

ISOFAR Newsletter no. 1, 2017

Dear ISOFAR members and supporters.

Organic agriculture is growing. We experience that from a growing number of projects, papers published in our journal Organic Agriculture, and the interest in delivering news to our website. Selected topics are compiled in this newsletter, emphasizing the upcoming ISOFAR general assembly and scientific conference in New Delhi, and several interesting events which members arranged. Thanks a lot for all your valuable contributions!

All members have open access to the ISOFAR scientific journal Organic Agriculture. This is also a nice place to publish your next peer-reviewed paper!

The <u>ISOFAR website</u> is open for all ISOFAR members and supporters who want to publish news about events, projects, networks, a country report, or an institute profile. Potential authors and contributors are welcome to get in touch by e-mail (anne-kristin.loes@norsok.no) to agree about details.

its successful poster.

Anne-Kristin Løes, Vice president of ISOFAR





Organic World Congress: Scientists welcome! ISOFAR organizes the scientific track of the OWC in India, November 2017. About 150 scientists from more than 50 countries will contribute, and ISOFAR will repeat

ISOFAR General Assembly 2017: November 8, New Delhi

Welcome to the ISOFAR GA, arranged as a preconference before the OWC! Practical info is found <u>here.</u>









Call for Candidates for ISOFAR World Board 2017-2020

Every three years, at the General Assembly, we elect the new World Board of ISOFAR. The next election will take place on the 8th of November 2017 in Delhi.

OWC pre-conference on animal husbandry

On November 7-8, 2017, the conference "Role of livestock in sustainable agriculture" will take place as a preconference of the 19th OWC in New Dehli, India.

Course on Organic Animal Husbandry at Indian Veterinary Research Institute

A course on "Organic Animal Husbandry: Concept, Standards & Practices", sponsored by the Indian Council of Agricultural Research was organized during November 28- December 7, 2016 at ICAR- Indian Veterinary Research Institute, Izatnagar, India.





Finland: Organics for tomorrows food systems

With several partners, the Finish Research Institute (FORI) recently arranged the 4th organic NJF conference in Mikkeli, Finland. About 80 participants from 13 countries enjoyed Finnish summer and hospitality during June 19-21, 2017.

Workshop on organic apiculture in Iran

IFOAM-IRAN in cooperation with IFOAM Apiculture Forum hosted the workshop on "Organic Apiculture" in order to develop and promote production and marketing of organic honey products and beekeeping in Tehran-Iran, 4-5 July 2017.





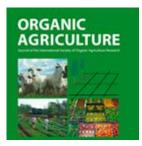


The

Organic Center

The Organic Center is a non-profit based in Washington DC in the United States with the mission of convening and conducting credible, evidence-based science on the environmental and health impacts of organic food and farming and communicating them to the public.





Tackles Science CommunicationThe latest annual Confluences Conference in the United

The United States Organic Confluences Conference

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Our scientific journal Organic Agriculture is progressing

Organic Agriculture recently received its first Scimago Journal Rank indicator, developed from data recorded in the SCOPUS database of Elsevier during 2013-15.



TP Organics and TIPI organised Science Day for the fifth time at BioFach 2017, Nuremberg, Germany. ISOFAR was represented at the meeting by the board members IIse A.Rasmussen and M. Reza Ardakani.

Mapping emerging challenges in organic agriculture in Nigeria

Nigeria is one of the 179 countries in the world with data on certified organic agriculture. According to the latest FiBL survey (2017), there are 5,021 ha of certified organic land with 101,261 producers, 80 processors and 80 exporters in Nigeria.

The Organic Center





SoilVeg project - no tillage systems in organically managed vegetable production

The aim of SoilVeg is to improve soil conservation and resource use through the introduction and management of Agro-ecological Service Crops (ASC). The project is now presenting preliminary results.



Organic World Congress: Scientists welcome!

ISOFAR organizes the scientific track of the OWC in India, November 2017. About 150 scientists from more than 50 countries will contribute, and ISOFAR will repeat its successful poster competition. Please join the poster jury, and propose for a membership of the ISOFAR world board at the General Assembly!

The organic world congress (OWC) of IFOAM is the largest happening within the organic community. Every three years, countries all over the world compete to be the host of the next OWC. In Istanbul in 2014, India won to arrange the 19th OWC, on November 9-11, 2017.

