



Scientific Aspects of Agnihotra: Soil and Agriculture, continued (Part 9)

February 8, 2018

*By Dr. Ulrich Berk
Germany*

In the last article we quoted reports of FAO (the [Food and Agriculture Organization of the United Nations](#)) saying that only 60 years of farming would be left if conventional farming would continue as it is today.

Also we quoted Shree Vasant Paranjpe stating that the soil has to be rejuvenated first by Homa Therapy, thus creating a healthy micro-flora and micro-fauna.

This is the claim based on Vedic Knowledge.

To what extent could this claim be validated by modern agricultural sciences?

A lot of research work was done on the effects of Homa Farming on soil health at Dharwad Agricultural University, Karnataka, Southern India, under the guidance of Dr. Pramod Basarkar. Four M.Sc. theses had the subject of Homa Farming – one each focused on studying growth, yield, disease resistance, occurrence of pests, and effect on soil parameters.

Crops planted were soybeans, cabbage, tomato, andokra (ladies' fingers, a vegetable quite popular in Asian and African countries), one thesis each concentrating on one crop.

Results were very good, showing increase in yield, better quality of the produce etc. Today we want to just look at the effect of Homa Farming on soil quality, soil health.

There were considerable improvements – although all these four studies were only carried out for one season! It would be interesting to see how the soil improves even further if Homa Farming would continue for a couple of years.

The four studies examined nutrient content and biological properties of soil, mainly beneficial microorganisms, but did not go into physical properties such as soil texture and structure, pore space, permeability, water holding capacity, etc.

Soil nutrients: Normally there is a distinction made between macronutrients and micronutrients. Macronutrients are nutrients which are required in large quantities for plant growth. The primary macronutrients are N, P, K – Nitrogen, Phosphorus, and Potassium.

Micronutrients are of same importance for plant growth as macronutrients, only they are needed in smaller quantities.

Microorganisms: beneficial bacteria and fungi help to decompose organic matter in soil, fix nitrogen from the atmosphere, solubilise phosphorus, etc., and thus make nutrients available to plants. A soil without such microorganisms is dead – not really a soil in the proper sense.

Actinomycetes have characteristics of both bacteria and fungi. Their role in soil is mainly to break down organic matter which is difficult to degrade.

Soil dehydrogenases are used as an indicator of the activity of soil microorganisms; also they play an important role in the biological oxidation of soil organic matter.

Soil phosphatase activity plays a fundamental role in the transformation of P from soil organic matter into a form available to plants.

The following chart shows the change of soil parameters, especially soil microbial count and content of macro- and micronutrients, compared to control without Homa.

(These studies examined up to 18 different treatment combinations, such as soil application of Agnihotra Ash **OR** soil application of Homa Biosol. Here we do not want to go into these fine details – as in Homa Farming we use **BOTH** Agnihotra Ash (as well as other Homa ashes) and Homa Biosol.)

	Soybeans	Cabbage	Tomatoes	Okra
Biological properties of soil				
Beneficial Bacteria	30%	40%	19%	37%
Beneficial Fungi	60%	56%	75%	52%
Actinomycetes	44%	38%	57%	50%
Soil dehydrogenase	489%	54%	55%	55%
Soil phosphatase		18%	34%	11%
Soil macronutrients				
Available N	15%	15%	97%	25%
Available P	62%	56%	59%	70%
Available K	4%	24%	42%	25%
Soil micronutrients				
Cu	58%	17%	34%	12%
Zn	162%	35%	30%	25%
Mn	51%	39%	30%	27%
Fe	50%	20%	20%	21%

Table 1. Effect of Homa Organic Farming on Soil Parameters

It can be clearly seen that Homa Organic Farming improves soil quality in all the parameters measured. These results were obtained after just one season. It would be worthwhile to continue such a project and see how soil health improves within a longer period, say three years!

This time we concentrated on the effects of Homa Organic Farming on soil quality.

In the next article we will examine how plant growth, yield, quality of the produce were affected, and also see the effect on plant health and disease resistance.