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## Agnihotra: A Holistic Energy System Affecting Plant Growth (Studies on some common Household plants)

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### **Abstract:**

*The study on the effect of 'Agnihotra' ( a Vedic Procedure for purifying atmosphere) on some household plants has shown that the **polished grain vapour** is stimulating the new shoot growth in plants, while the **unpolished rice grain vapour** is stimulating tap root growth. Agnihotra ash is stimulating root growth in presence of light. Addition of Agnihotra ash helped better growth in terms of larger surface area of the leaves.*

*Senescence was very fast in presence of polished grain vapour, while unpolished rice grain vapour helps in sustaining plants.*

*The effect of vapour on germination of Spinach seeds kept at various heights after sowing has shown that germination was fastest in the pot kept at the highest point within the easy reach of rising vapour.*

*Rapid cell-division was observed in presence of vapour of polished rice grains. Incidence of insect infestation of a flowering plant was also reduced to a great extent.*

### **Introduction;**

#### **What is Agnihotra?**

Agnihotra a Vedic Yaga procedure followed in the ancient times in India, a process which is known to purify the atmosphere through specially prepared fire.

According to Vedic science, "At sunrise the many fires, electricities, ethers and more subtle energies emanating from the sun extend all the way to the Earth and produce a flood effect at those coordinates where the sun is said to rise" (Paranjpe 1989).

Then yajnyas (ritual, i.e. strictly determined fires, offerings and mantras), as this system of knowledge explains, allows better absorption and transformation of incoming solar/cosmic radiation and its interaction with energies of the Earth, soil, water and living organisms. It is postulated that energies of multiple characteristics ("electricities" in plural) are involved, and at least some of them act at "a more subtle level". Jagdish Chandra Bose had proved by his experimental studies that plants grew better in respond to music. Similarly, as the reports say, Agnihotra makes the plants happy!

Reports from world over have documented the use of Agnihotra for psychological healing, gardening and farming. Agnihotra farming has been adopted in countries like, Poland, Germany etc. to increase the yield and improve the quality of the soil. Agnihotra ash is also known to cure a number of ailments.

The present study attempts to highlight the effect of Agnihotra on plant growth. The “Agnihotravapour” together with “ash” creates a holistic system for plant growth. Apart from India, this potential of Agnihotra is being utilized in countries like Germany and Poland for organic farming where Agnihotra is not only increasing yield, it is saving the environment from the use of pesticide. It kind of produces a sterile atmosphere as proved by many microbiological studies conducted in India. As Agnihotravapour rises and travels a long distance, the positive effects in a field are observed till a long radius. Being rich in nutrients, Agnihotra ash serves as fertilizer..

In Agnihotra, Rice grains are used for sacrifice. Rice grains are considered very sacred, the whole grains are known as Akshata( the one which does not get destroyed) are used in various auspicious religious ceremonies in India. Rice is in fact considered a symbol of fertility and prosperity. The present study tries to

establish this significance through scientific observations and simple experiments.

### **Materials & Methods**

Agnihotra fire requires three inputs:

1. Specific organic substances ( rice grains) burned in a copper pyramid
2. AgnihotraYaga being performed at exact timings of Sunrise and Sunset,
3. And the Vibrational inputs in the form of two short Sanskrit mantras

The fire is lit in a pyramid shaped copper vessel of specific dimensions (Base: 5.25cm\*5.25cm; Area at the open end: 14.5cm\*14.5 cm and height: 6.5 cm) Cow dung cakes are arranged in the vessel along the 4 sides in a way so as to allow for free passage of air. Cow ghee is applied at the lower surfaces of the cow dung cakes, whereas it is applied on the upper side of cow dung piece to be placed in the centre. A triangular cow dung cake piece on which ghee is applied on both sides is put above the central piece. Fire is lit with the help of camphor. A smoke-less fire should be ready before the Ahuti is performed at the exact Sun rise and Sunset timings. At exact sunrise and sunset time, unbroken grains of

rise smeared with little cow ghee are put in the fire along with chanting of Mantras.

Traditionally Agnihotra sacrifice requires intact (unbroken) unpolished brown rice, but for want of brown rice, initial studies were performed using unbroken polished long grained basmati rice.