Many members and supporters of ISOFAR will go to New Delhi for the general assembly of our association on November 8, to participate in the <u>scientific track arranged by ISOFAR</u>, <u>TIPI and the National Centre of Organic Farming (India)</u>, to join into <u>plenary sessions and</u> <u>other events and not least</u>, to see some real Indian organic agriculture.

We encourage all ISOFAR members to participate in the general assembly. Being only for members, it will not be announced on the website of the OWC as a pre-conference, but information will be found here.

The general assembly is important to discuss the strategy for ISOFAR the coming three years, and not least to elect the new world board and the next ISOFAR president. <u>Here you find the form form to be filled to propose yourself as a member of the ISOFAR world board, which has up to 12 members. Such a proposal is mandatory, also for current board members. With board member Raffaele Zanoli, former general secretary of ISOFAR Daniel Neuhoff will kindly administrate the elections.</u>

As in 2014, the five best posters presented at the scientific track of the OWC will receive a diploma, 1000 Euro and positive attention during the last evening celebration party. ISOFAR board member Ewa Rembiałkowska is responsible for organizing a broad jury to evaluate the posters. All ISOFAR members and supporters going to India for the OWC are warmly welcome to get in touch with Ewa at <u>ewa_rembialkowska@sggw.pl</u> and propose yourself as a jury member. Tell Ewa when you will arrive and leave the congress venue, your cell phone number and your scientific competence in a few words. Ewa will then compose small teams of jury members and bring you in touch by e-mail.



ISOFAR General Assembly 2017: November 8, New Delhi

Welcome to the ISOFAR GA, arranged as a pre-conference before the OWC! Practical info is found here.

The 2017 general assembly (GA) of ISOFAR will take place on Wednesday, November 8 2017, at 14:00 am - 18:00 pm.

Venue: National Centre of Organic Farming (http://ncof.dacnet.nic.in/), Sector 19, Hapur Road, Kamla Nehru Nagar, GHAZIABAD - 201 002 (UP)

The National Centre of Organic Farming at Ghaziabad, India, where the ISOFAR GA in 2017 will be arranged.

AGENDA for the meeting:

- 1. Welcoming of participants (President Prof. Dr. Gerold Rahmann)
- 2. Technicals:
- 2.1. Moderator (NN)
- 2.2. Final determination of agenda, amendments
- 2.3. Appointment of a minute keeper (NN)
- 3. Reports from the board 2014 2017
- 3.1. President (Gerold Rahmann)
- 3.2. Cash report (Treasurer Ilse Rasmussen)
- 3.3. Discussion of the reports
- 3.4. Exoneration of the Board 2014 2017
- 5. Election of the new Board 2017 2020
- 5.1. Explanation of the procedure
- 5.2. Short presentation of the candidates
- 5.3. Elections
- 5.4. Ballot counting and announcement of results
- 6. Break (simultaneously: constitutive meeting of new Board Members)
- 7. Presentation of the New Board, E- Board and President



8. Outlook on future activities

- 9. Miscellaneous
- 10. Closure

You are encouraged to pre-register for the GA. Please send an e-mail to ISOFAR board member Dr. M. Reza Ardakani; <u>mreza.ardakani@gmail.com</u>

According to the statutes of ISOFAR, a Board of Directors composed of 6-12 members is elected on the General Assembly (GA). The board is led by a President, assisted by a Vice President and a Treasurer. These three persons compose the Executive board of ISOFAR, and are elected by the board members. To facilitate that all members may have the same possibility to participate in the board, we conduct an *open process for applications for a board position*. Please fill in this form

Deadline for submission: September 15, 2017.

A letter of invitation for the GA is found here



Call for Candidates for ISOFAR World Board 2017-2020

Letter from ISOFAR President

Every three years, at the General Assembly, we elect the new World Board of ISOFAR. The world board has 6 to 12 members.

The next election will take place on the 8th of November 2017 in Delhi.

I would like to motivate you to submit your application.

A) Following criteria have to be fullfilled:

- You have an accademic degree.
- You are working in a scientific institution.
- You are member of ISOFAR and have paid at least the last two years (2016 and 2017) your membership fee (that you can do just before the election starts on site).
- You have experience in research in Organic Farming.

B) You non-formal submission should promote your application in advance and should include:

- 1. Full address (business address)
- 2. Your CV:
- 3. Your motivation:
- 4. Your qualification:

C) Please send your application not later than **September 15 2017** to **isofar@thuenen.de**.



