the use of cover crops in an organic farming management program. Research on the replicated plots over 5 years showed total biomass productivity (dry matter) of 35.2 MT/ha for the controls, 48.0 MT/ha for plots receiving synthetic fertilizer alone, about 45 MT/ha for compost treatments alone, and a range of 49-51 MT/ha for plots receiving a combination of composts plus synthetic N. The results indicate that to grow vegetables commercially acceptable yields can be obtained with modest (10 MT/ha/crop) compost applications alone but greatest yields are obtained with supplemental N applied during particular crop growth stages. Additional data is available from this work concerning the effect of compost treatments on nematode levels and soil quality. In the demonstration plots, a large database was developed concerning the production and adaptability of growing about 50 vegetables and 40 cover crop species at low elevations in a sub-tropical climate, during the different parts of the year and under organic farming conditions.

First organic academic education in the Philippines - The Organic Certification Center of the Philippines has officially released the Organic Certificate of Benguet State University (BSU), making it the first organic academic institution in the country. BSU has undertaken steps in the area of research into instruction, extension and production as a pro-organic state university. Under the BSU Organic Agriculture program, organic agriculture is now open as a major in the degree program Bachelor of Science in Agriculture (BSA). Likewise the

Certification in Practical Organic Agriculture is offered alongside the Master of Science in Agroecology with specialization in Organic Agriculture in partnership with the International Crops Research Institute (ICRISAT) based in India. (Source - BioFach Newsletter" newsletter@biofach.de)

UNCTAD Policy Brief makes Organic Agriculture a priority for LDCs - UNCTAD, the United Nations Conference on Trade and Development published an official policy brief for the 4th UN Conference on Least Developed Countries (LDCs) held in Turkey (9th to 13th May 2011). The policy brief underlines the importance of sustainable agriculture in addressing hunger and poverty and calls for an urgent need for a fundamental shift in national and donor policies. The brief uses the IFOAM definition of organic agriculture and emphasizes the impressive productivity improvements that can be achieved in Africa with organic agriculture. UNCTAD in conjunction with UNEP also released a short film 'Organic Agriculture: A Good Option for LDCs' at the Conference, which features IFOAM World Board member Moses Muwanga from Uganda. (Source – www.ifoam.org)

IFOAM presents the *Global Organic Mark* – The *Organic Guarantee System (OGS)* reform of the worldwide Organic Movement has been decided a few months ago by the IFOAM's global membership with 93% yes votes. Now, IFOAM takes the lead in coordinating the diversity of organic standards. The so called Family of Standards provides a list of both private organic standards and Governments. Organic regulations that the Organic Movement accepts as being truly organic, based on IFOAM.'s Standards Requirements. Through the 'Family the movement draws a clear line between organic and not organic. In the future, consumers will recognize the *Global Organic Mark* on organic products. The new *Organic Guarantee System* contains even more services: An off the shelf organic Certification standard (the IFOAM Standard) facilitates standard development. Accreditations of Certification bodies help the clients in their operations and help them achieve public recognition of their credibility. Last but not the least; the OGS recognizes standard leaders that are Spearheading the development of especially advanced organic practices. (Source - www.ifoam,org)

Ukrainian Parliament adopts law on organic production - After more than seven years of preparation, the Ukrainian Parliament (Verkhovna Rada) adopted the law on organic production (Registered No.7003) on April 21, 2011. Ukraine is the biggest country of Eastern Europe with a population of 46 million people and deep fertile black soils, and has been well-known as the "grain basket for Europe" for ages. The new law on organic production guarantees rational use of soil, healthcare and protection of the environment, as it gives impetus to the organic production in Ukraine, arranges favourable conditions for production and consumption of organic produce, and forms a comprehensive system of organic sector development in Ukraine. The law sets the principles of the governmental policy and the fundamentals of organic production; determines the authorities of administration bodies; fixes the general requirements for production, processing and sale of organic produce. The law will inure on 01 January 2012. Certification of Ukrainian organic farms in accordance with EU Regulations was initiated and started in the late 1990s by Dutch, German and other European organic traders. Organic area has been increased constantly since then and amounted to 270,226 hectares in 2010, according to the Organic Federation of Ukraine**.** (Organic-Market. Info, Online Magazine)

