

Post-fire reproductive phenology of a savanna in Central Brazil highlights fire-stimulated flowering of the ground layer

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We aimed to describe the short-term reproductive phenology of an open savanna after a fire at the start of the dry season

Why flower and fruit so quickly after fire?

As fire clears the ground layer, conditions are optimal for pollination and dispersal. Fast seed production would increase chances of seedling recruitment when rains arrive as competition with adult plants would be reduced.



43 species opened their flowers in the first seven weeks after fire.

Other 13 species had flower buds but not open flowers.



03 species had already dispersed seeds that were produced after fire.



03 species opened fruits after fire

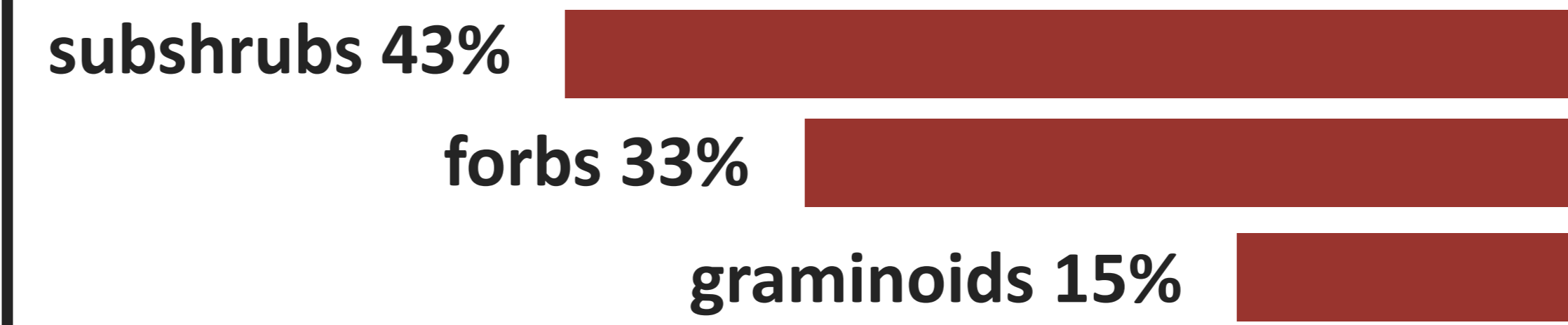
dispersing their seeds in the first two weeks after fire.

Anemopaegma arvense released seeds (left) and also flowered after fire (right).

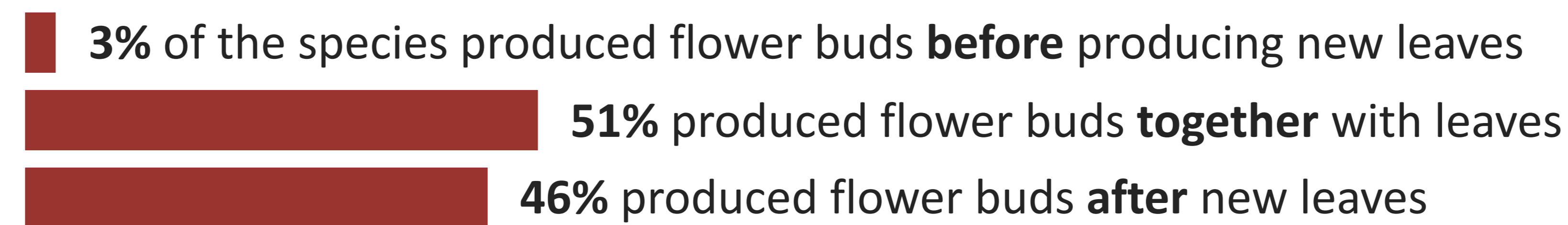


What flowered after fire?