Kind regards, Prof. Dr. Gerold Rahmann President of ISOFAR



OWC pre-conference on animal husbandry

On November 7-8, 2017, the conference "Role of livestock in sustainable agriculture" will take place as a pre-conference of the 19th OWC in New Dehli, India.

This is concurrently the third world-wide Organic Animal Husbandry Conference. The venue will be the National Centre of Organic Farming at Ghaziabad.

For more details:

http://www.fibl.org/de/service/termine/animal-husbandry-world-congress.html

Invitation and programme





Course on Organic Animal Husbandry at Indian Veterinary Research Institute

A course on "Organic Animal Husbandry: Concept, Standards & Practices", sponsored by the Indian Council of Agricultural Research was organized during November 28- December 7, 2016 at ICAR-Indian Veterinary Research Institute, Izatnagar, India.

It was attended by 13 scientists and university teachers from research institutes and agricultural universities.



Finland: ORGANICS for tomorrow's food systems

With several partners, the Finish Research Institute (FORI) recently arranged the 4th organic NJF conference in Mikkeli, Finland. About 80 participants from 13 countries enjoyed Finnish summer and hospitality during June 19-21, 2017.

The Nordic Association of Agricultural Scientists (NJF) conference had four tracks: Tuning up sustainable organic production, Organic food, human health and wellbeing, Organics in our societies and Organics- the next step. Excellent key speakers were invited. John Reganold from USA opened the conference, proposing that organic agriculture is an important ingredient in a blend of innovations required for sustainable development in the 21st century. Animal scientist Lotta Rydhmer, Sweden discussed the conflict between increasing organic volume, struggling to maintain organic integrity, and increasing the sustainability of organic agriculture, where precautionary principles and (out-dated?) regulations easily conflict with scientific development. Food systems expert Carola Strassner, Germany inspired the audience by evidence that consumers preferring organic also favor more heathy food and lifestyle in general, and vice versa. Good things go together.

ISOFAR supported the event, and Ilse A. Rasmussen from the ISOFAR world board participated in the scientific committee, lead by Carina Tikkanen-Kaukanen from the University of Helsinki. ISOFAR president Gerold Rahmann gave the final plenary talk. He emphasized that organics is not a perfect model, and that we have to develop a multitude of different solutions to enhance e.g. the availability of food in the world. However, organic agriculture should be seen as one way to achieve that. Additional to the invited speakers, 38 oral presentations were given and 17 posters presented.

Participants at the event stated that NJF and ISOFAR conferences are quite unique. They are agricultural, but still summon the whole food chain, unlike the conventional food chain related conferences. Developing the whole food chain together, all stake holders benefit. This conference was another good example of this uniqueness.

In cooperation with local universities and research institutes, four organic NJF conferences have been arranged so far: In Sweden 2007, Estonia 2011, Denmark 2013 and Finland 2017. Will Norway possibly host the NJF organic conference in 2021, or will the event go to Lithuania, Latvia or Iceland, which are the other member countries of NJF? Atle Wibe from Norwegian Centre of Organic Agriculture (NORSØK) participated in the scientific committee, and is motivated to lead a process to make this reality. Nordic-Baltic cooperation in food and agricultural sciences is required, and very useful also for participation on a larger European or even global arena. Many project consortia have been inspired from ideas and friendships made during NJF events. NJF celebrated its 90 year anniversary in 2008, and the organic seminars have helped to refresh the organization.

Also visit <u>http://njf.nu/assets/Uploads/PRESS-RELEASE-19.6.pdf</u> and <u>https://www.facebook.com/NJF2017Mikkeli/</u>



WORKSHOP ON ORGANIC APICULTURE IN IRAN

IFOAM-IRAN in cooperation with **IFOAM Apiculture Forum** hosted the workshop on "Organic Apiculture" in order to

develop and promote production and marketing of organic honey products and beekeeping in Tehran-Iran, 4-5 July 2017.

Organic production is attracting significant attention in Iran, and positive measures have been taken. To catch up with the global pace of organic production, filling existing information gaps are crucial. Deputy of Agriculture Minister for Livestock Production Dr. Hassan Rokni made these remarks while delivering a speech at the opening ceremony on the organic apiculture workshop, and called for acceleration of acquiring modern sciences and techniques in this field. He mentioned that two percent of the country's honey production, equal to 1500 to 1600 tons, is exported.

