

ALLELOPATHY UNDERSTANDING AND ITS POSITION IN ECOLOGY INTERACTIONS

Čaboun V.

Forest Research Institute Zvolen, T. G. Masaryka 22, 960 01 Zvolen, Slovakia
e-mail: Vladimir.Caboun@fris.sk

Allelopathy is relatively new as a science, even though statements were made about the phenomenon over 2300 years ago. Theophrastus (ca. 300 B.C.E.), a student and successor to Aristotle, wrote about allelopathic reactions in his botanical works.

The term Allelopathy was first defined by Molish (1937), combining Greek words "αλληλων" – *allelon*, which means "of each other" and "παθος" - *pathos* which means "to suffer", or "to affect".

Classic and more wide allelopathy understanding:

The term was coined by Molisch to refer to biochemical interactions between plants of all kinds, including microorganisms.

In classic opinion allelopathy refers to the chemical inhibition of one species by another. The "inhibitory" chemical is released into the environment where it affects the development and growth of neighboring plants.

Allelopathic chemicals can be present in any part of the plant. They can be found in leaves, flowers, roots, fruits, or stems. They can be excreted into atmosphere, water medium, also be found in the surrounding soil.

Allelopathy has traditionally been considered only the negative chemical warfare of one plant upon another plants out of its space. Modern research suggests that allelopathic effects can be both positive and negative, depending upon the dose and organism affected.

Dr. Kim D. Coder bring forward in 1999, that „Allelopathy in trees and forests is an important health care issue. Allelopathy is the chemical modification of the site by an individual to enhance interference effectiveness. Allelopathy also involves the ecological communications between species which can positively or negatively influence growth, behavior, reproduction, and survival of associated species.“

In view of the laws of thermodynamics and continual conversion or transformation chemical compounds to energy is not correct talk only about chemical effects in my opinion. **Allelopathy is the active or passive effect of chemicals and energy released into the environment which influences other organisms.**

Allelopathy from ecological point of view is a multi-disciplinary subject involving Organic Chemistry, Plant Physiology, Botany, Microbiology, Soil Science, Plant Ecophysiology, Ecology, but also physics etc. This makes the topic very difficult and also very challenging.

The poster bring the position of allelopathy in new ecological classification of interrelationships.