

Figure 1. The first release of *Istocheta aldrichi* of 2025 in Port Coquitlam, British Columbia, Canada. This photo includes staff and students from Agriculture and Agri-Food Canada, the City of Port Coquitlam, and the City of Kamloops. Photo: Paul Abram.



Istocheta aldrichi (Mesnil), a biological control agent of the Japanese beetle, *Popillia japonica* Newman, establishes in British Columbia

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The effort to manage small but growing populations of the invasive Japanese beetle, *Popillia japonica* Newman (Coleoptera, Scarabaeidae) continues in British Columbia, Canada (Fig. 1). Since its initial detection in the province in 2017, there has been an effort to eradicate this highly polyphagous scarab pest, but new populations continue to be found in additional locations in the province as the years progress (CFIA 2025) and additional management tactics are being added to the toolbox, including biological control.

In a previous article for *The Tachinid Times* (Makovetski & Abram 2024), we reported on the initial biological control releases of the tachinid *Istocheta aldrichi* (Mesnil) in Port Coquitlam, British Columbia in 2023 and summarized the natural history of, and rearing procedures for, this parasitoid. These releases of adult *I. aldrichi* were done in an urban area where only a relatively small number (< 700 per year) of *P. japonica* were being caught in a network of monitoring traps set out by the Canadian Food Inspection Agency (CFIA 2025). Beginning just a few weeks after these initial releases, several *P. japonica* bearing the hallmark macrotype, white eggs of *I. aldrichi* (Fig. 2) were found in CFIA's traps within 500 m of the *I. aldrichi* release site. While this was promising, we did not yet know whether these releases would result in overwintering and longer-term establishment of *I. aldrichi* in this small *P. japonica* population.

The first sign of establishment

In 2024, we eagerly awaited news of whether the first *P. japonica* detected in CFIA's traps in Port Coquitlam would be parasitized by *I. aldrichi*. Remarkably, out of the first 11 *P. japonica* trapped that year, six had *I. aldrichi* eggs on them. Additional parasitized *P. japonica* were found in the traps for the next three weeks. Most parasitism was concentrated in the first few weeks of beetle presence in the summer, and was over by the end of July, which is fairly typical for this host-parasitoid association (Clausen et al. 1927, Fleming, 1968, Gagnon et al. 2023). This showed that the offspring of the flies released in 2023 had successfully overwintered, mated, and found hosts to parasitize.



Figures 2 (left), 3 (right). 2. An adult *Popillia japonica* bearing the characteristic white, macrotype eggs of *Istocheta aldrichi*. 3. An adult *I. aldrichi*. Photos courtesy of Tim Haye.

A 'double whammy'

In 2025, we wanted to know two things. First, whether the population of *I. aldrichi* originating from the 2023 release would make it through a second winter. Second, we wanted to test whether doing additional releases of *I. aldrichi* later in the summer could result in a 'second peak' of parasitism.

Similar to 2024, there were three weeks in July – early in the emergence period of *P. japonica* – where parasitism of *P. japonica* by *I. aldrichi* was observed. This demonstrated that the British Columbian *I. aldrichi* population had made it through yet another winter.

After parasitism from the established *I. aldrichi* population had declined, in late July 2025, we released an additional 647 *I. aldrichi* in Port Coquitlam over a period of four weeks. Despite the fact that these releases were very small compared to many biological control releases, numerous additional parasitized *P. japonica* were subsequently caught in traps, over a period of six weeks. The 'double whammy' proof-of-concept worked – these small releases of *I. aldrichi* extended the time period over which *P. japonica* was parasitized by more than two-fold. This showed us that in newly established pockets of *P. japonica* infestation, later-season augmentative releases of *I. aldrichi* could potentially have additional value as a biological control tool and this strategy should be tested further.

As an aside, there is a practical piece of advice we can give to those doing releases of *I. aldrichi* in the future, that we learned the hard way: don't do releases near nests of bald-faced hornets (*Dolichovespula maculata* (Linnaeus)). During the first release of *I. aldrichi* in 2025 (Fig. 3), a number of our released flies were promptly snatched by hungry hornets right in front of our eyes (Fig. 4).



Figure 4. A newly documented (but highly unfortunate) trophic interaction? A bald-faced hornet snacking on a recently released *Istocheta aldrichi*. Photo courtesy of Emily Grove.

The coming years

We found it rather remarkable that *I. aldrichi* has been able to establish in such a small and localized *P. japonica* population. We are interested in documenting the longer-term population dynamics of this rather unique biological control situation over the next several years.

In recent years, *P. japonica* has been spreading to new areas of the world (e.g., Washington State USA, Oregon USA, Newfoundland Canada, Italy, Switzerland), which has resulted in somewhat of a 'revival' of interest in *I. aldrichi* as a biological control agent (e.g., CABI 2021, Hutchinson et al. 2024, Lasnier et al. 2025, Makovetski et al. 2025, Stillwell et al. 2025). We anticipate that the recent research done in Canada to develop rearing and release techniques and learn more about the natural history of this host-parasitoid association (Gagnon et al. 2023, Pelletier et al. 2023, Legault et al. 2024, Makovetski & Abram 2024) will help to build on earlier foundations (Clausen et al. 1927, Simões & Grenier 1999, McDonald & Klein 2023) for using *I. aldrichi* as a biological control tool to suppress *P. japonica* populations in newly infested areas. Hopefully, the long-term self-sustaining population suppression provided by *I. aldrichi* will reduce the negative economic impacts of *P. japonica* and reduce the need for insecticide-focused management practices.

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