Introduction
In prehistory, as today, mankind acted to avoid ravages by pests. They hugged smoky fires or caked mud on themselves to avoid biting by flies, made containers for food supplies they wished not to share with pests and generally used common sense and available tools to protect themselves.

Documentation is attested to use of ancient pesticides. More than 1000 years BC the Greek Poet, Homer, cited the anti-pest utility of sulfur. The Romans are known to have used salt to destroy the crops of their enemies and democritus, the Greek Philosopher, drew attention to curative effects on blight afforded by applying olive oil residue to protect some diseases.

Beginning of 19th Century, pesticides used was enhanced. Application of pesticides increased when the requirement of pests control was realized in most vulnerable condition.

Synthetic organic chemicals made their debut in the 1930’s; 2-methyl- 4, 6-dinitrophenol (DNOC) was used in weed control and the first patent was issued for a dithiocarbamate fungicide (Zimdahl, 1978). The genesis of the modern era for pesticide use began with the creation of DDT in 1939 during World War II.

Pesticides include all xenobiotics whose specific purpose is to kill another form of life, including insects (insecticides), small rodents (rodenticides), or even vegetation (herbicides). Globally, the use of synthetic pesticides has increased rapidly in the last fifty years due to intensification of farming in order to obtain higher yields. However, over dependence on chemicals not only resulted in a high cost of production but also caused irreparable damage to the environment and posed long term health problems to humans and other forms of life including marine organisms (Xavier et al., 2004).

Since last few decades pests are tremendously increased, so subvert these pest varieties, pesticides came in to the picture, as insecticides, fungicides, herbicides and rodenticides etc. Pesticides, a unique group of compounds, are used to prevent, control or eliminate pests which are a major cause of crop losses in the field as well as during storage. These pests have always been creating multidimensional problems for human beings. The discovery of organic pesticides provided man with a new and powerful weapon for his incessant war against pests. Using pesticides, human beings are benefited to controlling insects, disease transmitting in to rodent’s noxious arthropods as well as pests of plants and protection crop (Tripathi and Srivastav,
However, pesticides have dual actions – they are important to controlling the injurious pests. Simultaneously, they also directly affect the populations of economically important organisms through bio accumulation of food chain. Some times the effects of toxicants may be lethal or sublethal. Lethal effects may result in death of the organism (mostly in acute effects). The most common sublethal effects are behavioral changes (e.g. swimming, attraction avoidance and prey-predator relationships), physiological changes (e.g. growth, reproduction and development), biochemical changes (e.g. blood enzyme and ion levels) and histological changes. Other hand, behavioral, biochemical, physiological and histopathological tests are useful for evaluating the environmental hazard of toxic chemicals, and they may have provided important information on its mode of action (Rand and Petrocelli, 1985).

Environmental pollution through pesticides residues is a major environmental concern due to their extensive use in agriculture and in public health program (Waliszewski et al., 1996). It is almost impossible for us to avoid daily exposure of low level of several different pesticides. Pesticide related problem is increasing more than doubled in the last 10 years. Occupational exposure to pesticides thus become a common and increasing alarming phenomenon, each year around more than 3 million people are poisoned by pesticides, resulting in 2, 20,000 deaths from pesticides contamination (WHO, 1997). Due to our modern life style, we are constantly exposed to a variety of toxic chemicals. The food we eat, the water we drink, the air we breathe, and the environments we live in are all contaminated with toxic chemicals even humans are exposed to such chemicals while still in womb of the mother. In the last hundred years or so, human activities have been destroying the natural system (Lederman, 1996). Pesticides poisoning is an important causes of morbidity and mortality in all countries. (Banerjee et al., 1999). Due to pesticides exposure health related problems are massive and irreversible in some cases. The widespread use of organophosphorus compounds in agriculture is a major cause of food contamination. Through this food contamination humans, animals, fish and even birds being exposed to high levels of pesticidal toxicity. Pesticides are rapidly spread in the environment, posing potential hazards to human as well as animals health. These toxic chemicals, which are toxic to target as well as other non-target organisms, become an integral part of the ecosystem.

