



Tropentag, September 15-17, 2021, hybrid conference

“Towards shifting paradigms in agriculture  
for a healthy and sustainable future”

## Effect of Communication Towers on the Performance and Behaviour of *Apis mellifera* (Internal Activities) in Iraq

FAIZA SALAH<sup>1</sup>, ALAA ALNAIMEE<sup>2</sup>

<sup>1</sup>University of Gezira, Dept. of Crop Protection, Sudan

<sup>2</sup>University of Baghdad, Plant Protection, Iraq

### Abstract

Beekeeping of *Apis mellifera* is the most important branches of agricultural investments. Bees are most active pollinators. Many factors affect their activities, one of them is electromagnetic radiation. The aim of this study was to investigate the effect of the radiation emitted by communication towers on the behaviour of honey bee communities internally. The experiments were conducted in Iraq. The first location was 500, the second was 150 meters from the telecommunication tower and the third transaction was placed directly under the tower. The height of the tower was 30 m and the amount of radiation emitted from it was 925 MHZ. The results of the internal activity, measuring the activity of the queen in laying eggs, showed that the highest rate of activity in the first treatment, followed by second treatment while the lowest rate was recorded on the third treatment. The area of the closed brood was highest in the first treatment followed by the second treatment and the lowest rate in the third treatment. The results showed that the highest drone brood of the third treatment was 6.76 inches, and the first and second treatments recorded 4.48 and 14.1 inch<sup>2</sup>, respectively. As for the area of sealed honey, there were no significant differences between treatments. As for the results of pollen area, there were significant differences for the first and second treatments, while the third treatment recorded the lowest rate. The results of the measurement of the speed of achievement of the wax foundation showed that there were significant differences between the two treatments, where the second treatment surpassed the rest of the transactions within four days, followed by the first treatment and the third transaction recorded the lowest. The highest rate of density of bees was recorded in the first treatment and the lowest rate for the third treatment. It could be concluded that communication towers have negative effect on the internal activities of *Apis mellifera*.

**Keywords:** *Apis mellifera*, communication tower, Iraq