National and International Events

A proceeding of the 'National Symposium -cum- Brainstorming Workshop on Organic Agriculture' - A two days 'National symposium-cum-Brainstorming workshop on Organic Agriculture' **was** organized at CSK Himachal Pradesh Krishi Vishvavidyalaya, Palampur during April, 19-20, 2011. The symposium was jointly organized by National Centre of Organic Farming Ghaziabad, CSKHPKV Palampur and Department of Agriculture, Himachal Pradesh. Organic Agricultural Society of India, Palampur also joined hand as local organizer of the event. About 250 stakeholders of Organic Agriculture comprising of farmers, traders, administrators, policy makers students, scientists from more than 15 states of the country participated in the symposium. The entire programme was conducted in Hindi. The technical deliberations were spread over four technical sessions in which the lead speakers presented their experiences and research findings. Special discussion on Policy Draft on Organic Farming in Himachal Pradesh and a Brainstorming session was also conducted to work out the policy issues, strategies for implementation of the emerging issues in organic farming, ways and means to convert new threats like problems of stray animals into opportunities etc. Two poster sessions were also planned in which the scientists from different parts of the country displayed their research findings on organic agriculture. Besides an exhibition on different aspects of organic agriculture viz. biopesticides, bio nutrient sources, post harvest management of organic produce, important natural organic products available in different parts of the country, improved agricultural implements and hand tools, environmental protection through GIS system was also arranged which was a point of attraction for the participants. During early morning hours of the second day of workshop a field visit to model organic farm of CSKHPKV, Palampur was conducted where modern organic production techniques were demonstrated.

The symposium was inaugurated by the Chief Guest Dr Tej Partap, Vice Chancellor, Shere Kashmir University of Agricultural Sciences and Technology Kashmir. Dr SK Sharma, Vice Chancellor, CSKHPKV, Palampur presided over the function. Dr AK Yadav, Director, NCOF and Dr JC Rana, Director Agriculture, Govt of HP were the guests of honour. On the occasion a logo of 'Himachal Organic' was released and webpage of organic Agricultural Society of India was launched. Several publications on the subject of Organic Agriculture written by the scientists of CSKHPKV, Palampur including 'Souvenir and Abstracts' of the symposium were also released during the inaugural session. The Chief Guest also delivered a key note address on the topic 'A Strategy for Promoting Organic Farming in Himachal Pradesh'. Dr C Devakumar, ADG (EP&D), ICAR also joined the symposium, visited the organic farm and appreciated ongoing activities including the conduct of the symposium.

During the technical sessions amongst the several speakers, Drs A.K. Yadav, O.P. Rupela, R.K. Pathak prominently presented talks on 'Restoring soil health, fertility and sustainability in Indian Agricultural Soils', '*A*ddressing the Twin Challenge of Climate Change and High Cost of Production through following Science-based Organic Farming' and 'Homa Jaivik Krishi: A ray of hope for sustainable horticulture – MARDI's initiatives respectively'. Thought provoking

subjects were discussed in detail during the interaction in which the farmers, scientists and administrators rigorously interacted. During the two poster sessions 161 posters were presented by scientists on different themes namely organic production techniques, organic inputs, homa and biodynamic farming, post harvest handling and processing of organic produce and other related aspects. During the plenary session of the symposium Sh Ram Subhag Singh, Secretary Agriculture, Govt of Himachal Pradesh made a special appearance and highlighted the programmes being implemented in Agriculture with specific reference to organic farming in Himachal Pradesh. He also emphasized upon the major role of organic farming in enhancing the livelihood opportunities of the small and marginal farmers of Himachal Pradesh. He actively interacted with the farmers to have feedback on various agricultural development programmes from the participating farmers of the state. The plenary session was chaired by Dr S.K. Sharma, Hon'ble Vice Chancellor, CSKHPKV Palampur. Following recommendations emerged out of the plenary lectures delivered by eminent scientists on Organic Agriculture in the four technical sessions, a group discussion on draft policy on Organic Agriculture, brainstorming session and the two poster sessions during the two days of the symposium:

