

PISSODES CASTANEUS (DE GEER, 1775) (COLEOPTERA: CURCULIONIDAE), THE BARK PINE WEEVIL: A PEST OR A BIOLOGICAL INDICATOR?

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ABSTRACT

The risk of introduction of exotic forest pests is a global problem, evidenced by records of interceptions even in countries that have a quite effective system of plant protection. The banded pine weevil, *Pissodes castaneus*, is native to Europe and North Africa and was introduced into Argentina and Uruguay and recently into Brazil where it was first recorded in Rio Grande do Sul State in June 2001. Later it was recorded in Paraná and in 2002 in Santa Catarina States. The hosts of *P. castaneus* are in the conifer family Pinaceae: *Abies* spp., *Pinus* spp., and *Pseudotsuga menziesii*. The effects produced correspond to the damage caused by the adults feeding on the buds and young branches; however, the primary damage is caused by the larvae tunneling and feeding in the stems where they form galleries filled with excrement and thin fibers of wood.

P. castaneus has two generations per year, but in cold areas may produce only a single generation. Pest outbreaks may start in young plantations, usually in a few trees, but the population can grow rapidly. The increase of the population in the initial stage is associated with the existence of large numbers

of susceptible trees. We analyzed six instances of *P. castaneus* outbreaks in *P. taeda* plantations in Southern Brazil, with the goal to make a diagnosis of the attack. The results indicate that the banded pine weevil is closely linked to the silvicultural condition of the planting, which may include the quality of the site, physical condition of the soil, planting technique, nutritional deficiencies, and occurrence of abiotic phenomena such as hailstorms, frosts, prolonged droughts, etc. Biotic factors such as prior attack by primary pests may also stress the plants and increase the emergence of plants attacked by *P. castaneus*.

In general, it can be stated that the presence of the pine weevil is an important indication that there is a silvicultural problem within the pine plantation. The weevil is an excellent biological indicator of the silvicultural quality of the pine crop and therefore is characterized as an opportunistic pest that can be enhanced by the occurrence of biotic and abiotic stress triggers within plantations. Thus, during the planning of a forest management program, it is necessary to examine all biotic and abiotic factors that may favor attack by the pest.