



## Conceptual Study of Dushi Visha in Present Era w.s.r. to Occupational Hazards and Agricultural Poisons

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### Abstract

*Ayurveda* gives more importance to prevention of disease and maintenance of health. As given in *ayurvedic* classic text, a poison is a substance which vitiates normal functioning of *dosh*, *dhatu*, *mala*. Thousands of harmful toxins are present in atmosphere that are ingested by the human beings on daily basis. As described in our *Samhita Granthas*, *Dushivisha* is an intake of toxic drugs which is less potent and remains in dormant state within the body for year together without causing any major harm to body.

As we see in today's era workers working in lead industry like enamel workers, glass blowers, printing works has typical chronic lead poisoning symptoms such as constipation, tremors, menstrual disarrangements etc due to chronic exposure to lead which accumulates in body and produces its ill effect like *Dushivisha*. Arsenic, copper, mercury chronic occupational poisoning also happened due to long exposure of poison working in respective industry. In agriculture, the chronic exposure to OPP, OCP, weed killers like parquat, chlorophenoxyacetates, chlorates used to prevent infection in plants, being sprayed by farmers on daily basis, leads to symptoms like dysphasia, oropharyngeal ulcers, coughing, pain in abdomen, etc. These symptoms resemble to *Dushivisha* like symptoms.

From this article, we may correlate the symptoms of *Dushivisha* with the chronic occupational poisoning and agricultural field exposure to weed killers, which may be helpful to understand the concept of *Dushivisha*. It is very important for us to realize the health hazardous effects of cumulative poison and its proper time to time prevention as well as its proper treatment.

### Keywords

*Dushivisha, Occupational Poisoning, Agricultural Poisons*



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## INTRODUCTION

The term *Dushi Visha* is a combination of two different types of words, *Dushi* and *Visha*. *Dushi* means denatured, attenuated, latent and vitiated. *Visha* means poison<sup>1</sup>. Attenuated and denatured poisons function as latent toxin in the body. In *Ayurveda*, while describing *Visha*, *visha* classified in various categories such as *Sthavar-jangham*, *Gara-Dushi Visha*, etc. All *Acharya* describe *dushivisha* as a slow poison which accumulates in our body, due to its low potency it does not produce acute ill effect but produces chronic illness due to long term exposure to the poison. While simplifying this concept of *DushiVisha* in present era, we can compare the same effect of occupational chronic exposure to human beings with poisons such as lead, arsenic, mercury, copper etc. Workers in such industries, comes direct contact with poisons and that to for decades of duration which ultimately leads to chronic accumulation of the poison in their body and that lead to chronic illness. Farmers working on field also has similar kind of chronic exposure to poisons such as OCP, OPP, paraquat, chlorophenoxy acetate, chlorates which are used as weed killer to prevent infection to the crops. This kind of exposure for longer

duration also leads to ill health effect. In present era we can correlate these two health hazards to concept of *Dushivisha*.

Chronic illness is more alarming than acute illness. In acute infections, there are marked symptoms, so as it is easy to diagnosis and treat. Whereas in chronic illness, the symptoms are vague and difficult to diagnose. In Industrial chronic poisoning the symptoms are not well marked and can be misdiagnosed with other systemic illness. And it can be health hazardous due to wrong diagnosis. So it is very important to learn about chronic cumulative poisoning and its ill effect. This chronic poisoning is can be co related with concept of *dushi visha*. In *Ayurveda*, detoxification therapy is well explained for the treatment of *Dushivisha*. To prove utility of detoxification process, it very important to co relate the *lakshana* of *dushi visha* with cumulative poisoning. In this review article an attempt has been made first to understand concept of *Dushivisha*, its signs, symptoms and line of treatment of *Dushivisha* with special reference to occupational hazards as well as poisoning of various agricultural products.



## AIM

The conceptual study of *DushiVisha* in present era w.s.r. to occupational hazards and agricultural poisons.

## OBJECTIVES

- 1) To collect and analyze the literature review of *Dushi Visha*.
- 2) To collect and analyze occupational hazards.
- 3) To collect and analyze the agricultural poison and its effect on body
- 4) To compare the symptoms of *Dushi Visha* with occupational hazards and agricultural poisons.

## Methodology

To fulfill the aims and objectives of the study this work has been carried out in the following phase wise manner.

- 1) Conceptual study
- 2) Comparative study
- 3) Discussion
- 4) Conclusion and summary

## Concept of *DushiVisha* In *Ayurveda*-

According to *Aacharya Sushruta*, a poison which is vitiated by area, time, food and *Divaswapa* (afternoon sleep) and which vitiate the *Deha Dhatus* are called as *Dushivisha*<sup>[2]</sup>. A part of *Sthavar* (plant poisons) *Jangham* (animal poison) or *KrutrimVish* (artificial poison) which does

not get eliminated from body, but due to digestion or due to antidotes presence their potency get decreased by the effect of *Aatap*(sunlight) *Vayu* (air) (external factors) this cumulative poison stays in body. This low potency poison is known as *Dushivish*<sup>2</sup>.