After unpolished rice was available, Agnihotra and the studies were performed using the unbroken unpolished brown rice grains. A comparison of the effect of the two kinds of rice grain vapour have revealed some interesting findings. Most studies were done on Money Plant (*Epipremnum Scindapsus Aureum*).

Agnihotra was performed on a wooden shelf at a height of 2' 3'' above the ground.

The experiments were performed on a double-height closed terrace having walls on east and north side. The south facing is open fitted with iron mesh. Good amount of Sun is coming through open end on west corner in the months of December-Feb end from 9.00 hours to 16.00 hours, after words. The whole area has good amount of light through out the year.

### **1. Experiment to study the effect of Ash**

For a simple experiment 9 glass bottles were taken in three sets. Although the bottles were of 3 different sizes in a single set, but

each **Set** had similar bottles. The three sets which were formed were named as:

A, B, C

A<sup>1</sup> B<sup>1</sup> C<sup>1</sup>

A<sup>2</sup> B<sup>2</sup> C<sup>2</sup>

In each bottle, 2-3 money plant leaves were transformed from a plant growing in the soil. The experiment was started on **27<sup>th</sup> Feb 2012**. The bottles were kept on a raised platform (3 feet above the ground) in west side of the terrace receiving sun and continued till **15<sup>th</sup> June, 2012**.

Every day after morning and evening Agnihotra, same quantity of ash (measured with Agnihotra copper spoon) was taken and was stirred in 100 ml of water. The **supernatant** was removed and transferred to a new bowl.

**Group A:** The ash was washed with water and allowed to settle. The water was decanted.

Very little but same amount of slurry was added to each bottle in Group A for 15 days.

**Group A<sup>1</sup>:** From the supernatant equal quantities of drop was added to each bottle in the A1 group for 15 days.

**Group A<sup>2</sup>:** In the third category same quantity (very little) of ash as such (without washing) was added to each bottle in the group A-3 for 15 days.

The 2 money plants were taken **as control D and E**. The control D was a flower vase made up of an opaque material and while control E was a bottle made up of transparent material. Observations were taken after every 15 days. Pictures of the plants were also taken.

## **2. Comparitive Study on Two Types of Rice Grain Vapour:**

Agnihotra was performed alternatively with two types of rice grains for one month each, starting on 14-11-2012 and ending with 11-03-2013. Each cycle was started on New Moon's day and continued till No moon's day.

Observations were made on appearance of root growth and shoot growth on plants kept in glass bottles on raised corner ( 3 feet above the ground) in a west corner receiving sun and one control kept at the same position through out the period of experiment. Yellowing of the leaves if any, was also noted, observations were made on experimental plants as well as on the ornamental plants kept on the terrace.

### **General Observations ( Sept-2011-Aug 2012) (Polished Rice Grains Vapor )1.**

Two bamboo leaves kept at height of 5' 7'' for last 4 years on a switch board in a black-colored bottle had two new leaves appear after Agnihotra. Similarly money plant leaves lying dormant for 3 years in a opaque

flower vase had new leaf appeared after transferring to Agnihotra atmosphere.

2. A flowering plant had produced more flowers in Agnihotra atmosphere. The flowers had more petals than flowers produced earlier. The black insects covering the whole plant had miraculously disappeared.

3. A croton plant receiving a sun had shown profuse new whorls of leaves.

4. The Tulsi plant had too many new leaves coming up on the plants. The growth was more in the direction of the sun. A Tulsi plant reduced to a dry wood had also showed new growth. 2 new shoots were produced in an ornamental plant kept in one corner.

5. In the month of **November, 2011** I had gone to Delhi. Before going to Delhi I had put ash also in two of the bottles which had money plant leaves in it. After 10 days when I came back there was too much of roots in one bottle with no aerial growth, and in the other long roots were seen but no new aerial growth was seen. Till the end of

February, no aerial growth was observed in both the bottles. After one month of Agnihotra production of new leaves was observed.

**Comparison between Two Types of Vapour**

1. On *Ocimum Sanctum* (Holy Basil) polished rice grains had stimulated new growth, but a lot of old leaves were falling and degenerating. New plants were even degenerated. However, unpolished rice grain had no such effect.
2. New leaf growth was stimulated in presence of polished rice grain vapour in control plant kept at the same position after 15 days exposure as confirmed by 3 rounds of exposure.

