

ABSTRACT

This study aims to determine the diversity and differences of weed species found in organic and conventional Arabica coffee plantations in Bener Meriah Regency. Weeds are a limiting factor in crop productivity as they compete for nutrients, water, and sunlight. The research employed a survey method using 50 cm × 50 cm quadrants at four sampling points in each plantation type. Data were quantitatively analyzed based on density, frequency, and dry weight, and Shannon-Wiener diversity and Sorensen similarity indices were calculated. The results identified 12 weed species, with *Bidens pilosa* L. as the most dominant. The diversity index was higher in organic plantations ($H' = 1.8$) than in conventional ones ($H' = 1.4$), while the weed species similarity index between the two systems was only 42%, indicating substantial differences. Weed chlorophyll content was also generally higher in organic plantations. These findings provide a scientific basis for developing targeted weed management strategies tailored to each plantation system.

Keywords: arabica coffee plantation, conventional, organic, weeds.