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Urophora solstitialis, a Potential Biological Control Agent for *Carduus nutans* in Australia

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This seed-fly is currently in quarantine in Canberra undergoing final host-specificity testing before application is requested for its release into the field. The fly overwinters as a prepupa inside a gall in the thistle head. It emerges in late spring and immediately begins to oviposit into the developing floral tube. The larva eats its way down through the ovule into the receptacle, where it causes gall formation to occur. Each larva prevents about 6 seeds from forming, and the gall acts as a metabolic sink, diverting resources away from other developing seed embryos. Many eggs can be laid in a single thistle head. It has been suggested that the introduction of this species may induce undesirable competitive interactions with *Rhinocyllus conicus*, which has already been released. However the choice of oviposition site by this fly in controlled experiments in southern France show that heads that contain weevils are actively avoided. Furthermore fly survivorship is not affected by the presence of weevils. A large cohort of the flies undergo a second generation. This later generation should reduce seed production in flowers that form after *R. conicus* has ceased laying eggs. *U. solstitialis* supports a complex community of parasitoids in Europe that can cause up to 100% mortality in some galls. Escape from this parasitism will be another important factor in the success of this insect after release in Australia.