3. Faster root generation and growth was observed between two identical plant shoots, one kept in wide-mouthed bottle and the other in narrow mouthed bottle in presence of unpolished rice grain vapour.
4. No new shoot growth was observed in experimental money plants exposed to brown or unpolished rice grains kept in glass bottles. Tap root growth was observed. However, the same plants when exposed to polished grain vapour had shown shoot growth. This new growth was observed plants kept in narrow-mouthed bottles and one control plant in the soil. However, no new growth was seen in plants kept in wide mouthed bottles.

**Effect of Ash (Observations of the Experiment 27 Feb 2012- 12th June 2012)**

	28 <sup>th</sup> Feb	12 <sup>th</sup> March	27 March	12 April	27 <sup>th</sup> April	12 <sup>th</sup> June
<b>A</b>	3 leaves	3 leaves +one leaf emerging. One root about 4.7 cm was seen, increase in shoot length	4 leaves, one root of 17 cm no branching of the root was seen	4 leaves	5 leaves (including one very small leaf)	5 leaves inter Node difference very less No yellowing
<b>B</b>	3 leaves	3 leaves, sheath for new leaf formation was seen Root length 3,2 cm was seen and one 1 cm	4 leaves, root length 14 cm 7.5 cm no side branching was seen	4 leaves+ One new leaf in sheath	5 leaves including one leaf curled up	5leaves , the new leaf with curled up margins inter-node difference between leaves less No yellowing of the leaves

	28 <sup>th</sup> Feb	12 <sup>th</sup> March	27 March	12 April	27 <sup>th</sup> April	12 <sup>th</sup> June
<b>C</b>	3 leaves	4 leaves, one new leaf curled up in sheath about to form One root about 4.5 cm one more root coming	5 leaves; 4 healthy leaves including one come out from the sheath 15.5 cm and 10.7 cm.	5 fully formed leaves	5 leaves	6 leaves very less intermodal space 2 leaves had turned yellow
<b>A1</b>	3 leaves (on new leaf opening)	3 leaves The root was around 12 cm long. No new leaf	3 leaves, one new leaf emerging The root was around 23.5 cm long	4 leaves	4 leaves	5 leaves one leaf very small and curled up, intermodal difference less No yellowing
<b>B1</b>	2 leaves	2 leaves Root lengths 6.5 and 6.7 No new growth was seen	3 leaves Root length 17 cm and 6 cm	4 leaves	4 leaves	4 leaves, no yellowing
<b>C1</b>	Two leaves	One root 3.4 cm second 5 cm.	2 leaves, no new growth seen root length 8 cm and 15 cm	2 leaves	2 leaves, one new shoot formed but growth inhibited	3 leaves No yellowing
<b>A2</b>	2 leaves	2+New leaf growth seen	4 leaves and one new leaf growth seen Roots fibrous	5 leaves	6 leaves	7 leaves. Good inter-nodal difference. No yellowing but the leaf size smaller
<b>B2</b>	2 leaves	3 leaves No root formation	4 leaves Roots fibrous	5 leaves	6 leaves	8 leaves Yellowing of the oldest leaf
<b>C2</b>	3 leaves	3 leaves, 2 roots 2 cm 1.2 cm	4 leaves	4 leaves	5 leaves	6 leaves (one new leaf formed)
<b>D(Control)</b>	3 leaves	5 leaves. The leaf formed had very long stalk	6 (One new leaf emerging on the 5 <sup>th</sup> leaf)	6 leaves, less intermodal space	7 leaves Now the inter nodal space had increased	9+1 leaves, one new leaf emerging one old leaf had turned yellow
<b>E (Control)</b>	4 leaves, roots were very long	New growth was seen	5 leaves	6 leaves	6 leaves	7 leaves, yellowing of the three old leaves

### Effect on Spinach Seeds

Spinach seeds were sown in the month of **April, 2012**. One pot was kept at a height above the ground and the other at a raised platform. The sprouting of seeds in the agnihotra atmosphere was faster, the seedlings were above ground 5 days time kept at a raised platform. Twin leaves which were produced were divided in 4 leaves instantly. Even the new shoots coming out of the ground was in form of 4 leaves. But the stems were again flimsy and these also met with the same fate as discussed earlier.

