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Identification of the volatile organic compounds profile in a resistant cultivar of Cassava (*Manihot esculenta*)

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Brazil is the second largest cassava producer worldwide. Cassava cultivars are of great economical importance as they are used as one of the main food sources both for humans and animals in tropical countries. In addition, cassava has been used as raw material for many other agro-industrial products. This study aimed to identify and characterize the volatile organic compound (VOCs) released from the resistant cassava cultivar EQUADOR 72. This cultivar has shown a resistance towards several pests in the field including mites, whitefly, and the bug *Vatiga illudens*, (Drake, 1922) (Hemiptera:Tingidae). VOCs were collected from plants prior- and post infestation with *V. illudens* and identified using gas chromatography coupled mass spectrometry (GC-MS). The cultivar BRA JARI, previously classified as susceptible, was used as control. Our results show that the EQUADOR 72 cultivar has a constitutive emission of high levels of the monoterpene β -ocimene. In addition, the sesquiterpenes β -caryophellene and farnesol were also constitutively released by the resistant cultivar in comparison to the undamaged susceptible cultivar. These compounds have been reported amongst various plant species and are associated with pest repellence, attraction of natural enemies, and plant-plant interactions. Interestingly, the analysis of the VOCs profile of the susceptible BRA JARI cultivar, showed an increase in the release of β -ocimene and the presence of β -caryophellene and farnesol only after herbivore damage. This VOC profile is similar to that of the resistant cultivar. These results suggest that the volatile semiochemistry of the cassava cultivar EQUADOR 72 may play a crucial role in resistance against the mentioned pests. In addition, the results also can provide a new approach in which organic volatile compounds can be used as a possible marker applied to cassava breeding projects.