- Funding of organic research and development projects is inadequate and very meager. This need strengthening at state and national level.
- The problem/threat of stray animals could be converted into an opportunity by utilizing them for compost and organic input production units through *Go-sadans.*
- Promotion of Organic-Agro-Tourism is vital for organic movement in the country, wherein the tourists are served organic, safe and quality food.
- Concerted efforts are required for development of cost effective and sustainable package of practices by promoting local inputs along with effective biopesticides.
- *In-situ* production of biomass through nitrogen fixing trees, leguminous and green manure crops and use of weeds as biomass source and recycling of crop residues for improvement of soil health.
- Development of biological sprays for crop production/protection needs strengthening.
- Need of farmers' participation in future research programmes and generation of technologies based on the local resources that empower the farmers.
- Strengthening of research under rainfed and dry organic farming conditions
- More validation studies are required for *Homa Jaivik Krishi* and Biodynamic farming
- Through organic farming, opportunity for carbon trading should be explored.
- To make organic production techniques cheap, cost effective and sustainable, provision of subsidies on inputs is felt to be important.
- Capacity building for bio-pest control measures, development of package of practices for organic production particularly under protected conditions.
- Emphasis on value addition of organic vegetables and fruits for facilitation of market.
- Hand-in-hand movement of organic stakeholders (farmers, traders, consumers, policy planners) essential for safe food and quality environment for posterity is essential.

APO Workshop on Development of Standards and Certification System for Organic Agriculture Products - Asian Productivity Organization (APO), Tokyo, Japan promoted Workshop on Development of Standards and Certification System for Organic Agriculture Products was organized by National Productivity Council (NPC), under support from National Centre of Organic Farming, Department of Agriculture & Cooperation, Ministry of Agriculture, Govt. of India during 16-20May, 2011 at New Delhi. The outlined objectives of the workshop were to review the current trends in standard setting and certification processes for organic agrifood production and processing besides familiarizing participants with good practices of standard setting, inspection and certification and formulate action plans for harmonizing and enhancing organic standards and certification system in Asian Countries. The workshop included expert presentations, country presentations, group discussions and field visit to the progressive farmer practicing organic agriculture. The workshop was attended by 20 participants from 11 Asian countries including Bangladesh, Republic of China, India, Indonesia, Republic of Korea, Nepal, Pakistan, Philippines, Sri Lanka, Thailand and Vietnam. The workshop has dissertations from very learned and experienced international and national resource persons who are on the helm of affair in their respective fields as far as the Standard and Certification System for Organic Agricultural Products is concerned.

Mr. Gerald A. Herrmann, one of the senior resource speaker from Munich, Germany discussed about IFOAM family of standards, which contains all the standards officially endorsed as organic by organic movement, based on their equivalence with the common objectives and requirements of organic standards. These include both private standards and Government regulations. He also informed the participants that in near future IFOAM will lobby Governments to recognize the IFOAM family of standards as framework for approving equivalent standards and built the family also that it becomes the comprehensive list of all organic standards and regulations. He also discussed in detail the issue of harmonization of standards and regulations.

Professor Shih-Shiung Chen, resource person from Ming Dao University, Taiwan in his presentation discussed on salient achievements, key issues, challenges and way forward for developing organic standards and certification system in the East/Southwest Asia. Some of the challenges for developing standards and certification system pointed out by him include small size farms, poor technology, lack of reliable certification bodies and qualified inspectors. Some of the action areas suggested by him point towards development of a Regional Action Plan for East/Southeast Asia for implementation, building up of local organic leaders' capacity besides development of the value chain for key products from farm to retail. He also quoted certain examples for pest control without use of chemical pesticides from his experience as organic farmer.

While presenting his view on importance of organic system of cultivation management, Dr. A.K. Yadav, Director, National Centre of Organic Farming, Ghaziabad; as resource person explained in detail the concept behind organic certification, its intent and requirements in respect of organic production standards. He also elucidated in details the purpose of certification, certification process and requirements for labeling of a product as "organic". Internationally acclaimed organic quality assurance system which is in place in India for export, import and domestic markets along with the regulatory mechanism defined under National Programme on Organic

Production (NPOP) was pioneered by India. He also dealt in detail the alternative certification system such as Participatory Guarantee System (PGS) which was developed in Brazil and has been modified and adapted as institutional system to suit the requirement of Indian farmers. The PGS gives high priority to development of domestic market for organic products and at the same time is cost effective as the certification cost to farmers in this system is quite low. His presentation also covered concepts of organic processing and standards specified under NPOP for manufacturing of organic products besides requirement for inspection and certification at all stages of handling of these products. The general provision for labeling and claims of a product in-conversion to organic were also discussed during the presentation.