125 participants from different disciplines such as beekeepers (individual or in cooperatives), post graduate students, faculty members, scientists from different research institutes, traders, stakeholders, private and governmental authorities attended the workshop.

As resource persons, Ulrich Broker from IFOAM Apiculture Forum, Germany participated, together with Dr. Gholamhosein Tahmasbi, an Iranian scientist and scientific member of the Iran's Ministry of Agriculture, and expert in the biology and ethology of honey bees.

The presented topics were: - Economical, ecological and social implications of apiculture - Legal norms and guidelines / official and private standards - Perspectives of organic apicultural production - Conversion problems, risk assessment and evaluation - Specific apiary operations - Quality management and assurance in organic apiculture - Inspection and certification processes - Labeling/ packaging and marketing - Endemic Iranian bees and their potentials for honey production

The workshop was supported by the Iran Organic Association, and the Central Organization of Rural Cooperatives.

Read more: http://www.ifoam.bio/en/regional-bodies/ifoam-iran

Reported by: Dr. M. Reza Ardakani (<u>mreza.ardakani@gmail.com</u>) Board member of ISOFAR Director, IFOAM-IRAN



TP Organics Science Day 2017

TP Organics and TIPI organised Science Day for the fifth time at BioFach 2017, Nuremberg, Germany.

TP Organics and TIPI, Technology Innovation Platform of IFOAM – Organics International, organized the 5th edition of the Science Day at BIOFACH.

The morning session was devoted to the review of TP Organics' (TPO) achievements in the wake of its 10th anniversary. Eduardo Cuoco, head of the TPO secretariat, presented some facts about TPO, and drew the attention to the large amount of calls under H2020 which were relevant for organic agriculture – to a large degree a result of the work of TPO. Hans-Jörg Lutzeyer from the European Commission, DG Research & Innovation, drew our attention to the current challenges to feeding the world and the sustainable development goals and also mentioned possiblities for organic agriculture projects under H2020.

After this, the development of a new long-term strategy for TPO was presented. The participants had the chance to put forward their priorities for TP Organics' advocacy work and suggestions for improving services for members. Based on the outcomes of the workshop, TP Organics will prepare a draft strategy document which will be open for consultation during spring-summer 2017. The final strategy will be presented at the Organic Innovation Days on 15-17 November 2017 in Brussels.

In the afternoon, TIPI presented the vision and action plan of TIPI with the title "The 100 questions to be addressed by novel organic food and farming systems". The session focussed on identifying the research gaps in organic food and farming systems in the context of international cooperation. Urs Niggli mentioned that organic farming does not grow by itself – research is necessary!

The main part of the afternoon was dedicated to a workshop, which aimed at contributing to the development of a strategic research agenda for organic food and farming systems in different regions of the world. The need to make use of the current (global) political agendas was expressed, and it was stressed that there is a strong need to understand the stakeholder landscape in order to select the most accessible potential funding sources.

ISOFAR was represented at the meeting by the board members Ilse A. Rasmussen and M. Reza Ardakani.

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Board member of ISOFAR



TP Organics:<u>http://tporganics.eu/</u>

Presentations from Science Day: <u>http://tporganics.eu/tp-organics-long-term-strategy-at-biofach-2017/</u>

TIPI: http://www.organic-research.net/tipi/about.html

TIPI presentations: <u>http://orgprints.org/31343/</u>

TIPI strategy: <u>http://orgprints.org/31340/</u>



MAPPING EMERGING CHALLENGES IN ORGANIC AGRICULTURE IN NIGERIA

Nigeria is one of the 179 countries in the world with data on certified organic agriculture. According to the latest FiBL survey (2017), there are 5,021 ha of certified organic land with 101,261 producers, 80 processors and 80 exporters in Nigeria.

It is no longer news to most organic agriculture practitioners that the African Heads of State and Government in 2011 at Addis Ababa, Ethiopia took a monumental decision (African Union Decision EX.CL/Dec.621 XVIII) to mainstream ecological organic agriculture into the agricultural systems of all member nations by 2020. The need to vigorously pursue the realisation of this goal was recently reiterated by stakeholders from national and international organisations during the 3rd African Organic Conference (AOC) held in October 2015 in Lagos, Nigeria.

