

Special Interest Articles

- Organic Agriculture: Interview with a success story in south Lebanon
- Biological control of soil born pathogen on cucurbits under organic agriculture in Lebanon
- Organic Agriculture: Reduced emissions of Nitrous Oxide

Individual Highlights

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Organic Agriculture: Interview with a success story In South Lebanon Organic Taste of Life – Hadi el Solh

Hadi el Solh, a young motivated farmer in “Akبيه” district of Saida, South Lebanon, started organic farming practices on his conventional farm of 1.7 ha in 2004. He converted two vegetables greenhouses to organic with the support of AUB (American University of Beirut) project. For the first three years of conversion he said “I was loosing; after the fourth year of conversion I start gaining on several level (crop yields, soil fertility, better products taste and better market access etc..).”

In 2006, He decided to start converting his other greenhouses and in 2008, He converted his Banana, avocado production to organic. In comparison to conventional production after several years of organic farming, he says: “for me organic agriculture is as much or even more profitable farming system and this has triggered me to adopt organic practices on my entire farm.”

Hadi is now exporting his organic produces certified by “LibanCert” under the brand name “Organic taste of Life” to Arab countries (Qatar, Dubai, Saudi Arabia, Amman). He also sells his organic products in specialized shops in Beirut, in local supermarket and to United Nations (UN) in South Lebanon.

He finally added: “After six years in my agriculture experience, I have come to the conclusion that organic farming isn’t just a method to learn, but more of an investment of knowledge towards the whole farm ecosystem.

Organic farming is considered to be an approach to farming that promotes consumer wellness, rebuilds the garden soil, and also helps the earth. It’s great for the ecosystem and good for individual wellness. It’s a sustainable development practice that generates wholesome plants and animals with no damage to the planet.”



*“Inspection of Organic Unit
for Hadi el Solh “*

Biological Control of soilborn pathogen on cucurbits under organic agriculture in Lebanon

(Author: Eng. Charbel Abou Haydar)



“Soil born pathogen “

Vegetables growers in Lebanon suffer from soilborn pathogens that attack different vegetable types. They affect several host plants and are serious on cucumbers cropping systems. A research study on Biological Control of Soil borne Pathogens on Cucurbits under Organic Agricultural in the American University of Beirut was conducted by **Eng. Charbel Abou Haydar**. The study was designed to test the efficiency of different biological control agents for the control of soilborne pathogens of cucumber (*Cucumis sativus*) under organic farming. The biological control agents tested in this study were Promot®, Fulzime®, *Trichoderma viride*, *Trichoderma harzianum* and the mixture between *T.viride* and *T.harzianum*. These biocontrol agents were tested under different climatic regions (Lebaa and Beirut) and also *in vitro* laboratory experiments.

The mixture of *Trichoderma harzianum* plus *Trichoderma viride* gave the best result in disease control, plant growth promotion and yield increase. Promot®, Fulzime®, *Trichoderma harzianum* and *Trichoderma viride* were not effective. Increasing in the rate and number of application may enhance their efficacy. The study concluded with recommendation for further field studies to investigate the effect of these biocontrol agents under different soil and climatic conditions. The increase in the rate and frequency of applications also might give better results. Moreover in this study these biocontrol agents were compared to the control plots which received no treatments, further studies should be made in comparing these treatments versus synthetic chemical fungicides.(Charbel Elias Abou Haydar, 2008)

Organic agriculture: reduced emissions of Nitrous Oxide



“Organic Farm with cover fields“

Emission of nitrous oxide is directly linked to the concentration of easily available mineral nitrogen in soils. High emission rates are detected directly after fertilization and are highly variable. Denitrification is additionally enhanced in compacted soils. 1.6% of nitrogen fertilizer applied is emitted as nitrous oxide.

