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**Food Technology,  
Quality and Safety**



**ABSTRACT BOOK**

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## VANADIUM IN COMMERCIAL FEED PHOSPHATES AND POULTRY FEED

Milica Živkov Baloš<sup>1\*</sup>, Željko Mihaljev<sup>1</sup>, Sandra Jakšić<sup>1</sup>, Nadežda Prica<sup>1</sup>,  
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Vanadium (V) is essential element for poultry nutrition. Relatively low levels of V (< 10 µg) is known to reduce growth in chicks and Haugh unit value of eggs. The National Research Council (NRC) recommends the presence of very low levels of V in poultry diets, with the maximum tolerance level (MTL) established as 10 mg/kg. Excessive vanadium in poultry diets has been shown to be detrimental to egg production, interior quality of eggs (albumen height), body weight and feed consumption.

There is little information showing content of V in feedstuffs. Phosphates are known to be the cause of excessive V in various types of poultry diets. Feed-grade phosphate sources containing high concentrations of V can originate from any part of the world where rock phosphate deposits are mined.

The objective of this research was to obtain information about the content of vanadium in phosphates and poultry feed. The samples were prepared by microwave wet digestion. Content of V was determined by the method of coupled plasma with mass spectrometry on the Agilent ICP-MS 7700.

The concentrations of vanadium determined in the examined samples were above the minimum recommended levels for poultry feed, still not exceeding the maximum tolerable values.

**Keywords:** *vanadium, phosphates, poultry feed*