

INITIAL GROWTH OF LEUCAENA LEUCICEPHALA vs. CUNNINGHAM ON ACIDIC INFERTILE UPLAND SOIL AS AFFECTED BY THE APPLICATION OF PHOSPHATE AND LIME

Second Place, Crop and Soil Science Section,
Student Category

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This research was conducted in a factorial pot experiment at Central Philippine University from August 11 to November 30, 1982. The purpose was to determine the growth response of *Leucaena leucocephala* cv. *Cunningham* on acidic infertile upland soil treated with lime and phosphate. Initial results of soil analysis were: pH, 5.4; C.M., 3 percent; P, 2 ppm; and K, 100 ppm.

Six plants were established in 30 cm. rubber pots filled with 10 kg. of soil. Experimental treatments were levels of lime (0.2 and 4 tons/ha) and levels of phosphate (0, 45 and 90 kg/ha) applied before planting in all possible combination in a RCB design.

Data show that lime applied at 4 tons/ha resulted in the tallest plants and significantly longer primary

rachises from 4 to 10 and at 8 weeks after thinning (WATh), respectively. Similarly, lime at 4 tons/ha gave significantly higher number of leaflets and secondary rachises throughout the period of study. However, phosphate at 45 kg/ha gave taller plants and significantly longer primary rachises at 2 and 4 WATh, respectively.

Finally, the addition of lime at 4 tons/ha produced the heaviest fresh and dry weight of top growth and also dry weight of roots and the largest diameter of stems at 12 WATh. Phosphate application did not significantly affect the aforementioned yields.

In summary, phosphate was beneficial only during the early stage of growth, for height and number of branches, whereas lime application showed importance to growth components up to 12 WATh.