There was a general consensus among the participants that the initial standards may be developed with the local market development in mind. They can be reasonably accessible, not too demanding, relatively easy to apply by producers, and easy to verify by the certification bodies. If the National standards are supposed to also apply for imports, then these should necessarily refer the Codex and IFOAM standards as a basis for import acceptance.

During Group Discussion session, participants discussed issues involved in development of organic farming, processing and manufacturing and role expected from the Government, strategies for motivating consumers to buy organic products and tools for harmonization of organic standards / regulations for facilitating regional trade of organic products.

The participants were presented with appreciation certificate from APO for successful participation in the programme. (Report by Manoj Saxena, NPC, India)

International Conference on Organic Bihar and Launching of Bihar Brand JAI B – The State Government of Bihar invites the entire organic fraternity from the globe to participate in the three days "International Conference on Organic Bihar 2011 scheduled for 22-24 June 2011 at Maurya Hotel, Fraser Road, Patna, Bihar. Various experts from national and international organizations are expected to attend the conference besides progressive farmers and State Government officials. An exhibition is also proposed for showcasing of technologies related to organic farming, organic produce, supply of inputs and certification processes etc. It is hoped that conference would benefit the farmers, policy makers, scientists and extension workers for development of a road map for organic farming in Bihar. To give a definite direction to the efforts of State Government and to bring all stakeholders, including exporters, certification agencies, experts from international and national organizations on one platform this conference is being projected as first serious effort. The event is being jointly organized by Department of Agriculture, Government of Bihar in association with ICAR-RCER, Patna. (Conference Brochure)

National Conference on Medicinal Plants - In order to strengthen the intersectoral co-operation between various stakeholders in the field of Herbal and Medicinal plants, The Department of AYUSH, Ministry of Health and Family Welfare, Government of India organized a National conference on Medicinal Plants during 5th to 7th May, 2011 at Hyderabad. The conference was coordinated by Chief Executive Officer National Medicinal Plant Board (NMPB) and Andhra Pradesh Medicinal & Aromatic plant Board. The conference deliberated on various issues concerning to formulation and implementation of Annual Action Plan 2011-12 for Scheme of National Mission of Medicinal Plants, identification of state

specific species of medicinal plants for cultivation, better tie ups between quality producers of the medicinal plants and manufacturers of AYUSH products, sharing of processing and marketing infrastructure created by the National Horticultural Mission, formation of clusters and introduction of organic methods of cultivation in medicinal plants with proper certification system. In collaboration with Quality Council of India NMPB has also launched best collection practices. Dr A.K. Yadav, Director, NCOF was the key speaker on organic certification issues and elaborated national and international organic certification systems for cultivation and wild harvest collection.

"Organic Food and Taste Festival" at Akola, Maharashtra – Deshonnati group of Newspapers and ECOCERT India have jointly organized a three days first of its kind festival in the country – Organic Food and Taste Festival at Akola Maharashtra during 26-28 May 2011. This three days event provided an opportunity to the residents of Akola city and nearby cities in the Vidarbha region of Maharashtra a rare opportunity to buy organic commodities in bulk directly from the organic farmers. The objectives of the festival were : (a) Popularizing the consumption of certified organic food by making it available at reasonable prices, (b) To promote the adoption of healthy lifestyle, (c) To promote the locavorism – the local food movement, (d) To promote the traditional cuisines which require the diverse food commodities to be grown and thus preserving the agro-biodiversity, (e) To encourage creation of assured local markets and (f) To promote affordable certification programs meant for small and disadvantaged farmers.

