

LIVESTOCK



In recent years, both temperature levels and the frequency of high-temperature days have been increasing, posing significant challenges to livestock and poultry productivity. Numerous studies highlight the impact of climate change on the output of livestock products, with animals becoming highly vulnerable to heat stress in sustained high-temperature environments. Mild heat stress can result in decreased feed intake and endocrine disruptions, while severe heat stress can lead to infertility, compromised immunity, and even mortality.

Taiwan's livestock industry is particularly vulnerable due to its heavy reliance on imported feed. Recent statistics indicate that feed import prices in Taiwan have surged by 130% to 170%. The primary drivers of this increase are climate change-induced events such as floods and droughts in key international feed-producing regions, which have reduced crop yields. Additionally, rising crude oil prices have escalated transportation costs, further increasing feed expenses for the livestock sector. Continuous high temperatures also contribute to decreased livestock productivity, compounding the challenges faced by the industry.

Many studies assess animal heat stress using the temperature-humidity index (THI), a widely recognized metric. This study utilized the THI to quantify heat stress in livestock under projected future climate conditions, following the AR5 RCP 8.5 scenario at global warming levels (GWLs) of +2°C and +4°C. Results indicate that the red alert zone for heat stress ($\text{THI} \geq 72$) will expand progressively from southern to northern regions and from plains to low-lying mountainous areas. (Figure).

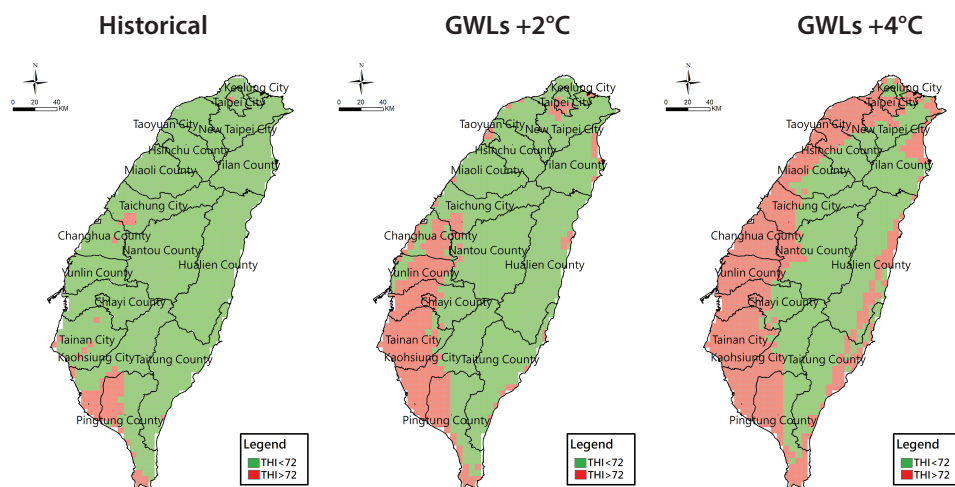


Figure Trends in THI in Taiwan under Climate Change

