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TAL 797 – Seminar

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AVAILABILITY AND BIOAVAILABILITY OF IRON IN BEANS

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Level: ( ) MS (X) DS

A nutrient, of a food suitable for consumption, must have adequate quantities available. That available nutrient is not always fully bioavailable. Bioavailability refers to the proportion of the nutrient that is effectively absorbed and reaches the circulatory system and is accessible to promote its activity in the body. Iron is a trace element more abundant in nature, being important for DNA synthesis, oxygen transport, cellular homeostasis and energy metabolism. Iron is a transition metal that exists in reduced ferrous (Fe2+) and oxidized ferric (Fe3+) forms. As the transmembrane transport of iron occurs in reduced form, the reduction reactions of this mineral play an important role in its metabolism. The main reason for iron deficiency is the low availability of the mineral in the diet. The main sources of plant-based iron are beans and whole grains. Beans are a vegetable that has high nutritional quality providing proteins, vitamins and minerals such as iron. In the Brazilian diet, especially in rural areas, legumes (especially beans) are present as a basic food crop and common beans (Phaseolus vulgaris L.) are the most produced and consumed. There are factors that can influence the availability and bioavailability of iron in foods, such as beans. In bioavailability dietary factors such as ascorbic acid, can increase the absorption of iron and also have antinutritional such as phytates, tannins, lectin and polyphenols that can

decrease the absorption of the mineral. Methods of processing and cooking with beans can also influence the availability and bioavailability of the mineral in this food. Therefore, it is important to pay attention to dietary factors, processing and cooking that can affect the availability and bioavailability of iron in an important food such as beans.

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