**Lecture 1: Definition and scope of insecticide toxicology**

**Definitions**

“The branch of science concerned with the nature, effects, and detection of poisons”.

“Toxicology is the branch of medical science that deals with the nature, properties, effects and detection of poison. It is, the therefore, the science of poisons (Du Bios Geiling 1959)”

**Branches of Toxicology**

**1) Industrial toxicology:** it deals with the safety of industrial workers from the toxic effects of the poisons.

**2) Environmental toxicology:** it deals with the metabolism, transport, translocation and physio-chemical transformation of poisons in all forms of biological system.

**3) Medical toxicology :** it deals with the effect of poisons in man.

**4) Veterinary toxicology**: it deals with the effect of poisons on domesticated animals.

**5) Insect toxicology:** it deals with such poisons which are used in killing insects without appreciable effect on mammals.

**Scope of insecticide toxicology**

Insect toxicology plays an important role in controlling insect pests in the field of agriculture, forestry and public health. The main advantages of insecticide in pest management programme are afford the only practical control measure for insect pest population approaching at the ETL. They have rapid quarantine action in preventing economic damage. They offers a wide scope of properties uses and methods of application their use in cost effective in after results in substantial return pesticides has assumed greater importance in present high yielding and intensive agriculture system.

Ever since the introduction of DDT as an insecticide after the discovery of its insecticidal properties by Muller and his coworkers in 1939 (Lauger et al, 1944), a large number of organic compounds have been synthesized and introduced as effective pesticides. At present over 900 pesticides are produced and marketed for use all over the world. Even in our country at present over 100 pesticides are registered for pest control purpose Before the advent and widespread use of pesticides, insects, mites, weeds and fungi caused heavy crop losses affecting the economy of the country and that became part of pest supremacy over man's progress in the world's history. But as it stands today the Pesticides are considered to be indispensable if man has to achieve a more abundant supply of food. India has taken a gigantic task in achieving self sufficiency in feeding the growing population. To reach this goal, high priority has been allotted to the production and use of pesticides. Public Health Programmes are vitally dependent upon the use of pesticides whereas these chemicals have helped to increase life expectancy in our country through control of pest vector diseases which had claimed millions of lives in the past. Besides these two major uses chemical pesticides are also used in veterinary practice to control pests infestation in cattle and poultry. In forestry in the past, use of pesticides had been limited for termite control in timber yards etc. Now a days and even more in future the devastation of forests wealth by some pests would involve greater use of pesticides. Recently these chemicals are also used for domestic hygiene purposes to control flies, cockroaches and other harmful insects. It is indisputable that in the near foreseeable future the developing countries need for pesticides will continue to increase for the betterment of the life of the people.