Workshop-cum-Seminar on "Innovation in Agriculture in food production for Livelihood Security" - Department of Science and Technology (DST) organized a two days workshop on "Innovation in Agriculture in food production for Livelihood Security" in collaboration of Amity Institute of Bio-Organic Research & Studies, Amity University, Noida during 12-13th May 2011.The event was jointly inaugurated by Smt Vinita Sharma, Advisor DST and Dr Ashok Chauhan, Founder President Amity University. Dr. P. Bhattacharyya, Director AIBORS was the organizing Secretary. The seminar was attended not only by eminent scientists and teachers from various ICAR and CSIR institutions, Central /State Agriculture Departments but also by large number of practicing organic farmers from Uttar Pradesh and Haryana. Environment friendly technologies including organic farming approaches and various organic and biological inputs were major subjects of discussions. Prominent speakers deliberated during the seminar-cum-workshop includes Dr G.K. Chaudhary, Director, (Wheat), DAC, Dr. A.K. Yadav, Director, NCOF, Dr BS Dwivedi and Dr J.P. Sharma from IARI, Dr Vinita Sharma from DST and Dr P. Bhattacharya from AIBROS. Among prominent progressive farmers, who shared their experiences were Shri Bharat Bhushan Tyagi of Village Behata, UP and Shri H.S. Grewal of Sirsa, Haryana.

Conclave on Value Chains in Organics, 29-30 April 2011 at Dehradun – A two days conclave on "Value Chains in Organics" was organized by Uttarakhand Organic Commodity Board, Dehradun during 29-30 April 2011. The conclave was supported by GIZ India and Ajeevika (an IFAD supported organization). Since last seven years organic farming has grown rapidly in Uttarakhand State and the state now produces more than 20,000 tons of different commodities in the form of cereals, pulses, perishable and spices. In spite of being producing adequate quantities, in most cases processing is being done outside the state. Although a number of small initiatives have been initiated which includes; fruit processing,

(brown sugar and jaggery, herbs, cereal flour, breakfast cereals, oils, Tofu, sun dried fruits) body care (soaps, shampoos) etc but they all need to be scaled up and their numbers to be increased. To take up required initiatives in an integrated manner convergence is needed on priority among different stakeholders. The entry point for convergence, discussion and implementation of the emerging new sector was designed in the form of a two day conclave during 29-30th April 2011. The different participants for the conclave were different buyers, wholesalers, interested entrepreneurs, consumers, farmer etc who are already in the organic sector or are interested to join the organic sector in Uttarakhand. A total of 300 persons participated in the seminar which was inaugurated by the Agriculture Minister of the state Shri Trivendra Singh Rawat. Other dignitaries present were: Principal Secretary Forest & Rural Development Shri Rajiv Gupta, Secretary Horticulture Shri Vinod Fonia and Chairman of the UOCB Shri KC Punetha. On the second day Hon'ble Chief Minister Dr Ramesh Pokhariyal "Nishank" participated in the opening session. The chief minister lauded the initiatives of the Uttarakhand Organic Commodity Board for the development of niche market and said that brand 'Himalaya' is a very big brand and should be explored with full diversity. In the two days, different sessions were held where more than 35 speakers shared views and experiences. The chairpersons of each session were eminent persons from different sectors having varied experience. An exhibition was also organized on the occasion where participants exhibited their products and initiatives. The seminar presentations projected that there is immense scope and potential in the organic sector, therefore all stake holders including the farmers need to put their best foot forward. The last session of the second day which was on the business development of the sector was most interesting where stress was laid on the long term support of the sector to all stake holders including the facilitating organizations, projects and farmers. The value chain segment needs to be pushed with support from the industry, KVIC, Rural Development Department etc. Setting up of a cell which would function as a single window for the quick processing of the proposals of the organic entrepreneurs is being discussed with the technical support of the GIZ India and Uttarakhand Organic Commodity Board. (Report by Ms Binita Shah, SPM, UOCB, Uttarakhand, Deharadun)

Organic Research Conference in Prague - An international conference on the quality of organic food was held in the Czech capital from 18-20 May 2011. With 40 talks and 70 poster presentations, discussions addressed the latest verification procedures, methods of analysis and the current state of research in general into the quality of organically produced food. The conference was attended by experts, predominantly scientists, from 30 countries, such as New Zealand, Bulgaria, Estonia, Turkey and the USA. The organizers, the international network " the Association for Food Quality and Health" (FQH**)**, the Institute of Chemical Technology (ICT, Prague, Czech Republic) and Technology Platform Organics (TP Organics), invited scientists, players and manufacturers from across the world. The contribution by the FAO representative Barbara Burlingame was refreshing and quite revolutionary. She described that the FAO is shifting its focus from quantity in the context of conventional agriculture to biodiversity and ecological agriculture. The title of her presentation was "Sustainable Diets: Nutrition as an Ecosystem Service". Burlingame drew attention to two FAO conferences where the decision to pursue this approach had been taken, and to her book **"**Indigenous People's Food Systems". In her stimulating address, she drew attention to the huge reduction in

