

# 7<sup>TH</sup> INTERNATIONAL VETERINARY CONGRESS

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## Studying basal blood plasma catecholamine concentrations in donkey (*Equus asinus*)

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**Statement of the Problem:** Catecholamines are among the most frequently investigated parameters for studying short-term welfare problems providing information regarding sympathoadrenal activity in response to acute stress conditions. The aim of the study was to evaluate levels of basal plasma catecholamines (adrenaline, noradrenaline and dopamine) in healthy donkeys.

**Methodology & Theoretical Orientation:** A total of 962 Martina Franca donkeys were used for this study: 684 females and 278 males, aged from 4 months to 24 years. Animals were subdivided into four age categories: under 12 months old, from 13 to 36 months, from 37 to 120 months and over 120 months. Blood samples were collected from jugular vein. At sampling, donkeys' reaction was evaluated and subdivided into 3 different categories: no reaction; donkeys move the head; and donkeys tend to flee. The dataset of animals with 'no reactions' was used to calculate confidence intervals and was subjected to two-way ANOVA considering age and as independent variables to describe basal catecholamines values. The whole dataset was subjected to one-way ANOVA considering reaction as independent variable. Moreover, Pearson's correlation coefficients between the 3 catecholamines were also evaluated.

**Findings:** Confidence intervals (CI) for noradrenaline concentration ranged between 239.98 ng/L and 255.07 ng/L, for adrenaline between 129.27 ng/L and 137.90 ng/L, dopamine concentrations between 149.62 ng/L and 160.80 ng/L and noradrenaline/adrenaline ratio between 1.91 and 2.05. Age and reaction to sampling affect catecholamine concentrations.

**Conclusion & Significance:** Catecholamines are particularly sensible and respond to minimal acute stress. Younger animals were probably more sensitive to contact with humans, considering that older animals are more used to being near man. However, when catecholamines are measured, it is necessary to observe also animal reaction to blood collection because could be itself cause of level alteration.

### Biography

Aristide Maggiolino is a Research Fellow in Animal Science at the Department of Veterinary Medicine of Bari University "A. Moro" (Italy). In the last years his researches focused on equid production, both for milk and meat from horses and donkeys. Several draught horses, such as donkey's breeds risk extinction are nowadays endangered for the lack of an economically sustainable use. The main aim of his research is the evaluation of catecholamine plasma levels in donkeys because of their involvement as indicator of acute stress, considering innovation that this species is going to live for new techniques and technologies introduced in farm management.

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