

**DETERMINATION OF BEE SPACING AND COMB CELL DIMENSION  
IN TRADITIONAL HIVE AT DIFFERENT AGRO-ECOLOGIES  
IN SOUTH WESTERN PARTS OF ETHIOPIA**

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**ABSTRACT**

The study was carried out in Sheka and Bench-Maji Zones of southwest Ethiopia to investigate the naturally constructed bee spaces and comb cell dimensions in traditional bee hive and recommend appropriate bee space and comb cell dimensions for honey bee races/ecotypes in the study area. A total of 60 traditional bee hives (10 hives/ district) was used for this investigation. From each hive a total of 15 bee spaces, 15 honey comb thicknesses and 15 brood comb thicknesses and 15 worker cell depths, 15 cell widths and 15 cell length/hive were measured for each colony at each agro ecology. The results of the study indicated that effect of agro ecology was significant ( $P < 0.05$ ) on most of the parameters determined by the investigators. Bee space of traditional hives in the study areas was in the range of 6.46-10.98mm. The width of honey comb cell was in the range of 5.26-5.90mm with overall mean of 5.48mm and that of brood cell width was in the range of 4.94-5.22mm with overall mean of 5.09mm. Therefore, the recommended (32mm center to center frame space) in frame hive and the adopted casting mold are appropriate for honey bee races (*Apis mellifera scutellata*) in the study areas

**KEYWORDS:** Bee Space, Cell Dimension, Ethiopia, Honey Bee, Traditional Hive