

## **f. Indigenous Methods for Agricultural activity:**

### **Crops Management Practices:**

- Wood ash mixed with cow dung ash keeps cold away from the crops like potato (*Solanum tuberosum*), brinjal (*Solanum malongena*) and chilies (*Capsicum annum*), if spread over leaves early in the morning.
- Sowing of summer maize as inter crop with sugarcane in the month of February give satisfactory yield for both the crops equally well.
- Incorporation of paddy, maize and cucurbits stubbles in the field through harrowing increase significant number of earthworms in the field during rainy season.
- Use of green manure of crops like moong (*Vigna mungo*), urd (*Vigna radita*) and sunhemp (*Crotolaria juncea*). These crops should be incorporated at the age of 30-40 days after sowing with the harrow. It will increase yield of crops significantly.
- Press mud of sugar factory adds lime and sulphur in the treated field.
- Sowing of the soaked seeds of red gram in the sour whey (chhanchh) over night, will keep away wilt disease of pigeon pea (*Cajanus cajan*). And 'Dal' made of this treated arhar gives clarified butter taste automatically.
- Mixed cropping of turmeric (*Curcuma longa*) (haldi) + potato (*Solanum tuberosum*) + chilies (*Capsicum annum*), gives good production for all three crops in Bihar.
- Spraying of ash mixed with kerosene oil in the morning (except dew condition), it will protect paddy from 'Phank' infestation.
- A replace of zero tillage was reported by the respondents where, direct broadcast of gram in wet field after soaking overnight and treating with fungicides, and seeds were pressed manually in the wetted soil, here growth of plants were seen horizontally resulting more number of branches per plant which increases the yield of gram that of normal cultivation and lessen the infestations of diseases and insects in the field.

**Source: 8**

### **Grain Storage Practices:**

- Farmers told that they do bagging of wheat in the plastic bag and tie the bag well, after that they insert this plastic bag in the gunny bag by keeping tied mouth at the bottom of gunny bag and sieve the gunny bag finally. By adopting this practice they protect wheat grains from infestation of grain weevil 'Ghun' (*Sitophilus granarius*) and other storage pests.
- They also used 'Neem' (*Azadirachta indica*) leaves while storing wheat grain in order to protect from insect-pests.
- Farmers also use plastic bags of chemical fertilizers like Urea and DAP, for storage of grains to protect from moisture as well as for easy handling during transportation from one place to another place.

**Source: 8**

### **Crop watch practices:**

- "Machan" made from wooden poles with the height of ranges 5'-8' using local grasses and crops residues, paddy straw etc. helps in protecting crops from wild animals like wild cows during night and birds in the daytime.<sup>8</sup>

### **Prediction of rain:**

Farmers revealed that in the villages they predict rain through following indigenous wisdom:

- Wind coming from the south west direction brings heavy rains.
- Clouds of dark colour may cause heavy rains for long period.
- When ants move with taking eggs in their mouth to the safe places indicates heavy rains.
- Sparrow (house bird) taking dust bath indicates rain likely to take place.

**Source: 8**

Soil health and fertility management practices:

- Most of the farmers use farm yard manure and green manure instead of chemical fertilizers which is used by very few farmers. Sunnhemp or dheincha are grown in less fertile lands. It is 30-40 days crop, which is grown before paddy cultivation in July-August or before sowing in the field. These practices are used by farmers to enhance fertility and soil health of less fertile lands especially.<sup>8</sup>
- The various forms of organic matter used are animal dung, crop residues, bio-gas slurry green manures, bio-solids from agro-industries food industries and allied industries. Animal dung is used competitively for fuel purposes too. Composting techniques like vermi-composting, phosphor-composting, N enriched phosphor-composting etc are also used to improve the nutrient quality potential of composts. Vermi-composting is the easiest form of composting which can be initiated on the farmer's field by training and demonstration. The seed bank for earthworms can be set up by the soil testing labs and every gram panchayat can distribute the worms at subsidized costs for preparing vermin-beds on-farm.

**Source: 8**

Livestock Management Practices:

- Farmers reported that they use paste of Bael (*Aegle marmelos*) leaves up to 4-5 days, in order to reduce shoulder pain of working ox.
- A healthy cow was unable to conceive even after giving all kinds of treatments. Finally it was used for ploughing up to three months, and then it became thin and came into heat and got conceived too. Now it is giving milk as cow and also used for ploughing as an ox.
- Farmers revealed that for curing Foot and Mouth Disease (FMD) they use paste of custard apple (*Annona reticulata*) or Sarifa leaves and alum mixed water. They apply the paste on the wounded hooves and bandage with clean cloth. Simultaneously they use alum mixed water to wash the mouth of animal.
- Cows with triangular shape, small legs, broad hind part, narrow fore part, and soft & shiny skin are considered by farmers as high milk producing cow.
- Farmers said that they give 150 ml Sesame oil with hukka or 'Gudgudi' water to animal suffering from 'Aphara' as an indigenous medicine. After taking this animal pass dung soon.
- Burring of tortoise shell near animal shed protects animals from Foot and Mouth disease. This was a common belief among the farmers of Bihar.
- Farmers used to give 2 numbers of 'Nenua' (sponge guard) per day to get cow in heat.
- A mixed dose of 200gms of ginger (*Zingiber officinale*), turmeric (*Curcuma longa*) and garlic (*Allium sativum*) each in month of May, keeps foot and mouth disease away.

- There is a common believe among the farmers of Bihar that to prevent animals from Khurha (FMD) one should apply a few drop of red ink on tender bamboo leaves on Saturday and give it to animals after chanting the mantra “Aage Arjun Pichhe Bhim, Khurha Mare Champaseen! Chhoote Laar Na Phate Khari Duhai Shrikrishna Chandra ki!!

**Source: 8**

#### Human Health Management Practices:

- Two garlic cloves are given to a child if suffering from cough and cold.
- To cure pneumonia Nutmeg (*Myristica fragrans*) or Jayfal is rubbed with mustard oil and given to
- Affected person @ two teaspoonfuls twice daily up to two to three days
- Farmers used to apply a luke warm paste of Turmeric, onion, dub grass and mustard oil for pain relief of any kind of external injury.
- Farmers have a common practice of planting ‘Pipal’(*Ficus religiosa*) and ‘Tulsi’(*Ocimum tenuiflorum*) plant near their residential area as these plants are believed to produce oxygen (O<sub>2</sub>) 24 hours, which is beneficial for all living organism and make air fresh.
- Farmers used ‘Asawgandha’ (*Withania somnifera*) to regain energy and vitality in the body. They used ‘Wakuchi’ to cure leprosy disease. ‘Chitrak kadi’ is used as a good appetizer. ‘Sarpandha’ (*Rauvolfia serpentina*) is used for cure of dysentery and indigestion. ‘Kasturi Bhindi’ (*Abelmoschus esculentus*) is used for curing heart diseases. ‘Bhumi amal’ plant is used in cough and asthma. ‘Gultut’ plant is used to cure scorpion bite. ‘Bael’ (*Aegle marmelos*) is used for all types of stomach problems.

**8. Source: Indigenous Knowledge of Bihar Farmers, O.P. Mishra, A.K. Singh and Sarvesh Kumar, Department of Extension Education, Institute of Agricultural Sciences, BHU,Varanasi-221 005 (U.P.), Journal of Community Mobilization and Sustainable Development Vol. 6(1), 046-049, January-June, 2011.**