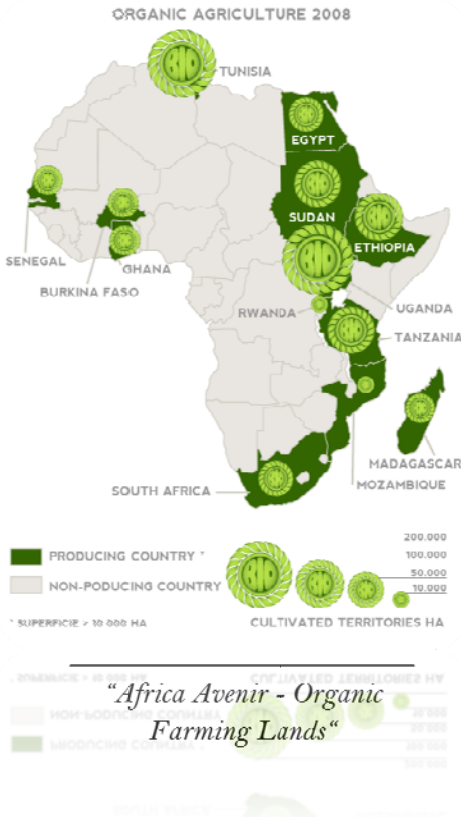
In organic agriculture, the ban of mineral nitrogen and the reduced livestock units per hectare considerably reduce the concentration of easily available mineral nitrogen in soils and thus N₂O emissions. Furthermore, these factors add to lower emissions of nitrous oxide:

-Diversified crop rotations with green manure improve soil structure and diminish emissions of nitrous oxide.

-Soil managed organically is more aerated and have significantly lower mobile nitrous concentrations. Both factors reduce emissions of nitrous oxide.

In studies done in five European countries lower emission rates for organic compared to conventional was noted. In a long term study in southern Germany was also found reduced nitrous oxide emission rates in organic farms, although yield –related emissions were not reduced.

Organic Agriculture a way out from Food Crisis



During the fourth United Nations conference; UNCTAD, the united nation conference on trade and development, the UN environmental program (UNEP) launched the **short film** on **“organic farming: a good option for least developed countries”**.

Even more revealing, a policy document of UNCTAD on sustainable agriculture and food security for least developed countries calls for *“a fundamental transformation, even a revolution in agriculture”*, in order to address the problems of rural areas of less developed countries. *“this revolution shouldn’t be based on expensive external inputs and imports.*

Government spends large amounts of their external reserves on synthetic chemical products, importing more than 90 % of chemicals used in agriculture.

UNCTAD report that the transformation in these countries should be based on sustainable agriculture, focusing on ecological intensification of agricultural production and not on chemicals.

The alternative for these countries is organic agriculture focusing on composting, mulching, crop rotation, intercropping, agro forestry principles, biological pest control, green manures,

water harvesting, use and further development of indigenous varieties.

UNEP–UNCTAD analysis of 114 cases in Africa reveals that the adoption of organic agriculture has led to increased yield of 116 %. Moreover the positive impact lasts because it is based on strengthening of the five types of capital relevant to farming communities: Human, social, natural, financial and material. The use of local resources has in fact a positive multiple effects on local economy in job generation and income improvement and food security.

Despite the obvious advantages, there are few governments which give attention or fund to support the development of sustainable agriculture. A notable exception was the regional government of Trigray, Ethiopia that provides consulting services in sustainable agriculture techniques, composting, prevention of soil erosion and water harvesting; the region has doubled yields and decrease the use of 95 % of agrochemicals.



“Africa-food security through Organic Agriculture “

Why we should all eat More Organic Food

Organic foods, especially raw or non-processed, contain higher levels of beta carotene, vitamins C, D and E, health-promoting polyphenols, cancer-fighting antioxidants, flavonoids that help ward off heart disease, essential fatty acids, and essential minerals. On average, organic is 25% more nutritious in terms of vitamins and minerals than products derived from industrial agriculture.



“Choosing organic healthy products “

Since on the average, organic food's shelf price is higher than conventional food, this makes it actually cheaper, gram for gram, than conventional food, even ignoring the hidden costs (damage to health, climate, environment, and government subsidies) of industrial food production. Levels of antioxidants in milk from organic cattle are between 50% and 80% higher than normal milk. Organic wheat, tomatoes, potatoes, cabbage, onions and lettuce have between 20% and 40% more nutrients than non-organic foods.

Organic food contains qualitatively higher levels of essential minerals (such as calcium, magnesium, iron and chromium), that are severely depleted in chemical foods grown on pesticide and nitrate fertilizer-abused soil. UK and US government statistics indicate that levels of trace minerals in (non-organic) fruit and vegetables fell by up to 76% between 1940 and 1991.

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