

## INFLUENCE OF MINERAL, NATURAL AND SYNTHETIC ANTIOXIDANT PREPARATIONS ON FAT SOLUBLE VITAMIN METABOLISM, POULTRY HEALTH AND PRODUCTIVITY

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**Abstract.** Three different preparations of mineral, natural and synthetic antioxidants Biotan, Trivit and Oxynil were tested for their effect on poultry organism. Our aim was to measure the levels of antioxidant vitamins A and E and the index of lipid peroxidation intensity – malonyldialdehyde (MDA) in blood and liver, the level of vitamin A in feeds and eggs, as well as to estimate the hen health and productivity taking into consideration the levels of several biochemical and morphological blood markers and egg quality. The results showed that these preparations had a tendency to decrease MDA in hen plasma and liver; the increase in the amount of inorganic phosphorus and the stabilization of the amount of cholesterol were significant. The preparations did not actually change the levels of other biochemical and morphological blood markers. After the treatment by Oxynil and Trivit there was a tendency of an increase in the amount of vitamin A in eggs. Oxynil saved vitamin A in feeds during the 7 week trial. On that ground, all the above preparations were effective against lipid peroxidation and had some positive effect on hen health. The data obtained showed that further research in this area was purposive.

**Keywords:** fat soluble vitamins, antioxidants, hens.