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Comparison of Iberian honey bee colony variables continuously monitored with thermo-hygro-buttons and electronic scales set up in two latitudinal extremes of Portugal

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Honey bee colony data collected continuously together with climate data are of great importance because they provide the opportunity to understand colony phenology. Continuous monitoring of honey bee colonies initiated long time ago with Gates (1914) and Hambleton (1925), when they assessed weather effects on hive weight using mechanical scales. Currently, the study of colony dynamics has been intensified with development of new technologies such as electronic scales, hygro-buttons, thermo-buttons, and computer-assisted digital image analysis of brood combs. Studies of colony dynamics are of great interest in Portugal because of large climatic (and flora) differences between the two latitudinal extremes and because of distinct genetic backgrounds of the native subspecies, *Apis mellifera iberiensis* (Pinto et al. 2013). In this study we will compare the temporal dynamics of colony weight and nest temperature and humidity of 12 colonies, which have been continuously monitored since July of 2015 with electronic scales and thermo-hygro-buttons, set up in apiaries located in two latitudinal extremes of Portugal. These colony variables will be correlated with climatic data (temperature, humidity, wind speed, and rain) obtained from automatic weather stations installed in the two apiaries.

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