Correspondence of modern-pollen and vegetation in Namibian savannahs

Objective: To check whether modern pollen reflect vegetation compositional change along precipitation and grazing intensity gradients.

Methods: Modern pollen were extracted from soil surface samples collected at four localities (Otjikoto, Grootfontein, Waterberg and Kuzikus). At each locality a grazing gradient beginning at a watering point was defined and local vegetation was surveyed.

Correspondence of modern-pollen and vegetation along a precipitation gradient

- Modern pollen spectra reflect the transition from mixed woody savanna at Otjikoto to open savannah at Kuzikus.
- Modern pollen reflect taxa turnover according to mean annual precipitation: Dominance of broad-leaved taxa (p.e. Spirostachys) at Otjikoto and increasing dominance of fine-leaved taxa (p.e. Acacia) and grasses at Kuzikus.
- Modern pollen reflect disturbance of local vegetation: Similar values in Dichrostachys, Alternanthera and Crotalaria pollen at Otjikoto point towards encroachment.

Key messages

- Modern pollen reflect vegetation change according to mean annual precipitation.
- Modern pollen reflect grazing impact on vegetation well.
- Insect pollinated taxa are underrepresented in the pollen records, the contrary occurs with wind pollinated taxa.

Pollen is suitable to reconstruct vegetation composition and disturbance along precipitation and grazing gradients.

References