

P22: STUDY OF MINERAL AND PHYTOSTEROL COMPONENTS OF ANCIENT ITALIAN BEANS SPECIES

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Legumes represent an important component of human diet and are food resources that offer various health benefits. Of all foods, legumes most adequately meet the recommended dietary guidelines for healthful eating; they are high in carbohydrate and dietary fibre, mostly low in fat, supply adequate protein while being a good source of vitamins and minerals. Minerals are inorganic substances, usually required in small amounts from less than 1 to 2500 mg per day, depending on the mineral, present in all body tissues and fluids and their presence is necessary for the maintenance of certain physicochemical processes which are essential to life.

Another important feature of legumes is the content of phytosterols that are among the more extensively studied functional food ingredients. They have been shown to compete with dietary cholesterol to be absorbed by the intestine, and to offer protection against low-density lipoprotein (LDL) oxidation, therefore being considered important dietary components for maintaining good heart health. Phytosterols additionally possess anticancer, anti-inflammatory, and anti-oxidation activities.

The present study on the mineral and sterolic components of dry ancient Italian cultivars of beans would be of great interest to enhance the nutritional characteristics of the ancient species of beans. All the leguminous studied are rich in minerals like calcium, potassium and particularly magnesium, and, with low levels of sodium. Manganese has the highest concentration between essential elements.

The phytosterols content of four ancient beans cultivar ranged from 8.79 mg/kg dw (campesterol) to 208.62 mg/kg dw (β -Sitosterol). β -Sitosterol was found predominated in all cases, even if with great differences between the different beans species.