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TBD: A tool to study microclimates in an orchard

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2 Background

2.1 Microclimates: definition and relevance

A microclimate is generally understood as a set of distinct climatic conditions that are distinct to a small, localised area [1]. The maximum size of a microclimate is debated, but the World Meteorological Organisation (WMO) regards it as occupying an area of anywhere from less than one metre across to several hundred meters [2]. In practice, microclimates can occur in spaces such as gardens, valleys, caves, or fields. Even human-made structures can generate their own microclimates; for example, tall buildings can create "street valleys" that reduce wind flow and lead to the formation of localized pockets of warmer air, which can also trap higher concentrations of pollution from vehicle emissions [3]. Vegetation plays a critical role in influencing microclimates. The addition of trees to an urban environment can reduce air temperature by as much as 2.8 °C [4].

2.2 Microclimates in apple orchards

2.3 Smart farming

2.4 "Internet of things" and sensor networks

References

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