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Using unmanned aerial vehicle for identifying the vegetative vigor and quantify the area occupied by eucalyptus sprouts after chemical weeding in the state of Bahia, Brazil

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摘要	Currently, the efficiency of chemical weeding for controlling eucalyptus sprouts is measured by field sampling, but the inefficiency of the sampling methods has led to the investigation of new technologies, such as using unmanned aerial vehicle (UAV) to help to identify the vegetative vigor of eucalyptus after chemical weeding. This study, therefore, used aerial images obtained by a UAV embedded with a sensor to identify the vegetative vigor and quantify the area occupied by eucalyptus sprouts 90 days after the chemical weeding. The study was conducted in three fields planted with eucalyptus whose sprouts had been previously controlled by the chemical weeding with the Scout's herbicide in November 2016. The vegetative vigor of the eucalyptus sprouts was evaluated from the aerial images obtained by the UAV with embedded sensor, during flights conducted in November 2016 and February 2017, that were used to calculate the normalized difference vegetation index and later, a random sample grid was constructed for each image by supervised classification of the area (m(2)) to determine the percentage occupied by the sprouts. The used chemical control method neither eradicated the sprouts nor reduced the sprout occupied area. The normalized difference vegetation index and supervised classification tools allowed determining with high precision sprout health status and size, generating interpretable data on the different evaluated fields and periods. The processing of the images obtained by the UAV provided a viable alternative of management to evaluate sprout status in reforestation areas.
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