The past 50 years, due to pesticides exposure increase the reproductive failiour, increasing the testicular abnormities, testicular cancer, decline in human
semen quality, (Auger et al., 1995; Carlsen et al., 1992) and female reproductive deformities are the major concern of reproductive fall outry. Several researchers have indicated that the decline in sperm counts and fertility is a major cause of maintaining our modern lifestyle, which is totally depends upon pesticides with toxic chemicals. Pesticides are liberated as one of the most potentially harmful chemicals in the environment in an unplanned manner (Rahman, 2003; Jayachandra et al., 2004). It has been documented that chronic use of carbofuran changes the histological structure of male rat reproductive organ (Aziz et al., 2007) and those male reproductive organs plays a vital role in male fertility. Pesticides may induce oxidative stress leading to the generation of free radicals and alteration in antioxidant or oxygen free radical scavenging enzymes such as superoxide dismutase, catalase, glutathione peroxidase, glutathione reductase and glutathione transferase (Ahmed et al., 2000; Smith et al., 2002). The issue of male reproductive toxicity by organophosphate pesticides attracted wide spread public concern. Exposures of organophosphates viz., dichlorvos, malathion (Moustafa et al., 2008) methyl parathion (Amina et al., 2007) and dimethoate (Ngoula et al., 2007) have caused varying degree of male reproductive deformities.

Chlorpyrifos is an organophosphate class of insecticides that displays broad spectrum insecticidal activity against a number of important arthropod pests etc (Racke, 1993). Chlorpyrifos (CPF), (O,O-diethyl-O-(3,5,6-trichloro-2-pyridyl) phosphoro-thioate) is a conventional organophosphorous insecticide, that was registered as a broad spectrum insecticide in 1965. It is used widely to control a variety of pests in agriculture field and animal farms (Chitra et al., 1999). CPF interferes with the acetyl cholinesterase enzyme, which is necessary for normal nerve transmission (Cram et al., 2004). It is used as an acaricide and miticide to control foliage and soil-borne insect pests on a variety of food and feed crops sites. It’s also used in cattle ear tags, Christmas trees, and woodland. Other uses are on fire ant mounds, as a mosquito adulticide, on golf courses, shipholds, boxcars, industrial plants, and processed wood products.

Until 2000, CPF was commonly used as a residential pesticide for fire ants, cockroaches, and other household pests. The U.S. Environmental Protection Agency (EPA) cancelled most home, lawn and garden use products containing chlorpyrifos in mid-2000 based on human health risks. In addition, as of December, 2005, CPF
products were no longer permitted for use in pre-construction termite control but chlorpyrifos is still being widely used in agriculture (CDPR, 2007).

In 2006, Dow Agro Sciences, the major manufacturer of chlorpyrifos in the United States and the EU, began a global phase-out of nonagricultural uses of chlorpyrifos. However, it continues to be used to control crop damage from insects in agriculture. Although chlorpyrifos is registered for use on dozens of different crops; over 60% of chlorpyrifos use in the United States is on 3 crops, corn (39%), tree nuts (15%), and soybeans (9%). Use on tree fruits accounts for an additional 10% of total use. Today, nonagricultural uses account for less than 3% of total chlorpyrifos applications, and are limited to mosquito control for public health purposes and insect control on golf courses. However, other registrants and manufacturers may continue to support residential uses outside of the United States and the EU (David et al., 2008). Chlorpyrifos is widely used organophosphates pesticides, and the low concentration of chlorpyrifos pollution in the environment becomes a common phenomenon (Joshi et al., 2003). There are potential hazards to human health, and it has been reported that chlorpyrifos is linked to human genital deformities (Whorton et al., 1977; EXTOXNET, 1996; Hileman, 1994). It is also found to damage the reproductive system of male rat. Additionally, the exposure of laboratory animals to CPF elicits a number of effects including hepatic (Ichihara et al., 1993; Ihantola-Vormisto et al., 1997) and testicular damage (Afifi et al., 1991). It is true that how to CPF damages our physiological system is not clear (Viswanath et al., 2010). But still chlorpyrifos is one of the most effectively used organophosphate pesticides throughout the world (David and Kevinr, 1998).

