A portable device and smartphone application for two-spotted spider mite detection in strawberry

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Strawberry industry and pest problem

Florida strawberries: **US$400 million**

(Credit: https://nationaltoday.com/national-strawberry-month/)

Pest problem: the number of the fruit can be reduced by **over 50%**

(Credit: https://www.uaviq.com/en/2019/03/how-to-control-two-spotted-spider-mites-in-strawberry-production/)

Pest counting using magnify lens

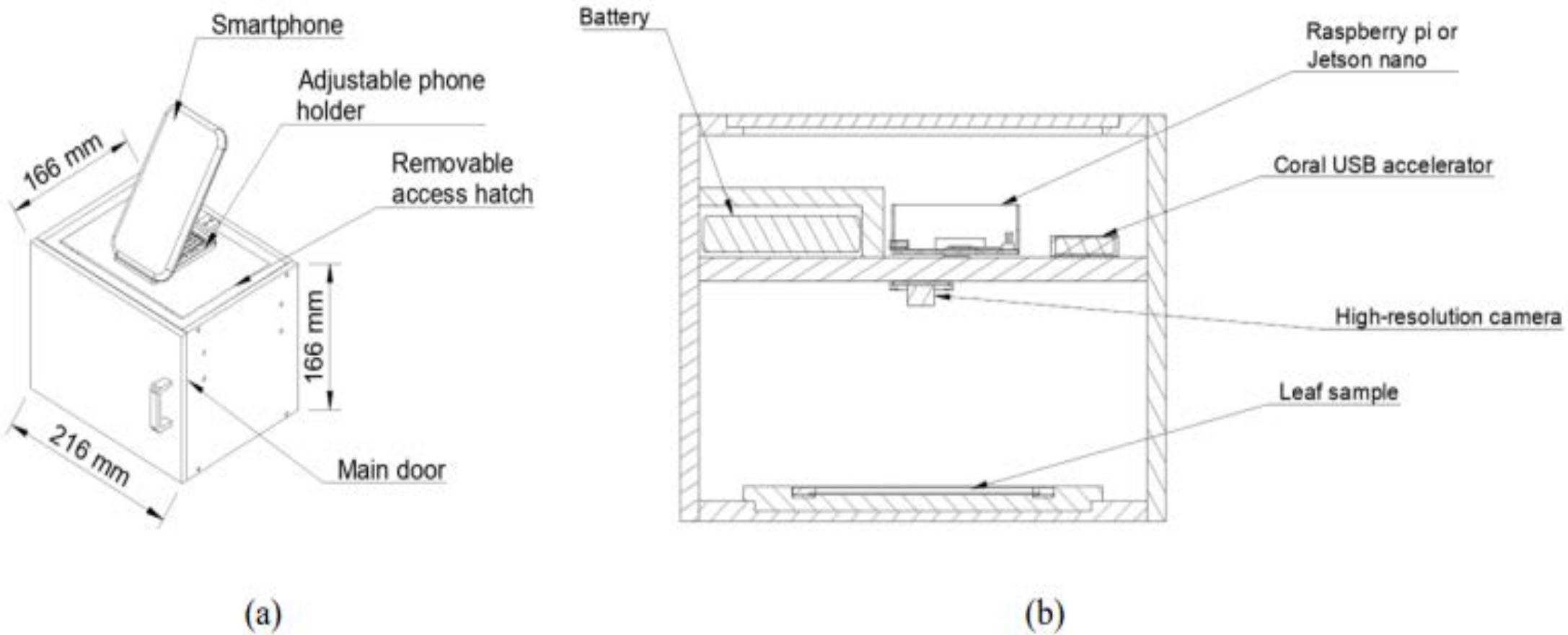
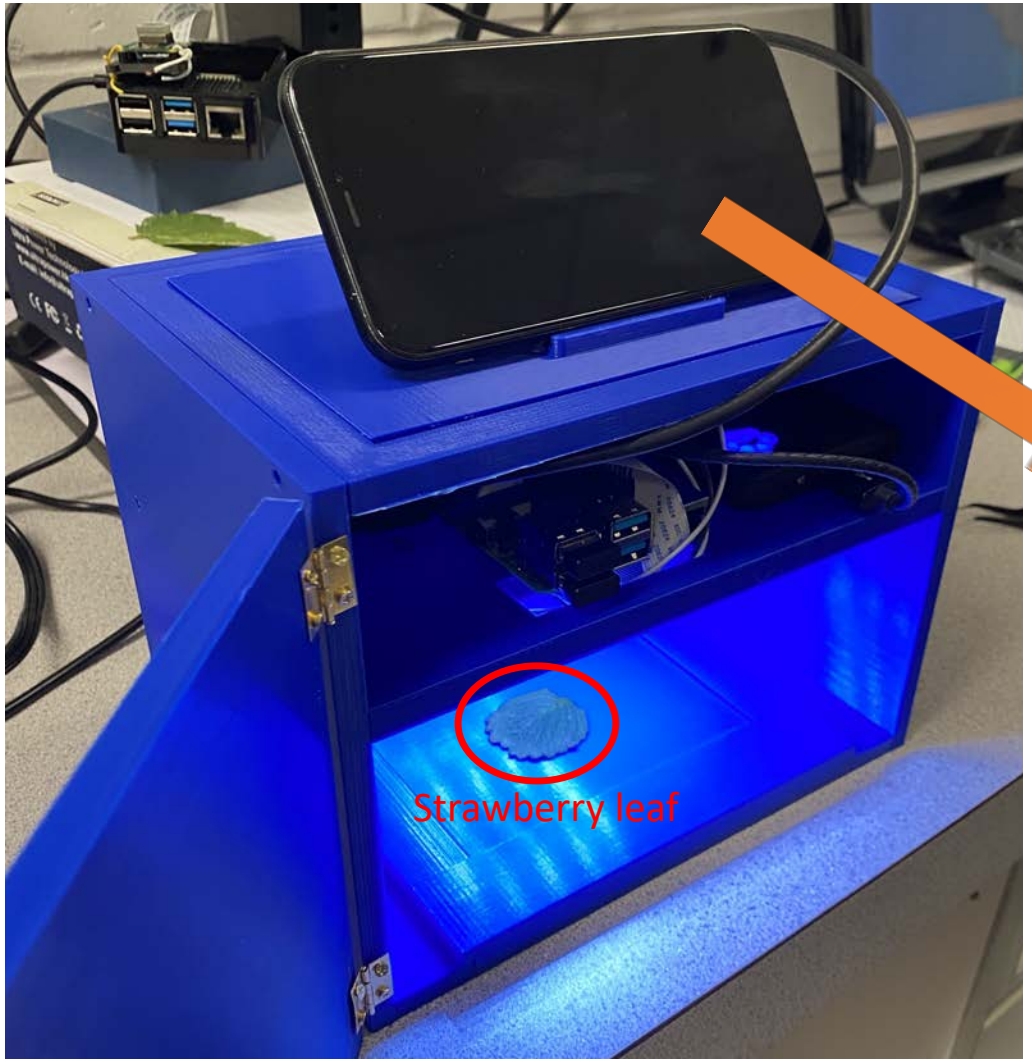
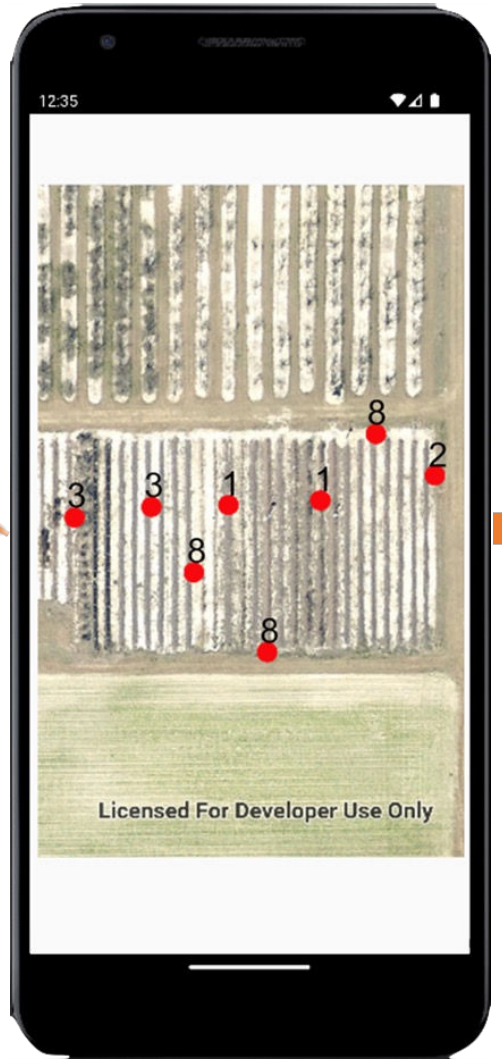