Unfortunately, the organic agriculture sector is facing very complex challenges along the value chains of all agricultural commodities. Consequently, a rapid appraisal of these challenges was done among members of the Association of Organic Agriculture Practitioners of Nigeria (national movement body) and Organic Agriculture Project in Tertiary Institutions in Nigeria (OAPTIN) which is the pioneer organised organic agriculture body in Nigeria. The appraisal ranked the challenges in order of priority with a view to advising relevant scientists on the appropriate areas to direct their research efforts and thereby develop practical solutions to the identified challenges.

i. Organic crop production

Out of the ten challenges highlighted in the survey, sourcing organic seeds and herbicides were adjudged as the top two most critical challenges. This underscores the need for input suppliers to liaise with relevant scientists in providing requisite inputs for production. Organic fruit production was the least challenging to practitioners.

ii. Organic post harvest handling of produce

Food quality control, processing techniques and storage of produce were the three topmost challenges in the sub-sector. The dearth of specialists in the field of Food Science and Technology should be urgently addressed and this will go a long way in solving some problems confronting the food systems in the country.

iii. Organic livestock production

Sourcing of pure organic livestock breeds and organic feeds were adjudged as the two most critical challenges by the respondents. Livestock farmers sometimes use traditional herbs to tackle health challenges of their animals. This sub-sector deserves more attention than it is currently receiving from the various tiers of Government.

Challenges in organic trade

Organic agriculture is at two levels (certified and non-certified) in Nigeria. The certified organic practice is mainly through Participatory Guarantee System (PGS) and the produce is for local



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consumption. The respondents identified certification and adhering to organic standards as their major challenges. Consequently, there is the need for massive advocacy among stakeholders to update them on the implications of certification and standards.

Challenges in other sub sectors of organic agriculture

Conservation of biodiversity is very germane to organic agriculture and respondents identified it as the most critical when compared with organic fish management and apiculture. It is suggested that more scientific efforts be geared towards these aspects to enable the practitioners get a better understanding of the concepts.

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Agronomist

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Board member of ISOFAR



The Organic Center

The Organic Center was founded in 2002, and is a non-profit based in Washington DC in the United States with the mission of convening and conducting credible, evidence-based science on the environmental and health impacts of organic food and farming and communicating them to the public. The Center communicates up-to-date studies on sustainable agriculture and health and collaborates with academic and governmental institutions to fill gaps in knowledge about organic.

The current scientific staff includes Dr. Jessica Shade, Director of Science Programs, and Dr. Tracy Misiewicz, Associate Director of Science Programs. Dr. Shade directs the Center's programmatic activities and has worked on a number of diverse research programs ranging from applied solutions to on-farm challenges to methods for improving environmental impacts of agriculture. Dr. Misiewicz leads the Center's reports compiling current science on critical issues affecting organic food and farming, and heads the Center's grant development program, and has written many successful scientific and educational grants to support research and outreach on issues of importance to organic stakeholders.

The Center's process includes the following steps:

Identifying gaps in our knowledge

One of the most important things that the Center does is identify areas where there are gaps in knowledge about organic. The Organic Center does this through many channels: by holding discussions at grower meetings, meeting regularly with their scientific advisory board, conducting an annual survey, and holding one-on-one and group meetings throughout the year.

Put together a research team

Often, scientists do not talk with industry or farmers, so the research addressing challenges keeping the organic sector from growing would not happen without a bridge between the voices behind those needs and academia. The Organic Center is that bridge in the United States.

The Center finds research teams by identifying labs that are working on cutting edge issues, and by reading papers to find people who are publishing in the most impactful journals. Many of the scientists on their teams have never worked in organic before. This can have cascading effects on increasing research in organic, because once labs start working in organic they 1) continue to do projects in organic and 2) train students in organic

Develop a project

Project development is important, because the research needs to be directly impactful to organic stakeholders and have meaning to the target audience. The Organic Center engages stakeholders throughout the process, and starts by putting together an advisory board that can include farmers, researchers, industry members, extension agents, government agencies, and other non-profits. This group helps provide guidance for the project to make sure it is relevant.



Find funding

Many of the projects the Center collaborates on require funding from multiple sources, because grants and industry funding are limited.

Project management

The Organic Center does project management throughout the lifespan of the research. They make sure the project sticks to a timeline and provides clear deliverables that can apply to solve challenges. They also provide any skills needed to complement the researcher's expertise areas.

