Scientific Aspects of Agnihotra: Animals - Earthworms

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We previously have discussed two of the three best farmer's friends: Cows and bees. The third of these animals are earthworms. Earthworms play a decisive role in improving and maintaining good soil health – and as we have seen before soil health is of utmost importance for survival of mankind (see the articles on Soil and Agriculture). And as already now 25% of fertile soil has been degraded in the last 50 years, regeneration of soil is a big challenge for farming. Earthworms can help with that a lot.



They play a key role in improving soil structure and soil fertility and thus lead to a healthy soil. They consume organic matter on the soil surface or in the soil. This matter is digested in the earthworms' bodies and turned into a very good organic fertilizer .

Earthworms improve biological, chemical, and physical properties of soil:

Biological

Earthworms digest all different kinds of organic plant material and break it down to nutrient-rich humus. Also the population of beneficial microbes is increased and the microbial activity is stimulated.

Chemical

An earthworm consumes minute soil particles which are broken down and then excreted in the form of casts. According to informations from IFOAM, these casts contain five times more nitrogen, seven times more phosphorus, eleven times more potassium, and two times more calcium and magnesium than soil without

earthworm population. Also trace elements become more available to plants by earthworm activities.

Physical
Earthworms improve the structure of soil in several ways:
- They create tunnels deep into the soil (which last much longer than the earthworm lives). These tunnels allow water to penetrate deeper into the soil. Thus water holding capacity of soil increases.
- They break down clumps of soil by eating through these clumps.
- The earthworms' cast (the worms' excretion) helps to create stable soil aggregates.
- They help undoing the effects of soil compaction.

All this shows that earthworms are really very valuable farmer's friends. Shree Vasant remarked once, "They work night and day and do not form 'laborers' unions' to charge higher salary. They do their job for free."

Impact of conventional (chemical) farming
But now this job is getting more and more threatened – not by strikes but by methods of conventional farming. Problems are ploughing and tilling as well as use of pesticides and chemical fertilizers.
Studies showed that some pesticides are lethal to earthworms even at levels much lower than the recommended agricultural doses. But even if not lethal these pesticides and chemical fertilizers have a devastating effect on earthworms. Their size is reduced (and therefore they convert less organic matter into useful humus), and also their reproduction is happening at lower speed therefore the numbers of earthworms in the soil will be less. That can be easily seen on fields where conventional farming is applied. As a consequence soil health degenerates.
(For more infos see e.g. www.sciencedaily.com/releases/2014/03/140325113232.htm)

The role of Homa Organic Farming
How to restore soil health and for that make best use of earthworms? Homa Organic Farming offers a solution.
Shree Vasant Paranjpe wrote in the book „Homa Therapy – Our Last Chance:"
„The entire ecological system is benefitted by YAJNYA. For example, earthworms are able to generate more moisture in the soil due to performance of YAJNYA. The YAJNYA makes them happy and their hormone secretions increase, thereby benefitting the soil and therefore the plants that live in the soil. The earthworm is important to farming. YAJNYA atmosphere increases the hormones in earthworms involved in their reproductive organs and helps multiplication of the species which in turn helps the soil to become more rich."

Alas, we have no scientific studies so far about earthworms in Homa Atmosphere. But a there are several reports of Homa Farmers. Results are:

In Homa atmosphere, earthworms:

- Generate more moisture in the soil
- Increase the hormones secretions in their reproductive organs enabling them to reproduce at a faster rate
- With Homa, in less than one month, the number of earthworms doubles. Normally, this takes from three to four months.
- This is part of the bio-feedback effect from Nature which is obtained with Homa technology.

That earthworms grow bigger you see on these two photos which show earthworms found in the soil of the Homa Farm Shreedham of Christa and Ricardo Mena in Algodonales, Spain.



Homa Farm Earthworms – Shreedham in Algodonales, Spain

As in Homa Atmosphere earthworms multiply faster, grow bigger, and also the cast has some additional beneficial properties because of the specific hormone secretion, it is advisable to have a vermicompost unit on every Homa Farm.
In hot Indian climate it takes normally 42 days until vermicompost is ready for use: In Homa Atmosphere it only takes half the time!

During the composting process in Homa atmosphere, an exquisite fragrance is produced, which permeates the whole environment, contributing to the healing. This pleasant aroma attracts pollinators within the area.

This Homa vermicompost can be used to prepare Homa Biosol – a very powerful bio-fertilizer which Homa farmers can produce themselves on their farms. The extraordinary results scientists observed using Homa Biosol on different crops like

tomatoes, cabbage, soybean, and okra were described in previous articles.
More information on how to create a Homa vermicompost you find in: Bruce Johnson, Homa Farming Training Manual (available from the author).
Included in that manual is an article on Homa Vermiculture by Gloria Guzman.

Below: Sanjay Patil, manager of Tapovan Homa Organic Farm in India, shows how to set up a vermicompost unit.



Vermicompost unit in Tapovan, India