

ALLELOPATHIC EFFECTS OF JUGLONE

Summary

Allelopathy is a common phenomenon occurring in the plant's world and resulting from long term co-evolution. Plants growing in their neighborhood interact with each other on the way of inhibition or stimulation affecting environmental biodiversity. Allelopathic effects of plants from Juglandaceae family are well distinguished in natural environment. Such trees synthesize various allelochemicals, among which the most important is juglone, a compound belonging to the class of naphthoquinones. The juglone in acceptor plant's cells generates oxidative

stress and influences the expression of genes, which disturbs the proper functioning of many biochemical and physiological processes. Allelopathic modifications at the molecular level are reflected in the phenotype of plants, resulting in inhibition of seed germination and seedling growth, as evidenced for many plant species. Therefore, juglone in the future might be used as a natural herbicide. Currently, this compound is used in the cosmetic industry and in medicine; hopefully, it may also appear to be useful as a possible anticancer drugs component.