

Etiology, diagnostic approaches and management strategies of *Acidovorax citrulli*, a bacterial fruit blotch pathogen of cucurbits

ABSTRACT

The Cameron Highlands has experienced multiple land encroachment activities and repeated deforestation, leading to extensive land-use and land-cover change (LULCC) during the past six decades. This study aims to determine the LULCC against topography in Cameron Highlands between 2009 and 2019 by using geospatial techniques to analyze Landsat 7 (ETM+) and 8 (OLI/TIRS), ASTER GDEM and MODIS imaging sensors. The results showed a decline of 35.98 km² in primary forests over ten years across the Cameron Highlands, while agricultural lands and urban areas flourished by a rise of 51.61 km² and 11.00 km² respectively. It can be noted that the elevation most affected is between 1000 and 1500 m, across all classes. Further results showed the expansion of both agriculture and urban development onto slopes above 35°, leading to an instability of soil structure. In a comparison of the base years of 2009 with 2019, mean LST results have shown temperatures rising by 7.5°C, while an average between 3 and 4°C across the region is recorded. The results obtained provide new information for government bodies and land planners to coordinate their actions without further jeopardizing the environment of the Cameron Highlands.