

A Case Study :

Stored grain pests and traditional techniques of their control measures



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SUMMARY

Traditional agricultural practices and cultivars have profound effect on modern day agricultural and plant materials. Use of broad spectrum insecticides have lead to eliminate the eco-friendly species of commercially and economically important insects and thus resulted in the unbalancing of natural food chain. The increasing public awareness of the environmental contamination by toxic chemical residues has necessitated the research and development of non-chemical methods. In the present study, different agricultural insect pests and relevant Indigenous Technical Knowledge (ITK) belonging to the different agro-ecological zones of Chopal subdivision of Shimla district, Himachal Pradesh, India have been studied. Rural folk designed their structures and methods for storing grains with locally available materials were unveiled. Various storage yarns like Kuthar, Kothi, Bara, Dobl, Khalda, Matka, Bijdi, Peru etc. used for safer storage of agricultural produce and various traditional techniques including some plant products used by the local people as an additive for prolonged storage of seed grain were explored.

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Indian society is amongst the oldest societies of the world, having rich social, cultural and agricultural traditional knowledge and practices. More than 75% people in India are directly and indirectly depend upon the agriculture for their livelihood. The main challenge is to produce enough food for increasing population. Although, we have achieved the green revolution and increased the food grain production by four folds by using inorganic chemicals but production at the cost of inorganic chemicals have disturbed the natural ecological balance.

Cereals and pulses are the staple food of India and these are stored by the farmers in homes, traders in stores and by government agencies in godowns and warehouses for future years. Crop losses due to insect pests are quite high and vary in developed and developing countries. Significant losses of crop occur even after their harvest by pest attack, particularly in the tropics. After harvesting, grain is dried until their moisture contents are less than 9%, which is considered ideal for storage. Warm and humid

environment are highly conducive for fast growth and rapid multiplication of insect pests of stored grain. Almost all the insect pests of stored grain have a remarkably high biotic potential and within one season, they may destroy 7-10% of the grain and contaminate the rest with undesirable odour and residue. Dampness of the receptacles as well as seed grain also promote the growth of certain fungi on cereals and other grains. Therefore, use of proper receptacles, such as metal bins and improved godowns, can save the stores products from fungus and insect pests both.

In India, there are about a dozen of species of insect pests of stored grains. Our efforts to combat these pests by indiscriminate use of the pesticides have created several environmental hazards and these necessitated the reorientation of our strategies to pests and disease management in an eco-friendly manner. The increasing public awareness of the environmental contamination by toxic chemical residues and public perception about the use of eco-friendly methods in agricultural and public health care programmes have

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