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## Litterfall Production in Semiarid Woodlands, Northeastern Mexico

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### Abstract

Litterfall and litter decomposition are key fundamental processes in nutrient cycling of woodlands ecosystems at the Tamaulipan thornscrub of northeastern Mexico, which is characterised by a wide range of taxonomic groups exhibiting differences in growth patterns, leaf life spans, textures, growth dynamics, and phenological development. During two consecutive years (November 2004 to October 2006), monthly litterfall and their respective components were quantified at three county sites (Los Ramones, China, Linares) located at the state of Nuevo Leon. At each site, litterfall deposition was quantified in an undisturbed thornscrub experimental plot (20 m × 20 m). At each plot, seven (replications) litter traps were scattered over the entire area. Each trap covered an area of 0.16 m<sup>2</sup> (0.4 m × 0.4 m) and was placed approximately 0.3 m above the soil level to intercept litterfall. At each sampling date, the collected litter was sorted manually into the following categories: leaves, branches (<2 cm in diameter), reproductive structures (flowers, fruits and seeds), and others (unidentified, fine plant residues such as bark, pieces of insect bodies or feces). The samples were then dried to a constant weight at 65°C for 72 h. Total litterfall production was significantly higher in China (13.4 t ha<sup>-1</sup>) followed by Linares (9.2 t ha<sup>-1</sup>) and Los Ramones (8.9 t ha<sup>-1</sup>). No significant differences were detected among sites for litterfall constituents. Leaves represented the main component varying from 6.0 to 9.2 t ha<sup>-1</sup> followed by branches that ranged from 1.0 to 2.2 Mg ha<sup>-1</sup>, and reproductive structures that varied from 0.7 to 1.1 t ha<sup>-1</sup>. The contribution of other litterfall components such as bark, insects feces and other debris ranged between 0.4 and 1.1 t ha<sup>-1</sup>. Differences in spatial and temporal litterfall deposition among sites might be related to plant phenology, community plant structure and environmental variables such as extreme temperatures and heavy rainfall events.

**Keywords:** Litterfall, northeastern Mexico, Tamaulipan thornscrub, woodlands