The Root of Wild Horseradish. Contents of the Juice and Peroxidatic Activity

Oleg A. Ermakov, Alexander I. Panassenko

Tambov State University after G. R. Derzhavin, Biochemical Center.
Tambov, International str. 33.

The peroxidases are ubiquitous in plants. Of all the peroxidases most time and effort have been devoted to horseradish peroxidase - the enzyme obtained from horseradish roots. The so far available knowledge of other peroxidases, especially of their prosthetic groups and purity numbers, is far from complete. The quantitative study of different properties of peroxidase requires highly purified enzyme preparations, a unique safe methods analysis and a good assay method that is not accessible for the crude vegetable substrata in present time.

Horseradish peroxidase consists of 308 amino acid residues. There is also a ferricheme prosthetic group and eight neutral carbohydrate side chains. The carbohydrate contents is fast 18%. Two calcium ions are bond per peroxidase molecule. The impact of this native component of the horseradish root juice on enzymatic ativity is unknown.

Purpose of this work is to study the comparative activity of the numbers of crude extracts from horseradish roots obtained by different pathways. For this purpose the roots of wild horseradish were gathered in spring and autumn in different parts of Tambov region. The roots obtained for the study vegetate in different countryside and vary in their nature. In this connection, it is interesting to observe a considerable impact of the countryside on the juice consistence.

We made the estimation of peroxidase activity of the samples on the different stages of purification of the juice and determined the contents of albumen, iron, carbohydrate and polysaccharides in all the samples. It is important to note that the bond between the albumen contents and peroxidatic activity of the juice of horseradish roots is not observed.