

# Problems with use of pesticides an environmental sciences essay



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Since more than 4 million years and insects found on the surface of the earth attack humans and damage it to occur to him directly and indirectly, and they began trying to get rid of these insects, consider how to exterminate them and get rid of the harm caused was trying to get rid of manual methods by combining, killing and The first use of pesticides is the use of chemical toxic compounds of arsenic, especially arsenate of lead and other heavy elements, and was the third arsenic oxide compounds very toxic to insects and humans and is still used in some third world countries and came article cyanide and mercury compounds it was all in the seventeenth century until the nineteenth.

Plant smoke and the nicotine extracted from this and used by man in the fight against insects, even in the beginning of the twentieth century and, unfortunately, despite our knowledge of the toxicity of this article but many people smoke cigarettes, consisting of nicotine.

Rotenone draw the human material and its derivatives from the roots of plants and This material was used in the fight against many of the insects e. g. this roots of this plant was imported to USA 10 million tons in 1951 fell to 6 million tons in 1955.

In the early forties and the beginning of World War II, we entered the first signs of organic pesticides and are Chlorinated hydrocarbon compounds and was considered a leap in the world of pesticides when it was discovered compound DDT it was magician in the period in the rescue German armies and the European diseases of plague, which toppled a number of soldiers than of died because of war have spread among the soldiers as fleas and

lice, and no way to get rid of these insects only pesticide DDT and has been for Discovered Award superpower,

Was followed by Aldrin and chlorine compounds are highly toxic and impact the rest of the long as possible to remain in the environment for many years. Even our bodies and our blood contaminated with these materials, despite ceased to be used since the early eighties;

these materials are still transmitted from mothers through milk and umbilical cord and inherit these toxins from generation to generation because of accumulation in all living organisms.

However Discovery was made in the world of pesticides are organ phosphorus compounds, and during the Second World War, like chlorinated carbon compounds, which are still in use in tones this moment in all our lives in fields and homes and farms, even in our store of e. g. wheat and beans.

## **Pesticide pollution**

pesticides is a substance or substances mixed use to prevent or minimize damage caused by insects and fungal infections and jungle plants (herbs) and rodents, birds, pigs, rabbits and others.

And may have contributed to these substances in increasing and improving production through the prevention of agricultural pests in different fields, warehouses and stores, also played an important role in reducing diseases transmitted to humans and animals by insects and rodents such as malaria and typhoid, and plague and other diseases and external parasites and other internal spite of the many benefits of pesticides they work on the pollution of

the environment, and stability chemical high for some pesticides, chlorinated and mercury can stay for a long time in nature, the disassembly after use, which increases the risks and also accumulate in the tissues of plants.

Causing fungi and bacteria and different insects many of the risks of agricultural crops and then move this to the injured and pest animal and human, with that there were many insects, bacteria and fungi with great benefit to the objects, and the ecosystem.

It is also undoubtedly helped the elimination of pesticides, large quantities of the problems that occur by insects, but after the accumulation of these pesticides in the tissues of these organisms have become pesticide problem facing the world as a whole appeared significantly impacts of various negative.

Hydrocarbon pesticides Chlorinated Hydrocarbons, The scientists have done the installation of many different pesticides and containing carbon, hydrogen and chlorine so named these compounds with Chlorinated Hydrocarbons and DDT and from which Aldrin and chlordane and other Chlordane but it turns out after a period of problems.

These include:

highly toxic: These compounds are not toxic optional thus affecting the beneficial organisms from fish and birds and other and from examples in the state of Illinois in the United States used these compounds to eliminate the beetle Japanese were advancing towards the west, causing death many migratory birds and migration and the death of the remaining 90% of cats

poisoned as many farms of cattle and rabbits, also found they kill the predatory insects which control the numbers of harmful insects, as well as to accumulate in the tissues of the organism, leading to destruction of tissue anatomically and functionally.

Slow disintegration: Many materials have the ability to bio-disintegration while pesticides that have been manufactured with a very slow dissolution rate of 10-15 years old, it remains toxic all that time, the problem is that spraying almost every year.

dissolve in fat: Any form compounds with fat and this makes objects that are deposited in tissues Gallery of death when feeding on this fat, such as migratory birds when they burn stored fat for energy

## **Problems caused by pesticides**

despite the refrain from the use of certain pesticides for more than 10 years in plant grown in the land that still contains the remains of these pesticides, and the biggest problems facing the export crops to contain pesticide residues, the soil which exists by the pesticide will moves them to the roots and fruits then to animals and humans. Therefore difficult to obtain on a sample of plant products do not contain the remains of pesticides. As are pesticides for food during the phase of storage and preservation as a result of pesticide spraying stores or gaseous or vaporized pesticide mixing seeds in high concentrations of pesticides which are very dangerous when you use food.

