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## Litterfall Deposition in Subtropical Woodlands, Northeastern Mexico

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### Abstract

Litterfall is one of the basic and fundamental processes of nutrient cycling in forest ecosystems. This process represents one of the major pathways for the return of organic matter and nutrients from the vegetation to the soil (Montagnini and Jordan 2002, Reyes-Reyes et al. 2003) and therefore contributes to soil formation, structure and fertility. In northeastern Mexico, the main type of vegetation, known as the Tamaulipan thornscrub, is composed of diverse, dense and spiny shrubs and trees which are distinguished by a wide range of taxonomic groups exhibiting differences in growth, leaf life spans, growth dynamics, and phenological development. In this regard, as an approach to understand the seasonal pattern of litterfall dynamics in the subtropical thornscrub woodlands, northeastern Mexico, litter deposition and their respective components were quantified at three sites (Ramonés, China and Linares counties, in Nuevo Leon state of Mexico). Results have showed that litter deposition for a year study (November 2004 to October 2005) at the three sites ranged from 4,619 to 7,171 kg $ha^{-1}$ . In terms of litterfall constituents, leaves represented the main component with a deposition that ranged from 3,100 to 4,715 kg $ha^{-1}$ . Twigs deposition ranged from 545 to 1,546 kg $ha^{-1}$ , and reproductive structures (flowers, fruits and seeds) deposition varied from 382 to 545 kg $ha^{-1}$ . The contribution of other litterfall components such as bark and insect faces ranged between 270 and 820 kg $ha^{-1}$ . Spatial and temporal litterfall deposition rates among sites are related to phenological events, community plant structure and environmental variables such as extreme temperatures.

**Keywords:** Litter components, Litter production, litterfall, Subtropical woodlands, Thornscrub