

## **Current opinions in bioavailability of microelements in farm animal nutrition**

**Aktualne poglądy na biodostępność mikroelementów  
w żywieniu zwierząt gospodarskich**

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In this review paper current state of the knowledge in microelements supplementation in farm animal nutrition was discussed. In introduction the definition of trace element for animals as well as its recommended concentration in serum were presented. Then, the diversity in nutritional standards for microelements requirement, different forms of microelements used in animal nutrition (boluses, lick blocks, injections, premixes, mineral mixtures) and situations of their uncontrolled administration (for example in water) were described. The special attention was paid to conception of various organic forms of microelements utilisation (trace minerals complexes with amino acids and with polysaccharides, chelates, proteiniates, propioniates and yeasts enriched with trace elements). The specific character of their structure and mode of action were explained, as well as problem of antagonism between trace elements was presented (e.g. interaction between copper, molybdenum and sulphur). Furthermore, situations, in which the microelements ultra-supplementation (above standards) is proper, were analysed. In detail the aim of ultra-supplementation of zinc (as method of keratinocytes regeneration and activity improvement in prevention of lameness in cattle, parakeratosis in swine and footpad dermatitis in poultry) was deliberated. At the end, the aspects of poisoning incidences induced by excess of trace elements in diets was discussed.