Impact on the plant: found that the use of pesticides may also result in a

negative impact on plants in terms of changing the color of paper or the <https://assignbuster.com/problems-with-use-of-pesticides-an-environmental-sciences-essay/>

intensity of transpiration and influence on the process of photosynthesis, e. g. pesticides used to exterminate the weeds on the sides of railway lines and public roads and follow this pesticide impact in two ways.

Contaminated surface water and groundwater with pesticides in several ways

( Agricultural drainage water contributes to the pollution of river water and pesticides seep into the groundwater, Factories dumping waste pesticides in the water, Spray planes contribute directly to the pollution of rivers, Buried waste plants in the sea ).

It is intended to water pollution damage or corruption to the quality of water leading to an imbalance in the system in one way or the other, thereby reducing their capacity to perform its natural role, and makes it lose a lot of economic value and cause health and environmental damage. Contaminated water through a variety of human waste (animals, vegetables, or industrial chemicals).

the most important sources of clean water away from pollution is wells, as a result of what the soil of a nomination for its waters, but this belief has begun to change now in many cases, the wells used close to the surface of the Earth, which increases the chance of contamination biological or chemical.

The deep wells, which increases the depth of 40-50 feet, it has less chances of contamination, because the water going through in this situation on the

porous layers, working in the water filtration and clearance of most of the impurities.

However, in the past few years, reveal that some pesticides and chemicals began to find their way into water-bearing layers in the ground.

the exposure of large stocks of the land of fresh water to pollution from many sources, such as agricultural activities, where the use of water to the old ways, such as immersion or excessive use of water, with the misuse of pesticides and fertilizers, to increase the concentration of salts and metals, nitrates in groundwater, especially if there is no modern agricultural drainage systems.

Contamination of red meat, eggs and fish Pesticide residues have become involved in the food chain any move from the soil to the plant and into the animal, and up to the blood and ultimately into the milk and focus on meat and fat as a result of the inability of the devices demolition body to break down the remains of pesticides output.

The results show that a high proportion of meat to contain pesticide residues Chlorinated chemical not be used for several years.

As for fishes the pesticides get through the exchange of agricultural pollution of freshwater resources and pollution. Most fish are capable of concentration of pesticides in their meat.

Impact on soil: the pesticide into the soil after spraying, which affects the soil structure and the objects of the bacteria attached to the nitrogen and potential access to groundwater with rainfall and soil erosion.

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**Fig:**

Ref: [http://eng.me.go.kr/content.do?method=moveContent&menuCode=res\\_kid\\_wat\\_sic\\_why](http://eng.me.go.kr/content.do?method=moveContent&menuCode=res_kid_wat_sic_why)

Impact on Beneficial insects: the pesticides do not discriminate between objects of harmful and beneficial and lead to the death of insects which are beneficial, cause an imbalance in the ecological balance of natural environments and then lead to the spread of harmful insects and are growing also accumulation through feeding on plants contaminated with pesticide.

Impact on the human: it is possible that pesticides cause many symptoms, including their impact on the nervous system, as well as cancer, especially liver and comes through accumulation in plants and animals and then human.

**Insect resistance to pesticides**

Insects become resistant to pesticides significantly and became resisted through low speed entry into force of the pesticide into the body of the insect, where the insects to deliberate adaptations that limit the entry of the pesticide to the insect's body through the mouth and respiratory system.

Store the pesticide in the tissues of none sensitive, it was found that some of the insecticides DDT are stored in fatty tissue instead of sensitive tissue.

**Practical solutions for pesticide pollution**

A set of methods require the use of living organisms in order to reduce the damage caused by other organisms harmful to humans or animals or plants.

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## Methods of biological control

1 – The use of predatory insects, birds and other

2 – use spam, viruses and fungus

3 – use of the materials attractive or repellent

4 – sterilization of harmful insects (disable the reproductive system)

In the case of vegetables and fruit using washing process

its common operations in the processing of fruits and vegetables, and some research has pointed out that 17% of the DDT, while it did not succeed in removing any amount of parathion.

