

## COMPARATIVE STUDY OF PHYSICOCHEMICAL COMPOSITION, ANTIOXIDANT ACTIVITY AND MICROBIOLOGICAL CHARACTERISTICS OF NECTARINE POWDER OF BULGARIAN ORIGIN AND FLOUR MIXTURES WITH ITS PARTICIPATION

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### Abstract

Local food research contributes to the improvement of the food culture of the nation and to the development of new products. The current scientific paper presents a comparative study of the physicochemical composition, antioxidant activity and microbiological characteristics of the nectarine powder and flour mixtures with its participation.

The flour powder was obtained by drying the sliced nectarines through a heat pump dryer in selected conditions - 8h at 420C and finely they were grounded using a blender. The floury mixtures were made with 70% of basic flour (white wheat flour, whole wheat flour, oat whole flour and Einkorn flour) and 30% of nectarine powder. International Standards such as ISO, AOAC and national standard methods (Bulgarian State Standards) were used for all of the chemical and microbiological analyses. The antioxidant activity was determined using the DPPH (1,1-diphenyl-2-picrylhydrazyl radical), ABTS (2,2'-azino-bis (3-ethylbenzothiazoline-6-sulfonic acid), FRAP (Ferric Reducing Antioxidant Power Assay) and CUPRAC (CUPric Reducing Antioxidant Capacity) methods and they were expressed in mMTE/g DW.

The results shown that the nectarine powder own a rich composition and can add as a source of bioactive compounds for improve the nutritional values of the based flour of white wheat, whole wheat, oat and Einkorn. The new obtained floury mixtures were designed for four different sponge cake production with specific nutritional values.

In summary, the presented data a great possibility for developing new products with bettered micro and macro composition based on the local fruit powder. And remarked the importance of thorough research on the regional food product.

**Key words:** Nectarine, Physicochemical composition, Antioxidant activity, Microbiological characteristics, bioactive compounds, functional food.