According to *Astang Samgrah Samhita*, poisonous substances which are very old, contaminated with other anti poisonous drugs, partially destroyed by forest fire, breeze, sunlight, not endowed fully with all qualities of poison by nature itself- all these derive the name *dushivisha*. Because of its *alpa veerya* (low potency), it does not produce acute symptoms (though present inside the body). It gets *Avarana* (covering) with *kapha* and remains in the body for many years. Due to *Avarana* of *Kapha* and *alpa Veerya*, this *Dushivisha* stays in body in *Avyakta Avastha* (invisible state) for longer time<sup>3</sup>.

## *Lakshana* of *Dushivisha*-

- *Purvaroopas* of *Dushivisha*-  
*Nidra* (sleep), *Jrumbha*, *Gurutva*, *Harsha*, *sandhi vishleshana*, *Angamarda* (bodyache) these are the *Purvaroopas* of *Dushivisha* which can be correlated with anxiety, drowsiness, body ache, weakness, joints



weakness etc. premonitory symptoms of *dushivisha*<sup>4</sup>.

- **Roopa of Dushivisha-**

According to *Aacharya charaka*, *Dushivisha* principally vitiate *Rakta* (blood) which lead to *Kitibh Koth Utpatti* (skin disorder) in body, like this *DushiVisha* vitiate one by one *Dosha* and ultimately lead to *Pran-nasha* (death)<sup>5</sup>.

**Table 1** According to *Aacharya Sushruta Lakshana*(signs) of *Dushivisha*<sup>6</sup>

<i>Atisaar</i>	Diarrhoea
<i>TvakaVaivarnya</i>	Depigmentation of skin
<i>MukhaDaurgadhya</i>	Foul smell from mouth
<i>Virasta</i>	Nausea
<i>Trushna</i>	Thirst
<i>Murchha</i>	Syncope
<i>Vaman</i>	Vomiting
<i>SwarVaikrutya</i>	Hoarseness of voice
<i>Dushyodar</i>	Ascitis

**Other Lakshana** includes

If *Dushivisha* is in *Amashaya* (stomach) it will lead to have *Kapha-VaataVikara*, if it is in *Pakvashaya* (colon), it will lead to *VataPittaVikara*<sup>7</sup>.

**Table 2** Other Lakshana

<i>Annamada</i>	Nausea
<i>Avipaka, Arochaka</i>	Anorexia
<i>Mandala</i>	skin blisters
<i>Moha, Dhatukshaya</i>	Weakness
<i>Kotha</i>	Leprosy

<i>Hastapaadshotha</i>	Oedema on extremities
<i>Dakodara</i>	Ascites
<i>Chhardi</i>	Emesis
<i>Vishamjvara</i>	Fever
<i>Unmada</i>	Insanity
<i>Anaha</i>	Distention
<i>Shukrakshaya</i>	Oligospermia
<i>SwaraVikruti</i>	Change in voice

**Table 3** According to *Dhatu* that contaminated by *Dushivisha Lakshana* varies<sup>8]</sup>

<i>Rasa Dhatu</i>	<i>Aruchi, Ajirna</i>
<i>RaktaDhatu</i>	<i>Kushtha, Visarpa</i> (Herpes)
<i>MansDhatu</i>	<i>Mansarbud</i> (Tumour)
<i>Med Dhatu</i>	<i>Med Granthi</i> (Lipoma)
<i>AsthiDhatu</i>	<i>AsthiDantadiVikara</i> (Osteological changes)
<i>MajjaDhatu</i>	<i>TamoDarshana</i> (Blurred vision, black outs)
<i>ShukraDhatu</i>	<i>Klaibya</i> (Infertility)

### Occupational hazards-

#### Lead industry-<sup>9</sup>

Lead is a typical cumulative poison. It is heavy steel gray metal. Metallic lead and all its salts are poisonous. Occupational Industries such as *Sindur* making, batteries, paints, hair dyes, electric cable insulations, ceramics may lead to chronic exposure. The lead poisoning symptoms are Facial pallor-earliest sign, Anaemiapunctate basophilia (*RaktaDhatuDushti*), Burtonian line- on gums (*MukhaDaurgandhya*), Colic and



constipation (*Aanaha*, *Dushyodar*), Lead palsy and encephalopathy (*Unmada*), Sterility of both sexes, Ammenorrhoea (*Klaibya*, *Shukrakshay*), Anorexia (*Aruchi*, *Ajirna*), Vertigo, drowsiness (*Murchha*). All these symptoms of lead poisoning are similar to *Lakshanas of Dushivisha*.

