SOME BIOLOGICAL CHARACTERISTICS THAT FOSTER THE INVASION OF *PROSOPIS JULIFLORA* (SW.) DC. AT MIDDLE AWASH RIFT VALLEY AREA, NORTH-EASTERN ETHIOPIA.

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A study on some biological features of *Prosopis juliflora*, a multipurpose leguminous species introduced to Ethiopia, was carried out at Melka-Worer, North-east Ethiopia. The study focused on the number of seeds produced in a pod during the study period, seed dispersal through droppings of animals, soil seed banks, seed germination and stumping height of trees and coppicing ability of *P. juliflora*. The overall mean number of seeds was 2374 seeds/pod. The mean weight of a seed of Prosopis was 0.0275 g 70.001 (S.E.) while there were 36,000–37,000 seeds/kg. The number of seeds recovered from 1 kg of droppings of each animal ranged between 760 (goats) and 2833 (cattle). The total mean soil seed density, in the litter layer and down to 9 cm depth, was 1932 seeds/m2 (±307 S.E.). The highest germination percentage was obtained from seeds that were treated with mechanical scarification (100%) and sulfuric acid for 15–60 min (97–99%). About 37% and 47% of the seeds recovered from droppings of goats and warthogs, respectively, germinated. All stumped trees of *P. juliflora* produced coppices except those stumped at 10 cm below ground. The results clearly demonstrated that *Prosopis* is equipped with a number of biological characteristics that foster its rapid invasion of new areas. These include: (i) production of many, small and hard seeds capable of surviving passage through the digestive system of animals, entering into the soil to form soil seed banks and remaining viable until favorable conditions for germination and seedling establishment appear; (ii) attractive and rewarding pods for animals, containing fleshy and sweet mesocarp embodying the numerous small seeds, which is sought after by both domestic and wild animals, meant for long-distance dispersal; (iii) accumulation of dormant but long-lived viable seed reserves that would serve as sources of regeneration of new *Prosopis* plants in the event of disturbance that might eliminate the aboveground stands; (iv) production of a mixture of seeds, with a few capable of germinating immediately after dispersal to exploit the favorable conditions that might exist at the time of dispersal, while the majority remain dormant for spreading germination over time and space; and (v) great ability of resprouting and fast coppice growth from stumped/damaged trees, making it a very strong competitive invader combined with its sexual reproduction. Combinations of all these characteristics make *Prosopis* a powerful noxious invader as can be evidenced from its rampant invasion in the study site and elsewhere in the tropics. Therefore, any effort in the management, control or elimination of *Prosopis*, which does not take these biological characteristics is bound to fail.

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