CAN PLANTS BE POISONED?

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The quick answer is yes, they can be poisoned and die from it, just like humans and other animals. The process is called "phytotoxicity" and it is defined as the capacity of a compound to cause permanent or temporal damage to plants. A great variety of substances can cause phytotoxicity including: heavy metals, herbicides, fungi and plant produced substances, among others. Even some plants, like the *Larrea tridentata*, are infamously known for poisoning the neighboring plants just to have more resources available

An example of a compound which might lead to plant poisoning is cadmium (a heavy metal). Plants growing in soils with a high cadmium concentration will start showing symptoms of poisoning after just a few weeks. Some effects of cadmium phytotoxicity include plant stunting (dwarfing and incomplete development of the plant), leaf rolling, chlorosis (the loss of leaf color) and eventually, plant death.

However, sometimes plants might adsorb pollutants and show no symptoms of being poisoned as they also have a tolerance threshold. According to a study made by da Rosa Corrêa et al. whose research was based on Lettuce (*Lactuca sativa)*, Oats (*Avena sativa)* and Field mustard (*Brassica campestris)*, cadmium starts to affect plant development at concentrations above 3mg of cadmium per kg of soil.

But not only hazardous compound can affect plants. Plants can also be poisoned by less toxic compounds such as the same nutrients which help them flourish. Plants usually require phosphorous and nitrogen compounds to thrive. They usually get phosphorous and nitrogen from the soil or they can also get them through fertilization. However, if they receive an overload of nutrients, such as what they will get if over fertilized, they will also be poisoned. As a first symptom leaves will turn yellow and start to dry out and they could eventually die if the dose was too high; as the nutrients cannot be washed out of the soil.

This brings us back to what was already discussed in previous entries in this blog: environmental pollution and degradation does not only affect human life quality and wellbeing but it affects the whole ecosystem. Plants and animals are, therefore, a very good indicator of how healthy an ecosystem is. When we pollute the water, air and soil with toxic compounds usually animals suffer the hardest consequences but if we look closer we will realize that plants also suffer the consequences.