Science Societies

What kind of particles are released from harvesting and burning sugarcane?

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Collecting particulate matter samples from a biomass-burning event of sugarcane before harvest. Photo by Jim Wang.

Sugarcane harvest involves residue burning either before or after harvest cutting. While burning leaves off before harvest cutting enhances sugarcane milling efficiency and increases sucrose content, ground burning of harvest residue can eliminate the low yield effect on ratoon sugarcane crops due to the thick groundcover of harvest trash.

New research in *Agricultural & Environmental Letters* evaluates mass concentration and size distribution of particulate matter released from sugarcane harvesting and residue burning in Louisiana, including harvest cutting of green cane and burned cane, burning cane before harvest cutting, and ground burning of harvested residue.

The team found that harvest-cutting operations of both green cane and burned cane tend to generate smaller numbers of total particulate matter with more coarse particles, which travel only a short distance. On the other hand, burning cane before cutting releases lower total numbers of fine particles with lighter density, whereas ground burning of harvest residue emits more and heavier fine particles.

Burning of harvest residue has many agronomic and environmental benefits over leaving residue in the field; however, this study suggests potential air quality and health risks of sugarcane biomass burning with greater emission of fine particles.

Dig deeper

Dattamudi, S., Wang, J.J., Dodla, S.K., DeLaune, R., Hiscox, A., Viator, H., & Jeong, C. (2020). Mass concentration and size distribution of particles released from harvesting and biomass burning of sugarcane. *Agricultural Environmental Letters,5,*

e20028. https://doi.org/10.1002/ael2.20028

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