Effects of soil pollution on plants and ecosystem

1. Effects of soil pollution on plants

Effects of soil pollution on plants include the following

1.1. Effects on the fertility of plants

The fertility of plants is likely to be reduced due to the issue of soil pollution. Since plants usually are quite sensitive to changes in their natural environmental conditions, soil contamination can lead to a decline in fertility of the affected plants.

1.2. Effects on growth behavior of plants

The growth behavior of plants can also be affected by soil pollution. Since plants usually require a stable level of acidity and also of nutrient supply, a change in these parameters through soil pollution will likely lead to adverse effects on the growth of plants.

1.3. Reduction in crop yields

Soil pollution is also likely to lead to a reduction in crop yields. When the natural environments of plants are contaminated with harmful chemicals, they are usually not able to adapt to these new circumstances in a short period of time. Thus, also the crop yields will be lower compared to an environment without pollution.

2. Effects of soil pollution on ecosystem

Effects of soil pollution on ecosystem include the following

2.1. Effect on microorganisms

Microorganisms are harmed by soil pollution since they are usually quite sensitive to a change in their natural environmental conditions. Through the contamination of soil with heavy metals and other harmful substances, these microorganisms are often not able to adjust to the new circumstances appropriately and thus will die off.

Since all-natural processes are connected with each other, the decline in microorganisms may cause chain reactions which turn out to have great adverse effects on the whole environmental system.

2.2. Effects on animals

All kinds of animals are affected by soil pollution. Many animals eat crops or plants in order to meet their energy demand. However, if the soil and therefore also the crops are contaminated, the animals eating the crops and plants get contaminated as well. Similar to the adverse effect on humans, soil pollution can also have severe health effects on animals.

2.3. Effects on aquatic life

Aquatic life is indirectly affected through soil pollution. Since through the excessive use of pesticides and also through the emission of toxic gases from industrial processes, harmful chemicals will eventually reach our rivers, lakes and seas. Thus, sea animals and plants will also be adversely affected by soil pollution.

2.4. Contamination of the groundwater

If the soil is contaminated with chemicals and other harmful substances, it is just a matter of time when these chemicals will reach the groundwater. Through heavy rainfalls, these chemicals will eventually be washed trough the soil and thus contaminating our groundwater.

2.5. Increase in algae

Soil contamination also leads to an increase in algae production. Since fertilizers contain substances which support the growth of algae, when these chemicals eventually end up in rivers and lakes, these water environments will face an increased production of algae. This in turn is likely to lower oxygen levels which can cause the death of many water animals.

2.6. Changes in pH-levels

Soil pollution also leads to a change in pH-levels. The pH-level measures the acidity of an environment or a substance. For example, if the soil is contaminated and the pH-level changes

because of this, plants will usually suffer since they are quite sensible to changes in pH-levels and crop yields are therefore likely to drop due to this issue.

2.7. Effects on soil structure

The structure of the soil itself can change due to a contamination with certain chemicals. This can lead to an increasing probability for erosion and may also harm the fertility. Acidic soils are inhospitable to several microorganisms that improve soil texture and help in the decomposition of organic matter. Thus, the negative effects of soil pollution also impact soil quality and texture.

2.8. Air pollution

Through the aeration of soils, soil pollution may also contribute to an increase in air pollution. Since the volatile contaminants in the soil can be carried away into the atmosphere by winds or can seep into underground water reserves, soil pollution can be a direct contributor to air and water pollution.

2.9. Acid rain

Soil pollution can also contribute towards acid rain (by releasing huge quantities of ammonia into the atmosphere).