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Topographic and edaphic factors determining *Chromolaena odorata* and *Hyptis suaveolens* invasion of grassland in the Guineo-Congolian / Sudanian transition zone (Benin)

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ABSTRACT

Objectives: Soil properties-invasive vegetation relationships remains uninvestigated. This study aimed at analyzing the main ecological factors, which explain the spatial distribution of two invasive species: *Chromolaena odorata* (Siam weed) and *Hyptis suaveolens* (Tea-bush).

Methodology and Results: The Data were collected in 33 plots installed randomly according to the phytosociological method. These data were submitted to the Canonical Analysis of Correspondence. The, wet grasslands contamined were distinguished from grasslands of dry plateaus. A difference was also made between establishment and invasion from the step of contamination of both plants. The relevant edaphic main factors related to grasslands on dry plateau were sandy rate, pH, potassium and carbon rate. Wet grasslands of floodplains were located on soils with a high concentration of clay and silt, phosphorus, calcium and magnesium, as well as a high cation exchange capacity.

Conclusions and application of findings: It could be concluded that the texture-moisture of the soil is the main factor, which explained the invasion intensity and the floristic composition of the investigated savannah. Dry plateau soil and oligotrophe induced the development of these alien plants. Therefore, it was suggested planning activities to prevent the expansion of these species on dry plateau grasslands.

Key words: alien plants, Canonical analysis of correspondence, dry plateau, floodplain, plant community, soil properties.