DOUGLAS-FIR AS A NEW HOST PLANT FOR SIBERIAN MOTH–A POTENTIAL INVADER

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ABSTRACT

The Siberian moth (SM) (*Dendrolimus superans sibiricus* Tschetv.) (Lepidoptera, Lasiocampidae) is the most destructive pest of conifers in Northern Asia. The risk of this species occurring in North America is considered high. In an assessment for potential import of larch logs from Russia into the U.S., this species was identified as a potential hitchhiker with a medium likelihood of being associated with the host on any shipment with high transport potential. Northern U.S. states and Canada have an appropriate climate and are forested with conifers that may be suitable for establishment of the pest. Nevertheless, the favorability of North American coniferous species for the SM has not been determined yet.

We checked experimentally if *Pseudotsuga menziesii* (Pm.) or Douglas-fir (not native for natural SM habitats) can serve as a potential host plant for SM larvae. We also compared the suitability of Douglas-fir and larch (*Larix decidua* (Ledeb.) for the pest larvae performance.

The work was done at the quarantine facility of Georg-August University (Goettingen) on I-VI instar larvae of SM originated from the Republic of Tuva, Russia. Foliage of European larch and Douglas-fir were collected daily from a nearby arboretum. Foliage was fed to individually reared larvae kept under constant conditions: 24 hours illumination, 20-22˚C, and 60% relative humidity. Host preference of the first-instar larvae was determined in two-choice tests as a number of larvae found on each host after 1 hour from experiment set; 10 larvae per Petri dish in 20 replications.

European larch was found to be a highly suitable host for the SM larva; this agrees with results obtained earlier for SM in its natural habitats in Siberia and the Russian Far East. Douglas-fir appeared to be a similarly suitable host plant: no differences were found in survival and growth rates of I-VI instar larvae of SM reared on the tested plant species. Larch needles were preferred slightly more by neonate larvae in the two-choice tests.

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