Figure 1. The design of the portable imaging device.
(a) The external design of the imaging device. (b) The internal design of the imaging device.

Portable device



Spatial distribution of sampling points



Spatial distribution of strawberry pest

Major Advantages

Real-time pest distribution map

Generate a real-time visual map on the smartphone to show the pest population distribution

AI-based pest detection

Identify and detect pest immediately after image collection using the portable imaging device

Data record retrieve

Farmers can access all the past field data anytime to track and monitor pest population

Benefits of the technology

Reduce the usage of pesticide and the cost of pest control

Protect the environment

Increase the strawberry yield

Acknowledgement

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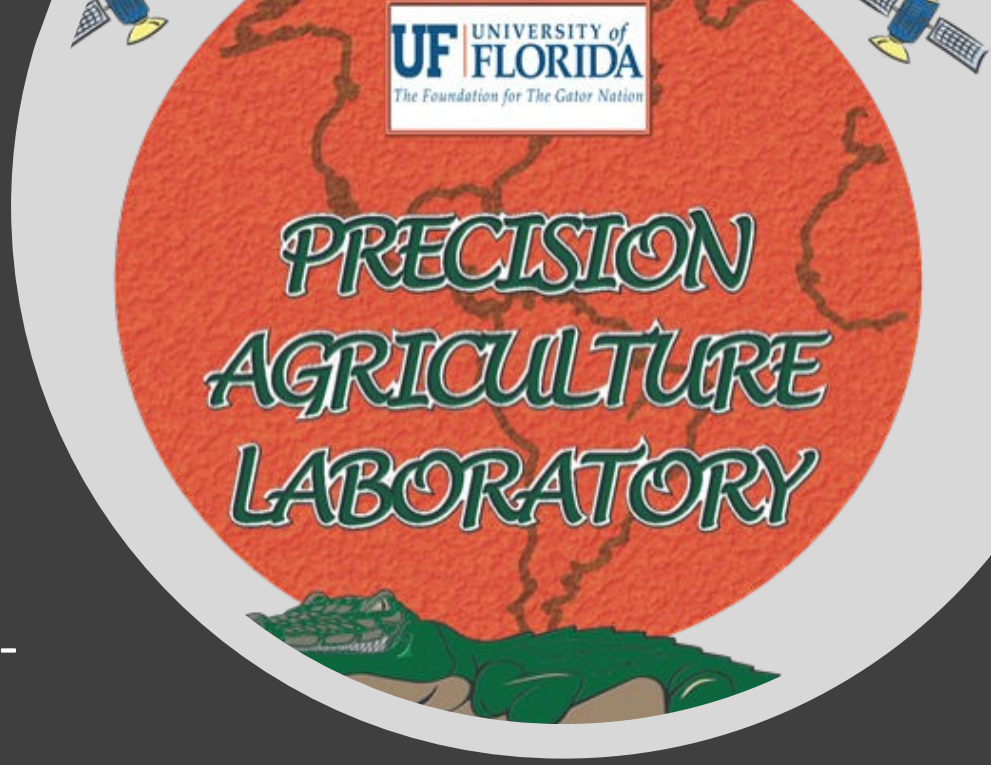

Thank You

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