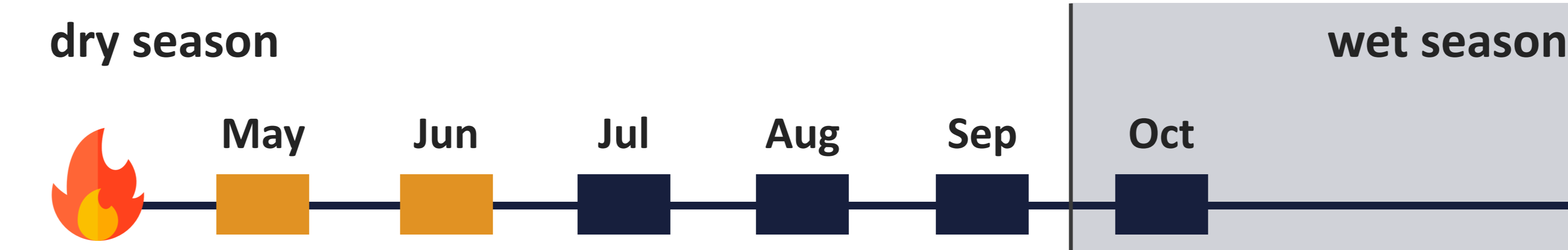
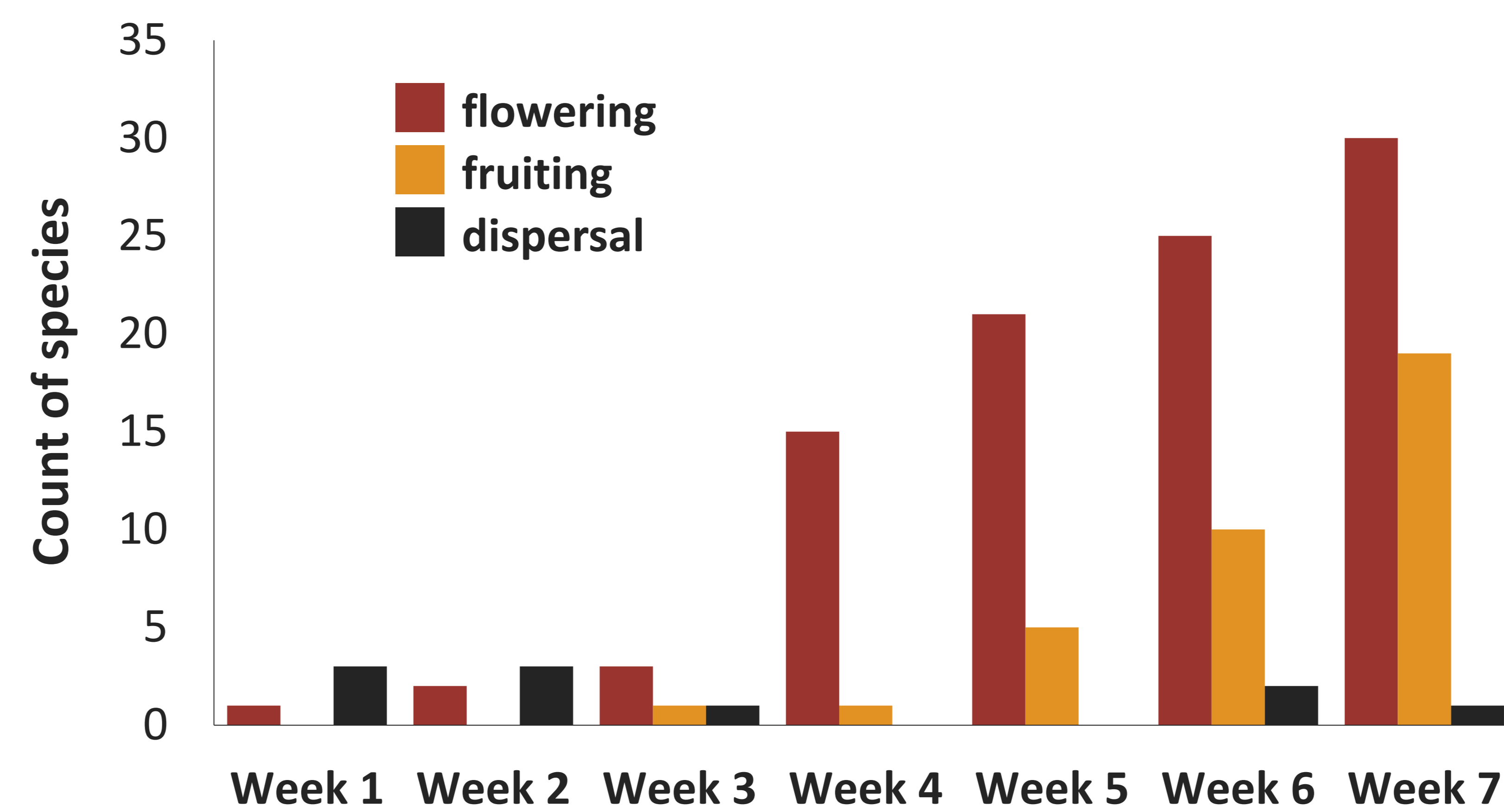
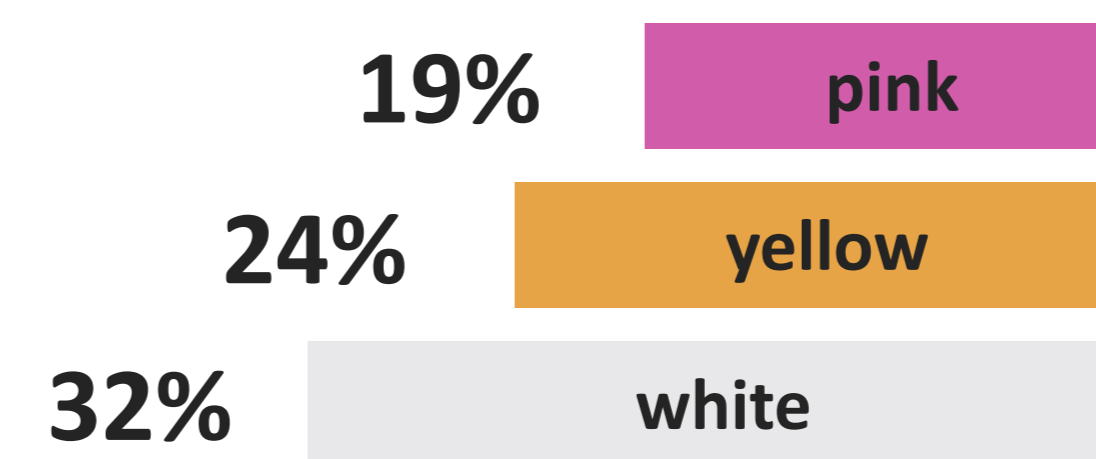
The ground layer comprised 91% of the recorded species