Communication

When it comes to Communication the Organic Center is the main outreach entity for organic science in the United States. They use extensive networks, put on webinars and workshops at regional and national meetings, newsletters, press releases, social media, develop web pages for each project, and more.

The Center also goes a step beyond traditional farmer and consumer communication to reach policy makers in the United States.

Leverage results

The Center leverages the research results into actionable next steps. They use the findings not only to solve the initial challenge areas that the project addressed, but also to identify new gaps in knowledge, which starts the cyclical process over again.



The United States Organic Confluences Conference Tackles Science Communication

The latest annual Confluences Conference in the United States brings together organic researchers, farmers, policy-makers, and industry to ensure that stakeholders are connected to scientific research results.

This year's annual Organic Confluences Conference was organized by the Organic Center and the United States Department of Agriculture on May 22-23, 2017 in Washington D.C., United States. It focused on ensuring that the pathways between organic stakeholders and research being done both on and off the farm are functioning effectively. As research on organic agriculture reaches an all-time high, it is more important than ever that there are clear lines of communication among diverse organic stakeholders to ensure that research needs are met and research results are effectively disseminated to–and used by—end users.

The conference included panels and case studies presented by thought leaders including farmers, scientists, industry members and key policymakers to assess the state of research communication and barriers that constrain diverse stakeholders from using research results and adopting new technologies. Following the presentations, conference participants engaged in conversations about barriers to the dissemination and adoption of scientific research findings in the organic sector, and recommendations for how to overcome those barriers.

Information from the presentations and discussions are being used to create a White Paper addressing how to improve communication among groups in order to ensure that relevant research is being conducted, that results are being appropriately disseminated, and that stakeholders have access to and are utilizing research results and technologies.

Meanwhile, The Organic Center has prepared a White Paper from discussions emanating from the 2016 Organic Confluences: A Summit to Turn Environmental Evidence into Policy Practice. Entitled "Outcomes from the 2016 Organic Confluences: Increasing Agricultural Sustainability Through Organic Farming," <u>it can be downloaded here</u>

More information about this year's <u>Summit and The Organic Center is available on The</u> <u>Center's website: www.organic-center.org</u>

Contact:

Congresswoman Chellie Pingree: US Congresswoman Chellie Pingree addresses the audience about the importance of organic funding

Dr. Mathieu Ngouajio: Dr. Mathieu Ngouajio, of the United States Department of Agriculture, speaks about organic programs within the National Institute of Food and Agriculture

Robert Quinn: Robert Quinn discusses his experiences as a farmer interested in organic research

Dr. Jessica Shade, The Organic Center, jshade@organic-center.org, www.organic-center.org



Our scientific journal Organic Agriculture is progressing

Based on records from 2013-15, Organic Agriculture was recently ranked by SCOPUS index.

Since 2011, ISOFAR has its own scientific journal, published by Springer. The journal, named Organic Agriculture, was launched in 2011

(<u>http://www.springer.com/life+sciences/agriculture/journal/13165</u>). The focus are original research results, review papers and country reports on organic agriculture. Until now, 174 papers have been accepted, with an acceptance quota of about 25%. ISOFAR members have free access to all papers in pdf format.

The journal is truly global. Since 2013, we received manuscripts from more than 46 countries throughout the world. Organic Agriculture recently received its first Scimago Journal Rank indicator (http://www.scimagojr.com/index.php), developed from data recorded in the SCOPUS database of Elsevier during 2013-15. With a character of 0.34, Organic Agriculture was ranked number 1114 out of 1954 journals within agriculture and biological sciences (ABS). The number 1 journal on the ABS-ranking list was Annual Review of Pathology with a character of 13.6. For comparison, a well-known journal such as Plant and Soil was ranked 196 with a character of 1.4. Considering the few years of existence, 0.34 is a good number for our journal.

The ISOFAR board follows the development closely, aiming to increase the impact and relevance of the journal in the coming years. During the upcoming OWC, on November 8, 2017 in New Delhi, India we will discuss the journal's contents and how to support quality improvement, in a workshop for journal editors, advisory bodies and publisher representatives. ISOFAR invites all organic researchers to submit their manuscripts to the society's journal, Organic Agriculture. That will make the journal stronger and better, and strengthen the scientific and personal networks between scientists engaged in organic agriculture research.