#### Observations: ( Spinach Seeds sown on 24-12-2012)

Height	5 feet	4 feet	3 and half feet		Ground level		
					Small A	B	Big
Date of Appearance seedlings	4 <sup>th</sup> day	6 day	6	8	10	11	10
Number of Seeds sown	5	5	10	10	5	5	10
Number of plants produced	5	4	13	11	8	8	16
Appearance	Growing very tall with fragile stems	Normal	Normal	Normal	Did not grew well	Did not grew well	healthy

#### Discussion:

Agnihotravapour produced by polished white rice grains had caused rapid cell division in croton plant. In the whorl of leaves produced there was a characteristic shape of leaf which was produced because the leaves were not separated from each other.

The seedlings produced from spinach seeds were rapidly dividing in polished grain

vapour. The rapid cell division coupled with adequate nutrients explains the increased yield in agnihotra farming. As new leaves were produced in a plant lying dormant for 4 years, the Agnihotravapour of polished rice grain plays some role in helping in the breaking the dormancy. The new leaf generation and yellowing of the leaf was observed simultaneously (the metabolism is altered) unpolished rice grain has no such effect but it had maintained a degenerating

fruit plant in good condition for more than a month, which however on exposure to polished grain vapour had got all its leaves turned yellow on 15 day exposure.

### **Results of the Simple Experiment:**

Both in Group A and A<sup>1</sup> the aerial growth was inhibited. All the money plants earlier had around 3 leaves. In the end, in A and A<sup>1</sup> group the number of leaves never exceeded 5. The difference between the nodes was very less. Growth in A<sup>2</sup> group was the best both in terms of numbers of leaves (around 9) and the distance between the nodes. A water soluble component of ash some how acted to inhibit the aerial growth and stimulated long tap root formation as is evident from looking at the pictures of roots of A and A<sup>1</sup>. Control D which had the maximum numbers of leaves had fibrous roots, a net work of very fine roots as compare to control E ( transparent bottle) which had long tap roots.

One can notice that in each group the growth was best in narrow mouthed bottle, the best being in A2 group.

### **Breaking the Dormancy**

A transparent bottle had too much of tap roots produced after ash was added to the bottle and left as such. No new shoot growth was produced in this plant under optimum condition, however, after exposure to

polished grain vapour new leaf growth was observed in this plant.

It was noticed that 2 oldest **leaves in C** (which had the maximum number of leaves in its group) had turned yellow. Similarly one of the oldest leaves in **control D** had completely turned yellow. However, in **control E** all the old three leaves after which the growth was inhibited had turned yellow.

### **Narrow Vs Wide Mouthed Bottles**

It was seen the shoot growth was maximum in Narrow mouthed bottles. Since the narrow bottles and plant in the soil do not allow much agnihotravapour to percolate in the water less roots are produced. A water soluble component in the vapour is causing root growth in presence of light as more roots are produced in wide-mouthed bottles. The vapours are also absorbed by the leaves. When the pot with spinach leaves was shifted to raised platform the leaf surface was increased dramatically.

Agnihotra seems to have a profound impact on the root-shoot balance. This also explains the production of long roots during the monsoon period when no areal growth was observed despite enough light. A substance dissolving in atmospheric water vapour was causing such changes. These effects were more profound with the use of unpolished rice grains.



### Photographs of the Observations



Appearance of new leaves in a dormant plant

Two opposite leaves had characteristic shape



Fig 4. New leaves and Senescence

Appearance of leaves in the dried stem

Formation of long roots in Monsoon



More shoot growth was associated with fibrous roots while long tap roots arrested areal growth both in terms of new leaves produced and distance between the nodes.

### Acknowledgement:

I am thankful to Art of Living Foundation, Bangalore ( Led by His Holiness Sri Sri Ravishankar) and its team of teachers for introducing me to the Agnihotra Technique.

I also express my special thanks to Institute for Studies in Vedic Sciences for providing the copper pot and other necessary inputs for performing Agnihotra in precise manner.

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