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ACCEPTED MANUSCRIPT

Climatic seasonality influences the development of pollen grains and fruiting in *Annona squamosa*

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Highlights

- Dry season in Brazilian semi-arid led to the faster development of reproductive organs in *A. squamosa*.
- Pollen grains released during the rainy season had a greater mucilage content and was associated with larger nutrient reserves;
- The high temperature associated with high humidity during the rainy season increased pollen viability and pollen tube length;
- Rainy season in Brazilian semi-arid provided fruits with more seeds, greater fresh fruit mass, pulp mass and seed mass.

ABSTRACT

Artificial pollination is key in the commercial production of the sugar apple (*Annona squamosa*). The influence of the marked climatic seasonality typical of the semi-arid regions, characterized by two seasons (dry and rainy) where

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