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APITHERAPY: USE OF BEE PRODUCTS IN VETERINARY MEDICINE(a review)

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Relevance of the Problem. Apitherapy is a branch of alternative and complementary medicine that involves the use of bee products (honey, propolis, royal jelly, bee venom, bee bread, and beeswax) for therapeutic and preventive purposes. In modern conditions of increasing antibiotic resistance, the spread of chronic diseases, and growing interest in natural treatment methods, apitherapy is becoming especially relevant (Skrypka et al., 2022).

Considerable attention has been paid by researchers to the study of biologically active components of bee products, which possess anti-inflammatory, antioxidant, immunomodulatory, and antimicrobial properties. For example, honey is widely used as a natural antiseptic and wound-healing agent, whereas propolis demonstrates pronounced antibacterial and antiviral activity (Bogdanov et al., 2008; Skrypka et al., 2022).

Particular interest is focused on bee venom (apitoxin), which is used in the treatment of musculoskeletal disorders, neurological disturbances, and inflammatory processes. Despite its potential effectiveness, apitherapy requires scientific validation, standardization of application methods, and safety assessment, making this topic highly relevant for further research.

Analysis of Literature Sources. The analysis of literature sources indicates significant interest in apitherapy as a promising field in veterinary medicine. According to Bogdanov et al. (2008), bee products contain a wide range of biologically active substances, including flavonoids, phenolic acids, enzymes, amino acids, and vitamins, which determine their therapeutic properties.

Honey is one of the most extensively studied products in apitherapy. Its antimicrobial activity is associated with the presence of hydrogen peroxide, low pH, and high osmotic activity. Studies by Molan (2001) demonstrated that honey effectively inhibits the growth of a wide spectrum of bacteria, including antibiotic-resistant strains. In addition, it stimulates tissue regeneration processes and is widely used in the treatment of wounds and burns.

Propolis also occupies an important place in apitherapy. According to Sforcin (2016), it possesses pronounced antibacterial, antiviral, and antifungal properties. Its effects are due to the high content of polyphenolic compounds, which are capable of suppressing the activity of pathogenic microorganisms and stimulating the immune response of the organism.

Bee venom (apitoxin) is actively studied as a remedy for inflammatory and autoimmune diseases. Its main components are melittin, apamin, and phospholipase A2, which exhibit anti-inflammatory and analgesic properties (Park et al., 2004). Research indicates that apitoxin may be effective in rheumatoid arthritis, osteoarthritis, and certain neurological disorders; however, its application is limited by the risk of allergic reactions.

Royal jelly and bee bread are also important due to their immunomodulatory and tonic properties. According to Ramadan and Al-Ghamdi (2012), these products contribute to increased body resistance, improved metabolism, and normalization of the functions of various organ systems.

At the same time, the literature emphasizes the need for standardization of bee products, since their composition may vary significantly depending on geographical origin, plant species, and storage conditions. It is also important to consider possible side effects, particularly allergic reactions, which may occur during apitherapy treatment [Sforcin, 2016].

Conclusions. Thus, the analysis of literature sources demonstrates that apitherapy is a promising field of veterinary medicine based on the use of natural biologically active substances. Bee products possess a wide range of therapeutic properties, including antimicrobial, anti-inflammatory, antioxidant, and immunomodulatory effects.