

PIGMENT SEASONAL VARIATIONS IN GRAPEVINE (*VITIS VINIFERA L. CV. PINOT NOIR*) LEAVES

Rubén OCAMPO-TORRES

*Laboratoire de Géochimie Bioorganique, UMR 7177 (CNRS-ULP), ECPM, 25, rue Becquerel, 67200
Strasbourg, France.*

Chlorophylls and carotenoids are the pigments present in deciduous tree leaves. Chlorophylls are responsible for the harvesting of light and carotenoids have a vital important function as photosensitizer. Every year, during the autumn, we can observe, even from space, one of the most spectacular natural phenomena; the autumnal coloration of foliage in some trees. It is due to the progressive seasonal loss of chlorophyll coinciding with the partial retention of carotenoids and the new synthesis of red anthocyanins. The biosynthetic pathway of chlorophyll is now well understood. However, knowledge of the degradation of chlorophylls is much more limited. By the way, the role played by anthocyanins is not very well understood. In order to get a better idea about that we are studying the seasonal variations of pigments (chlorophylls, carotenoids and anthocyanins) in leaves of several deciduous trees. In this work we will present the results concerning a grapevine (*Vitis vinifera L. cv. Pinot noir*) plant. Leaves of grapevine (*Vitis vinifera L. cv. Pinot noir*) plants were collected monthly from April to November 2004 near Ribeauvillé, France. We follow the pigment constituents on the leaves during the whole year with a special interest on the first oxidative stages of chlorophylls and chlorophyll degradation products. Pigments were monitored by HPLC, UV-Vis, MS, LC-MS (APPI mode) and NMR.

Chlorophyll degradation products identified will be compared to chlorophyll degradation products related to senescence and death in marine phytoplankton as well as those observed during the early diagenetic transformations occurring in sedimentary organic matter. We also observed that some variations on the composition of pigments may be a response of the plant to atmospheric changes (temperature, dry or rainy periods, etc.) or to microorganisms attack.

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