crop varieties occurring in the main producer countries, and she pointed out that the varieties of rice cropped in Bangladesh had fallen from 5,000 to 23. A similar situation prevails worldwide in respect of rice, potatoes and other staple foods. She said that in most cases the nutritional value of modern varieties was much lower than that of earlier varieties. Stressing the point that "health can never be seen in terms of a single indicator", Urs Niggli, from The Research Institute of Organic Agriculture (FiBL, Switzerland), formulated a range of criteria, such as the impact on the environment that farms should take account of. Thus he reported the results of a current FiBL study that investigated and summarized over 300 scientific studies of various farm-management systems. The results indicate the positive impact of organic agriculture on the environment in over 80% of the studies. Not only has the production of raw materials in agriculture but also processing played a hugely important part in food quality and safety. "80% of the food we consume is processed," declared Ursula Kretschmar-Rüger, also from FiBL. She emphasized that, although the sensory quality of a product is the decisive criterion for success on the food market, authenticity and the environmental impact of organic food are of great importance for the consumer. Throughout the conference, the issues that came up again and again were the "organic fingerprint" and how to find a method that can serve as a reliable indicator of organic, independent of organic fertilizer, climate and soil. It's not absolutely clear whether one such indicator can be found. Under the working title "novel methods", various tentative analytical approaches were presented, and they could scarcely have been more different from each other. They ranged from the organic crystallization method and the fluorescence method to analysis with a mass spectrometer. The last of these methods, presented by Jana Hajslova, University of Prague seems at the moment to deliver the most plausible results. She examined 63 identifiers, in particular pesticide residues, to which she allocated markers. After a large number of analyses of milk, apples, potatoes and paprika, she succeeded in establishing a precise fingerprint of organic and conventional foods. Fluorescence fingerprinting to determine differences in quality between foods of organic and conventional origin was the subject of much lively discussion during the conference. (Source - Organic-Market.Info Online Magazine" mail@organic-market.info)

USDA Organic Farming Systems Research Conference - USDA sponsored a conference on March 16-18, 2011 in Washington DC to examine findings from research on organic farming systems, including many longstanding projects. The audience included researchers, policymakers, farmers, ranchers and others who were interested in exploring the implications of organic farming systems research. Conference objectives were aimed at:

- To examine findings from U.S. research on organic farming systems, including two key types of research—long-term farming experiments and nationwide economic producer surveys.
- To explore the implications of these findings for U.S. agricultural productivity, economic viability, environmental stewardship, and quality of life goals.
- To facilitate dialogue among the various disciplines, farm groups and other stakeholders involved in organic farming systems research, and to generate recommendations for improving the way this research is conducted.
- To create new ideas for future research in organic farming systems.

Book Reviews

Organic Agriculture and Agribusiness Innovations and Fundamentals, 2011, Published by Asian Productivity Organization, ISBN 92-833-7090-2, pages 146 – Organic agribusiness is expanding fast worldwide, and the Asia-Pacific Region is no exception. The global organic market is driven by consumer perceptions that organic agrifood products are healthier, cleaner and more ethical then conventional ones. As a result the demand for organic agrifood is increasing. The Asian Productivity Organization (APO) champions green productivity as a tool for achieving sustainable socio-economic development in Asia-Pacific Region. To promote green productivity in agriculture the APO organized several projects in Asian countries. This volume presents selected papers from three such projects organized in Pakistan and India, covering aspects of organic agriculture and agribusiness. In all there are 15 articles contributed by eminent persons in the field belonging to India, Taipei China, Korea, Philippines, Germany, Shri Lanka, Austria and The Netherlands. The volume is divided into three parts. Part I describes Organic agriculture, agribusiness, and small farmers of Asia. Part II deals with Organic agriculture promotion: Innovative ways and Part III elaborates Organic agribusiness promotion: Technical fundamentals. (AKY)

