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## Effect of different pre-sowing seed treatments on the germination of *Leucaena leucocephala* (Lam.) and *Acacia farnesiana* (L.)

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**Abstract** *Leucaena leucocephala* and *Acacia farnesiana* are tree species used for several agricultural purposes in the Mediterranean region. The seeds of these species exhibit dormancy, causing delayed germination. Two experiments were conducted to investigate the effect of pre-sowing treatments (scarification, hot water, or soaking) on seed germination of *L. leucocephala* and *A. farnesiana*. In one experiment, seeds were exposed to three pre-sowing treatments: control, sandpaper scarification, or soaking in 70°C water for 4, 8, 12, 16, 20, or 24 min. In another experiment, seeds were soaked in 70°C water for 20 min, and then soaked in water at room temperature for an additional 24, 48, or 72 h or blade scarified. In general, soaking the seeds of the two species in hot water was more effective in breaking seed dormancy than scarification. Sandpaper scarification was not effective for either species. Blade scarification increased *A. farnesiana* seed germination to 56%, indicating that seed dormancy was mainly a consequence of hardseededness. *L. leucocephala* seeds collected from Jordan University of Science and Technology (JUST) site and soaked in 70°C water for 20 min and then soaked for 24, 48, or 72 h had germination rates above 97%. Our results suggest that blade scarification of *A. farnesiana* seeds and soaking of *L. leucocephala* seeds in 70°C water for 20 min are effective treatments to break seed dormancy and enhance seed germination of these vital species.

**Keywords** *Leucaena leucocephala* · *Acacia farnesiana* · Seed germination · Seed pre-treatment · Hardseededness

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