

## Use of Antioxidants from Brazilian *Cerrado* plants on Veterinary Medicine



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### Biography

Francislete Melo has her expertise in evaluation of antioxidant and antimicrobial activity of extracts of plants used on Brazilian traditional medicine. Her work as professor since 2001 has been focused on training students and future researchers in the field of animal health. Her passion for studying plants from the biome Cerrado, as well as studies of ethnopharmacology has been relevant to preserve the knowledge of traditional medicine in this area of the country.



**Statement of the Problem:** Several animal diseases involve an increase on reactive oxygen species (ROS) production, which could cause biological effects as aggravating of pre-existing diseases or cell damage in infectious diseases. In addition, in vitro embryo production (IVP) induces excessive ROS production, which affects blastocyst quality. Therefore, the use of antioxidants represents an alternative to overcome oxidative stress damage both, in infectious diseases and in improving animal reproduction procedures. Brazil is a country of interest to ethnopharmacology, especially the ecological domain Cerrado, which represents a source of biological diversity. The purpose of this study is to evaluate crude extracts of plants from Cerrado used in traditional medicine, for the presence of phenolic compounds as well as its antioxidant activity, antibacterial and effect on apoptosis in IVP.

**Methodology & Theoretical Orientation:** The crude extracts were obtained from several plants selected due to its traditional use. Leaves were dried, powdered and exhaustively extracted by maceration. The crude extracts were used to determine in vitro phenolic compounds, antioxidant activity, antimicrobial activity, and apoptosis proportion on IVP.

**Findings:** All plants studied showed expressive antioxidant activity, and the phenolic compounds amounts were different for each other. Those that showed majority antioxidant activity were used in antibacterial activity and in IVP tests. The crude extract of cagaita (*Eugenia dysenterica* Mart. DC.) showed antimicrobial activity against *Staphylococcus intermedius*, an important bacterium that causes infection in dogs and cats. The same extract also showed a significant reduction ( $p < 0.05$ ) in the proportion of apoptotic cells from embryos cultivated with 0.01 mg/mL.

**Conclusion & Significance:** Antioxidative activity of natural products, especially those extracted from medicinal plants, is extremely important to provide scientific data for the treatment of infectious disease or in procedures of IVP. These extracts, normally, cause low side effects and can take advantage of complementary veterinary medicine.

### Publications

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