### **Arsenic Industry-**

Arsenic is not absorbed from alimentary canal, when volatilised by heat, arsenic unites with oxygen, and forms poisonous vapours of arsenic trioxide<sup>10</sup>. It is used industrially as an alloying agent, as well as in the processing of glass, pigments, textiles, paper, metal adhesives, wood preservatives<sup>11</sup>. It may be due to accidental ingestion of repeated small doses by those who working in with the metal<sup>12</sup>.

Symptoms commonly observed due to chronic exposure of Arsenic like-

CNS-polyneuritis, encephalopathy

Skin- rain drop type of pigmentation on flexures, temples, eyelids

Nails-Aldrich-Mees lines

Eyes- watering of eyes, photophobia

GIT- nausea, vomiting, abdominal cramps, diarrhoea, salivation

CVS and Kidneys - chronic nephritis, cardiac failure

Hepatic- Hepatomegaly, jaundice, cirrhosis of the liver

Hematologic- bone marrow suppression, anemia, leukemia

### **Mercury Industry –**

If mercury is inhaled or swallowed as vapor, or if applied to the skin or mucus membrane in finely divided state it is absorbed. Industries such as glass blowing mirror manufacturing firms. Chronic exposure to elemental mercury yields classic symptoms like-

Gingivitis and salivation- blue line of gums

Tremors- hatters shakes and

Neuropsychiatric changes

Mercurilentis - is peculiar eye change due to exposure to vapor of mercury

Acrodynia- anorexia, insomnia, sweating, skin rash, photophobia.

All above are occupational hazards effect of industrial poisoning<sup>13</sup>.

### **Agricultural poisons**

More than thousand chemicals are currently used as insecticides and pesticides<sup>14</sup>.

### **Organic phosphorous compounds-**

Organo phosphorous compounds used as insecticides, pesticides on large scale in agriculture industry. Commonly used are, bug soline (malathion), tick (diazion). They are absorbed by inhalation through the skin,



mucous membrane and GI tract. When sprayed in air, absorption in the plants occurs through leaves and stems<sup>15</sup>.

Chronic poisoning usually occurs as occupational hazards in agriculturists.

The main features are -

Muscle cramps, Weakness, Gait disorder, parasthesia, Drowsiness, confusion, anxiety, Peripheral neuropathy, flaccid paralysis, toes drop

#### **Organo chloride compound poisoning-**

Organo chloride compound used as weed killers, herbicides in farms by farmers.e.g., DDT, gamma hexachlorobenzenes( lindane), endosulphan, endrin organochlorines are absorbed through skin, orally and via inhalation. These agents are highly lipid soluble<sup>16</sup>.

Chronic exposure may lead to following symptoms are vomiting, nausea, salivation, diarrhea, Hoarseness of voice, mental confusion, Loss of weight, weakness, ataxia, tremors, Oligospermia, Increased tendency for leukemia, anemia.

#### **Pyrethrins and Pyrethroids-**

Pyrethrins and pyrethroids used as insect repellents, insecticides, pesticides. And Available as sprays, dusts, powders, mats, coils. Most common used are pyrethrum, permethrin, allethrin.

Chronic exposure may lead to following symptoms are Convulsion, Rhinorrhoea, sore throat, wheezing, and with skin contact- blisters, dermatitis, parasthesia.

#### **DISCUSSION –**

Toxicity is nothing but a substance that can harm or alter well being of an individual. Chronic toxicity refers to ability of a toxic substance to cause harmful effects over an extended period usually upon continuous exposure. Chronic exposure of this occupational or agricultural poisons, enter the body in the form of air, water, soil, vapour. And usually it does not get completely eliminated from the body. This repeated accumulation of ingredients lead to cumulative toxicity. In Ayurveda, Acharya Charaka, Acharya Sushruta, and Acharya Vagbhata are opined that Dushivisha is of any type *Sthavar* (plant poisons) *Jangham* (animal poison) or *Krutrim Vish* (artificial poison) which does not get eliminated from body, but due to digestion or due to antidotes presence their potency get decreased. By the effect of *Aatap* (sunlight), *Vayu* (air) *Jala* like external factors this cumulative poison stays in body. This low potency poison are known as *Dushivisha*.



## CONCLUSION

From above study, the *Lakshana* of *DushiVisha* described in *BruhatrayiSamhita*, are near about similar to that of cumulative poisons found in today's occupational and agricultural industry. The concept of *DushiVisha* which described in ancient time that totally resemble in today's lifestyle also, and this shows how deeply our *Aacharyas* studied about poisons and their property, so as in today's era also we can correlate *DushiVisha* with our occupational hazards. It is alarming for us, to have sound knowledge of such silent poisoning, which is hazardous to our health. It is important to eliminate such *DushiVisha* exposure from our lifestyle so that we can live a healthy and poison free life.





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