SoilVeg project - no tillage organic vegetable production through roller crimper on test in 9 European countries

<u>SoilVeg</u> is an innovative European research project tackling the implementation of no tillage systems in organically managed vegetable production.

The aim of SoilVeg is to improve soil conservation and resource use through the introduction and management of Agro-ecological Service Crops (ASC). Reaching midway through the project, we are now presenting preliminary results.

SoilVeg is an innovative European research project tackling the implementation of no tillage systems in organically managed vegetable production. Its aim is to improve soil conservation and resource use through the introduction and management of Agro-ecological Service Crops (ASC).

No tillage systems can be based on the roller crimper technique to terminate ASCs growing prior to the cash crop. Its great potential has been shown for soil quality and fertility conservation, biodiversity improvements and energy savings. For these reasons, organic farmers, worldwide, are attracted by this approach. Furthermore, the no tillage system may reduce the risk of nutrient losses from the soil/plant system and greenhouse gas soil emissions, thus having benefits for the whole society.

However, the introduction of no tillage techniques is very challenging and often reduces yield and quality, especially in Northern European countries, where soil and climate conditions may limit the implementation of this approach.

Reaching now midway through the project, the preliminary results are:

- ASC species selection and sowing rates are crucial aspects to be considered, to optimise the roller crimper technique locally. Indeed, ASC establishment and regrowth after termination have been identified as critical points that deserve attention. Moreover, the machinery used for the ASC termination and direct transplanting need to be appropriately tuned up and tailored according to the specific soil conditions;
- In general, we have observed a yield reductions in the no-tillage compared to ASC incorporation into soil (i.e. green manure) and no ASC. On average, yield reduction varied widely (10 50 % in respect to the best performing tilled variants);
- Larger horizontal roots or deeper roots were generally observed in the tilled variants;
- So far no significant differences in nutrient availability were observed between the no till and the tilled variants. However, first measurements seem to highlight that the no tillage system has a positive impact on soil microbial parameters, which are an important indicator of soil quality;
- Overall, weed density has been significantly lower in the no tilled and mulched variants than in the tilled ones; in some sites, this gap has been reduced during the cash crop period since mechanical weeding was performed in the tilled variants while it was not feasible in the no till ones;
- Preliminary outcomes indicate that weed communities established in the tilled variants were characterised by annual weeds, being more competitive (with higher specific leaf area and canopy height) and flowering during a wider period;



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- Functional biodiversity of soil predator communities was enhanced in roller crimper ASC termination. Indeed, the density of ground beetles (Carabidae), rove beetles (Staphylinidae), and in some countries also spiders, was higher in comparison with green manured plots.
- Energy consumption was on average reduced of 20% per area unit in the no-tillage compared to the tilled variants where the ASC was incorporated into the soil;
- Results about greenhouse gas emission have been obtained by simulating the cropping systems functioning. Two of the most widespread simulation models EPIC and Daycent were preliminary adapted and validated for simulating no tillage vegetable cropping systems. Annual models predictions of soil C and N dynamic in the trials sites using EPIC and Daycent showed same trends regarding CO2 and N2O emissions from soils, accurately discriminating different mixtures of ASC species and termination techniques. Both model showed that both CO2 and N2O emissions decreased in the ASC roller crimper termination strategy compared to green manure.
- The experiments carried out in typical Mediterranean areas showed that the potential of organic vegetable systems to store carbon in soil is governed by humificationmineralisation processes, being also strongly controlled by ASC termination technique. On the other hand, simulations did not highlight differences between no tillage and tilled variants for nitrous oxide losses and ammonia volatilisations.

Thanks to the activities carried out so far, the research teams involved in SoilVeg project are progressively developing their expertise on the implementation of the no tillage system in organic vegetable production. Indeed, in all the countries involved in the project, researchers and farmers are participating in a continuous improvement process, sharing experiences on the set up and the use of roller crimpers to terminate ASC and on how to transplant the vegetable crop.

The results obtained at this stage of the project varied and, as expected, were strongly affected by local climate and soil conditions. However, we expect SoilVeg to identify - site by site - main constrains of no tillage systems based on the roller crimper technique. The researcher teams are working to tailor the technique at local level, improving its technical and environmental performance while, at the same time, mitigating its impact on yield and quality reduction.

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