

Summary

Two treatments to establish *Arachis pintoii* and *Pueraria phaseoloides* were evaluated at the Tropical Livestock Extension, Research, and Training Center of the School of Veterinary Medicine and Animal Science, University Nacional Autónoma of Mexico. The research center is located in the central-northern region of the State of Veracruz, at 105 m.a.s.l.; its climate is classified as type Af (m). The two treatments consisted of (1) weeding by chapeo (Ch) and application of herbicides (Hb), and (2) burning (+B) and a check without burning (-B), as main plots. Phosphorus (simple superphosphate) application (-P, +P) was included as subplots. The herbicide glyphosate was band-applied at 0.96 kg

(2 lt/ha of a.i. in 200 lt of water) in 50-cm-wide strips, separated 1 m starting from the center of each plot. When the herbicide was combined with burning (Hb + B), the herbicide was applied as in the previous treatment, and burning was done 15 days afterwards, in the sites where glyphosate had been applied.

Vegetative material of *A. pintoi* was inoculated with specific rhizobia. Seeding was conducted between 3 and 5 days after treatments Ch or Ch + B, and between 15 and 16 days after Hb + B. *Arachis pintoi* was planted using previously inoculated 20-cm-long stolons. Seed of *P. phaseoloides*, previously scarified with 98% sulfuric acid for 10 minutes, was used.

Planting density was 2 kg/ha of pure, live, inoculated seed. Distance between plants was 0.5 m, and between rows 1 m. Simple superphosphate was band-applied at a rate of 333 kg/ha (30 kg/ha P) at seeding, 5 cm from the seed or vegetative material. Flooding affected legume establishment differently, being most detrimental in the case of *P. phaseoloides*. The type of weeding, burning, and their interaction did not affect the number of plants. However, the interaction type of weeding x burning was highly significant for plant height; the chapeo of original vegetation or the application of herbicide, followed by burning, resulted in similar plant height (16 cm). When only herbicides were applied, plant height was 11 cm. In the case of *A. pintoi*, costs of establishment were lower with band-applied herbicide, no burning, and no P application.