In the case of meat and fish need to get rid of chicken skin, liver and fat before cooking, where pesticides are concentrated there.

In case of environment many toxic chemicals vanish under UV light and turn into compounds less toxic and a danger to the environment from the original compounds. The rate of vanishing of pesticides in water bodies is high near the surface and less the more depth; this is reflected on the half life and play of light intensity and duration of sunshine role an important role in this regard as different rates of vanishing of the DDT Include interactions in different seasons.

## **Pesticides and their application**

And is available at the present time a lot of methods and tools apply

pesticides to control pests of various kinds. For the good of the pest control

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is required the distribution of the pesticide on the homogeneous distribution in space to be provided by the pesticide, and the application process in order to be successful must be a good choice of the means or the machine that applied the pesticide, It needs to be suitable for this process. The choice of the right tools for the application of the pesticide on the circumstances of the application itself. in the form of the pesticide formulation, and on the space or the space to be by the application, as well as the general conditions that may be prevalent and is facing the port for the application process.

Sometimes prefer to use the machines with a large force to perform the operation in certain circumstances, may change these conditions to be the best and appropriate for her to use machines and the application of this small manual is available from many machines and devices the application of pesticides. Some are different kinds of guns.

## **Fig: 2**

**Ref: <http://www.ces.ncsu.edu/johnston/homehort2/howto.html>**

machine guns are more known tools for application of pesticides used in agriculture because of the ease of operation, and accuracy and precision that characterize the application of pesticides and the main function of the machine is a sufficient means of spraying droplets minutes, is scattered or distributed on the surface of plants or the space they are launched, and operate at the same time to control the amount of fluid sense of them to give a certain amount of it on the area sprayed.

Spray planes Increasing the use of aircraft in the application of pesticides in recent times, because of their advantages are not available in the mass  
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application of other, as the advantage of spraying aircraft with high-speed, precision large, and cover vast areas, in a relatively short time, cannot be achieved by terrestrial means, the other with the same precision, efficiency and speed.

### **Fig: 3**

Ref: <http://www.betterlivingshow.org/EarthTalk-green-jobs-pesticides-fertilizers-herbicides-pollution.htm>

#### Spraying pesticides through irrigation

Abounded at the present time the number of pesticides that can be applied by means of modern irrigation, especially in crops that rely on irrigation pivot Central Pivots, this method is known as Herbigation since the first use of this method was with herbicides, but the widespread use of this method in the application of agricultural chemicals in general has called now the name of the irrigation chemical Chemigation, where they are spraying this way, the development means the pesticide in the fertilizer tank to the organs pivot, and then injected with the irrigation water through the arm pivot , to reach sites that link to irrigation water

Application of pesticides by means of modern irrigation is the renewal and development of the idea and applications of the old through flood irrigation, where placed a container of liquid pesticide, equipped with a valve on the breach of irrigation field, controls the flow of liquid pesticide from the vessel to the water current carried to various parts of the field, and to avoid the disadvantages of the application of pesticides through surface irrigation

(flood irrigation), which is usually accompanied by irregular distribution of <https://assignbuster.com/problems-with-use-of-pesticides-an-environmental-sciences-essay/>

irrigation water, in addition to the bad environmental effects could result from wastewater contaminated with pesticides left over from the flood irrigation.

The advantages of the application of pesticides and other agro-chemicals with irrigation water compared to ground through the application means (e. g. spraying) or a means of flight (aircraft) the following:

1. Precise timing of the application of pesticides.
2. Ease of mixing pesticides with soil and stimulate their effectiveness.
3. Avoid soil compaction and destruction of the automated plant.
4. Minimize the risk of pesticides on workers and farmers.
5. Reduce the need of chemical requirements.
6. Reduce the environmental impact of pesticide.
7. Lack of the economic costs of pesticide also

In fig 4444 it show Danger of Groundwater pollution by pesticides Country

red: danger of pesticide pollution in GW reported by countries

green: no danger of pesticide pollution in GW reported by countries

### **Fig: 4444**

Ref: <http://www.eea.europa.eu/>

In fig 1 it show the breakdown of global agrochemical usage and market value in 1999

**Fig: 1**

Ref: Agricultural pollution: environmental problems and practical solutions,

By Graham Merrington