Organic Farming for Business T. Natarajan, Swastik Publications, 2011, 312 p, ISBN : 93-8013-842-8, Rs. 900.00 - “This book makes an attempt to present the available information on organic agriculture in a cogent and easily understandable manner. Though it is not exhaustive, which it is not meant to be, it is felt that book will give an overview on the subject to the interested reader. A viewpoint on organic agriculture has been presented in the book, based on the experience of the author. The book contains chapters on organic manures (including green manures), recycling of organic wastes, vermiculture, biofertilizers, organic methods of pest and weed management, integrated nutrient management, farming systems and case studies of organic farming. Selected literature is presented for further reading. It is hoped that the book will serve as a good reference source for those interested in organic agriculture.”(jacket)

Organic Farming for Sustainable Agriculture Edited by P.C. Trivedi, Aavishkar, 2011, xiv, 210 p, ISBN : 81-7910-339-5, Rs. 750.00 - "Sustainable agriculture is agriculture that is ecologically sound, economically viable and it conserves the resources such as soil, ground and surface water, minerals, petroleum and biodiversity. Sustainable crop production is only possible when the natural resources based on which the production activity depends should not be eroded or harmed in any manner. Organic Farming is the wise answer to the problems. Organic farming means adopting techniques that maintain soil fertility indefinitely, that utilizes as far as possible, only renewable resources, that do not grossly pollute the environment and that fosters life energy within the soil and throughout the cycles of all the involved food grains. The present book "organic Farming for Sustainable Agriculture" covers the application of Organic Farming in the present scenario and suggesting the ways and means of driving the maximum benefits by using biofertilizers for sustainable agriculture." (jacket)

Practical Organic Farming, R. Quereshi, Arise Pub, 2011, viii, 240 p, fig, , ISBN : 93-80162-56-0, Rs. 700.00 - Beginning as

a small protest to the industrialization of agriculture in the 1920s, organic farming has become a significant force in agricultural policy, marketing, and research. No longer dismissed as unscientific and counterproductive, organic techniques are now taken seriously by farmers, consumers, scientists, food processors, marketers, and regulatory agencies in much of the world. Organic farming is both dynamic and forward looking but is also rooted in tradition. It is these traditions that can provide valuable starting points in debates over how organic farming should meet new challenges such as globalization, the emergence of new production techniques, and growing concern over equality and social justice agriculture. Complementing general discussions with case histories of important organic institutions in various countries, this comprehensive discussion is that first to explore the development of agriculture. (jacket)

Organic Sesame Production, KA Gopinath, B. Venkateshwarlu, S. Venkateshwarlu, S.K. Yadav, S.S. Balloli, Ch. Srinivasarao, Y.G. Prasad and M. Maheshwari, Published by Central Research Institute for Dryland Agriculture, ICAR, Hyderabad, pages 34 - Sesame is an important oilseed crop grown in some states. It is grown mostly under rainfed conditions during kharif, but rabi and summer crop is supported with irrigation. India ranks first in area and production of sesame in the world. Since it is essentially used in food and medicine in developed countries, the demand for certified organic sesame is increasing. With the growing demand for organic sesame, a field experiment was initiated at the research farm of CRIDA, Hyderabad to evaluate the feasibility of organic sesame production under rainfed conditions and to assess the impact of organic management on sesam quality and soil properties. The present bulletin is the result of five years of research results. The publication is useful for all which are interested in cultivation of organic sesame. (Foreword by B. Venkateshwarlu)

Good Agricultural Practices for Medicinal Plants. Published by National Medicinal Plants Board (NMPB), Department of AYUSH, Government of India in collaboration with WHO Country office for India, New Delhi – India has a rich heritage of plant based healthcare systems like Ayurveda, Unani and Siddha with a very high degree of societal acceptance. Forests however continue to be the main source of the raw materials used in manufacture of such medicines. Unsustainable collection from the wild is resulting into large number of species entering the red data book. The Department of AYUSH through NMPB has launched major initiatives to promote cultivation of medicinal plants, thereby integrating medicinal plants into the farming system. To ensure the quality of the produce the NMPB has prepared India specific Good Agricultural Practices (GAPs) on the pattern of Good Agriculture and Field Collection Practices (GACPs) developed by the WHO for medicinal plants. Like any other standard manual the compilation includes: details on need for such practices, definition, scope and standards relating to soil and climate, seeds and propagation material, crop management for cultivation, harvest and post harvest management, documentation and personal and equipments. The compilation is an official document for future certification programmes for GAP of medicinal plants in the country and shall serve as the standard reference. (AKY)