Pesticides damage the physiological system of the body. The Ayurvedic treatment is one of them which have a potential role to neutralize the ill effects of the pesticide. Ayurveda is the most ancient science of life having a holistic health approach. Ayurveda is also the most ancient Indian traditional system of medicine. The Ayurvedic system of medication is based on many centuries of experience in medical practice. Ayurvedic medicine originated in the early civilizations of India some 3,000-5,000 years ago. It is the oldest surviving healing system in the world. According to Indian mythology, near about 2500 herbs are present in Ayurveda and they are used to relieve some diseases. Emblica officinalis Garten (syn. Phyllanthus emblica Linn. Euphorbiceae family) is a medicinal plant, described in Ayurveda, commonly known as amla or Indian gooseberry (Sidhu et al., 2011). It’s a small or
medium sized, deciduous tree with smooth greenish grey, exfoliating bark and the fruits are depressed globose, fleshy and obscurely 6 lobed, containing six trigonous seed (Ahmad and Chand, 2009). The Emblica officinalis (amla) is a gift of nature to mankind. According to Indian mythology it is first tree created on the universe (Khan, 2009). Emblica officinalis distributed in the wild or cultivated throughout India and also grow in tropical and subtropical regions including Pakistan, Uzbekistan, Sri Lanka, South East Asia, China and Malaysia (Rajkumar et al., 2011; Khan, 2009). It is an indispensable part of the Ayurvedic and Unani system with amazing remedial qualities. Emblica officinalis is used therapeutically in Indian system of medicine. Fruits of Emblica are used for the treatment of a number of diseases (Nadkarni, 1952; Chopra et al., 1958). In Sanskrit, it is called Amalaki or Dhartiphala. Amla is perhaps the single most often mentioned herb in "Charak Samhita" as rasayan, in the Ayurvedic medicine literature (500 BC). Amla is an extensively used herb in making ayurvedic medicines because of its miraculous actions and is supposed to rejuvenate all the organ systems of the body, it being provide strength and wellness (Kumar et al., 2012). It is a major component of widely use health tonic Chyavanprash that claimed to reduce aging related problems (Ojha, 1988). Both amla and Chyavanaprash, were shown to be potent free radical scavenging agents (Jeena and Kuttan, 1995), thereby preventing carcinogenesis and mutagenesis (Jeena et al., 1997 and 1999). It keeps us away from diseases by boosting our immune system. Fresh fruit is refrigerant, diuretic and laxative. Fruit is also carminative and stomachic. Dried fruit is sour and astringent. Bark is astringent. The herb is also aphrodisiac, haemostatic, nutritive tonic and rejuvenative. Amla increases red blood cell. its one of the highest natural sources of vitamin C (3,000 mg per fruit) (Kumar et al., 2012).

The fruits of EO are widely used in the Ayurveda and believed that its increase the defense mechanism against diseases. For medicinal purpose, fresh or dried fruits are usually used. Unani medicinal system the dried amla fruits are used to treat hemorrhage, diarrhea, dysentery (Parrotta, 2001) cancer, diabetes, liver treatment, heart trouble, ulcer, anemia and various other diseases. Similarly, it has some application like antioxidative, anti inflammatory (Bhattacharya et al., 1999) immunomodulatory, antipyretic, analgesic, cytoprotective, antitussive and gastroprotective also. Additionally, it is useful in memory enhancing, ophthalmic
disorders and in lowering the cholesterol level. It is often used in the form of Triphla (Khan, 2009). Amla powder improves immunity and physical strength and it’s used in preparation sauces, candy, dried chips, pickle, jellies etc (Kumar et al., 2012). Its antioxidant property has been evaluated in many pathological conditions (Thangaraj et al., 2007; Bhattacharya et al., 2000; Sairam et al., 2002). Amla decreased the serum amylase levels and improved histopathological scores (Thorat et al., 1995). It is a very rich source of ascorbic acid. Emblica is found to be a good herbal protector and at the same time nontoxic, reasonable, easily available and bio compatibles botanical material.

Presently fertility related problem is one of the most increasing problem. Most men are suffering from low sperm count, medically known as Oligospermia it’s a very common problem through out the world. Infertility may be caused due to hormonal imbalances, excessive smoking, drinking alcohol, sedentary life style, and also due to consumption of toxic chemicals like pesticides etc. Another factor that contributes to male infertility is the degrading environment. High level of pollution is cause of distortion of the food chain and its leads to damage the sperm DNA. As per many studies, approximately 40% of reported cases of infertility are attributed to issues of the male counterpart. It has been found that the problem of male infertility is curable by the Ayurvedic medicines. The present project aims at to study the toxicological effects of a specific organophosphates pesticides chlorpyrifos in male reproductive system of rat and their possible recovery by the use of aqueous extract of fruits of Emblica officinalis.