Tress (2%) and shrubs (7%) are more likely to flower a few months after fire.



Species produced mostly white, yellow, or pink flowers, colors that show high contrast with ash making them more visible to pollinators.

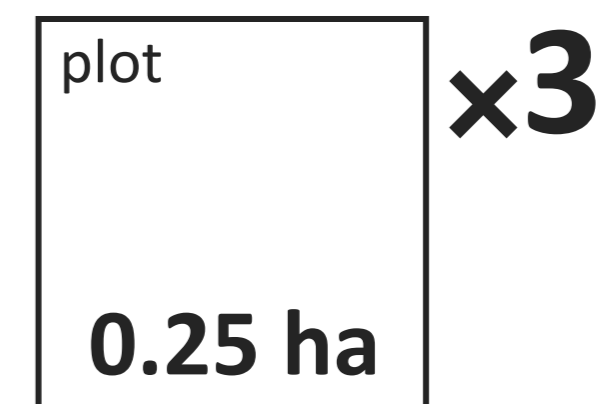


The Cerrado ecoregion

Tropical grasslands and savannas in Brazil where fire is a natural disturbance.



Management fire in a 20-ha savanna site



Parallel transects that covered the whole plot



early-dry season fire in the first week of May 2021



For seven weeks after fire, we compiled a list of all reproductive species and their phenophases.

Inclusion criterion:

A single individual in one of the phenophases (flower bud, open flowers, fruiting, seed dispersal).



When will seeds germinate? In anthropogenic dry season burns, seeds dispersed rapidly after fire have increased risks of predation and senescence due to remaining exposed in the soil for at least three months before rainfall.

Lighting fires at early-wet season provide adequate germination conditions!



If you are interested in our study, feel free to send us a message in the media bellow!

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