

# Digital imagery useful for pyrethrum analysis

January 11 2016

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Pyrethrum is a perennial, herbaceous plant grown mainly for the production of pyrethrins. Pyrethrins have insecticidal properties and are commonly used in natural and organic products as a pest control agent. Determining pyrethrin yield, which is measured by flower biomass and pyrethrin ester content of the biomass, has traditionally been accomplished by manually harvesting and counting pyrethrum flowers. These methods are quite labor-intensive, can be destructive to the sampled area, and may cause damage to surrounding crops.

Now, researchers have successfully used digital imaging analysis to measure pyrethrum flower number before the flowers are harvested. Jason Scott, David Gent, Frank Hay, and Sarah Pethybridge published a report in *HortTechnology* in which they say that image analysis has the potential to enable rapid, nondestructive assessment of flower number for pyrethrum. In the study, the scientists compared digital analysis to the traditional manual method. They found that automated recognition of flowers consistently detected 88% of the flowers detected by manual recognition. "When compared with hand collection and physical counting of flowers from sampling units, the system recognized  $\approx 32\%$  of all [flowers](#) collected," the authors noted.

"The key advantages of this automated system are the speed and ease of image collection, and subsequent flower estimation. This enables a much greater plot area to be sampled for yield estimation than manual sampling," the researchers said. "The image [analysis](#) approach will greatly improve the speed of estimating an important component of

pyrethrum yield."

The authors added that the system could be easily modified for any crop where the color and size of a flower or other plant tissue can be differentiated from the background canopy.

**More information:** *ASHS HortTechnology*:  
[horttech.ashspublications.org/ ... nt/25/5/617.abstract](http://horttech.ashspublications.org/...nt/25/5/617.abstract)

Provided by American Society for Horticultural Science

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