

## **8. ANCIENT SOIL CLASSIFICATION AND MAINTENANCE OF SOIL PRODUCTIVITY**

### **SOIL CLASSIFICATION**

In ancient times geographical distribution by Surapala was jangala (arid), anupa (marshy) and samanya (ordinary). It is further divided by colour into black, white, pale, dark, red and yellow by taste into sweet, sour, salty, pungent, bitter and astringent. Samanya land was suitable for all kinds of trees.

Rig-veda identified productive and non-productive soils. There were 12 classification based on soil fertility, irrigation and physical characteristics. These soil classifications are as follows :

1. Urvara (fertile)
2. Ushara (barren)
3. Maru (desert)
4. Aprahata (fallow)
5. Shadvala (grassy)
6. Pankikala (muddy)
7. Jalaprayah (water)
8. Kachchaha (land contiguous to water)
9. Sharkara (full of pebbles)
10. Sharkaravari (sandy)
11. Nadimatruka (land water from river)
12. Devamatruka (rainfed)

### **Another classification based on crops suitable**

- a. Vrديهyam (rice (rainfed) / corn)

- b. Shaleyam (kamala (wet) rice)
- c. Tilyam (sesamum)
- d. Mashyam (blackgram)
- e. Maudginam (mung bean)

Sangam, Tamil literature classified soils as mullai (forest), Kuringi (hills), marudham (cultivable) and neithal (coastal).

### **Maintenance of soil productivity**

Traditional soil management practices are the product of centuries of accumulated knowledge, experience and wisdom refined and perpetuated over generations. These practices were evolved within the framework of local technical possibilities. They enlivened the soil, strengthened the natural resources diversify and maintained the production levels in accordance with the carrying capacity of agro-ecosystem without damaging it.

Ancient farmers mostly relied on crop residues, manures, legumes and neem for enriching soil fertility.

In Kirishi - parashara, it is stated that crops grown without manure will not give yield and stressed the importance of manures. He also recommended compost preparation from cow dung. The dried, powdered cow dung is placed in pit for decomposition where weed seeds are destroyed. The time duration for composting is two weeks.

Kautilya mentioned the use of cowdung, animal bones, fishes, milk as manure. Surapala describes the ancient practice of preparing liquid manure (kunapa) prepared by boiling a mixture of animal excreta, bone marrow, flesh, dead fish in an iron pot and then add it to sesame oil cake, honey and ghee. This is clearly evident that present day Panchakavya is prepared in the same way and used in all crops.

**Liquid manure (Kunapa) :** Preparation of kunapa involves boiling flesh, fat, and marrow

of animals such as pig, fish, sheep or goats in water, placing it in earthen pot, and adding milk, powders of sesame oil cake, black gram boiled in honey, decoction of pulses, ghee and hot water. There is no fixed proportion of ingredients. The pot is put in a warm place for two weeks. This fermented liquid manure is called kunapa.

**Green manures :**

In Rajasthan : *Prosopis cineraria* - brings up moisture and nutrients from the underground and leaves used as green manure.

In Tamil Nadu : *Calotropis gigantia*, *Moringa tinctoria*, *Theoprosia purpurea*, *Jatropha*, *Ipomoea Adathoda*

In North India : A traditional weed *Kochia indica* used as green manure.

Ancient farmers adopted crop rotation and inter cropping to restore soil fertility. Mixed or inter cropping with legumes in cereal and oil seed cultivation were widely practices. All these practices adopted in ancient time are now being recommended today under organic farming concept.