Subject: houndstongue root weevil

Hi all,
The USDA APHIS has come out with a position statement on the houndstongue root weevil, *Mogulones cruciger*, for the US. Below you will find the statement and some background information on the houndstongue root weevil, including why they have reached this decision. The background information is not entirely up to date and I have attached our journal article as a supplement.

In summary, APHIS is considering *Mogulones cruciger* a pest, which means that **any deliberate** movement of this insect is a **felony** under the Endangered Species Act and the Plant Protection Act. I spoke with Jo-Ann Bentz-Blanco from APHIS PPQ (Plant Protection and Quarantine) and she believes this includes both inter- and **intra**-state movement. This is particularly important for Washington because of the Endangered-listed species *Hackelia venusta*. The punishments if caught moving these insects are outlined below and could be pretty hefty.

I know the subject of releasing or moving the houndstongue root weevil has been hotly discussed in many areas of the state and I believe I have been pretty vocal about my feelings on the subject. I want to again make it clear that **WSU's Integrated Weed Control Project outright discourages any person from deliberately moving *Mogulones cruciger* into and around Washington State or beyond**. I would like to encourage your programs or organizations to take a similar position on this matter. APHIS appears to be setting the record to avoid litigation and I believe it is critical that we do the same thing.

I know I have mentioned this several times in some of my presentations but I will say it again here. There is really a bigger picture to this whole houndtongue/M. cruciger story. At this point we really don't know what impact the weevil could have on native species, some evidence points to it ultimately being safe and other evidence suggests there could be a problem. The bigger issue is that this insect was approved by the Technical Advisory Group (TAG) and released in Canada but not in the US. Both of these circumstances could lead to significant political conflicts that could shut biocontrol programs down in North America. It may seem like an overly dramatic response but if you understand the politics and concerns about the safety of biological control, it is simply not worth the risk.

If you have further questions, please don't hesitate to contact me.
Thank you for your thoughtful consideration on the matter.
Jennifer

Subject: *Mogulones cruciger* NOT permitted for distribution in the United States

To: PPQ Regional Offices and State Plant Health Directors
State and Territory Agricultural Regulatory Officials

From: Dr. Alan K. Dowdy
PPQ Director of Invertebrate and Biocontrol Programs

Inquiries have been made about the collection and redistribution of the root-mining weevil *Mogulones*

cruciger (F.) (Coleoptera: Curculionidae) for biocontrol of the exotic rangeland weed houndstongue (*Cynoglossum officinale* L.) (Boraginaceae). *M. cruciger* has NOT been approved for release as a biological control agent in the United States. This is due to concerns about the potential for non-target effects by the weevil on native North American plant species in the family Boraginaceae, especially those of endangered status in the United States. *M. cruciger* naturally spread into the United States from releases made in Canada in the late 1990s.

Permission for field release of *M. cruciger* in the United States has NOT been granted by USDA APHIS. No permits for environmental (field) release or for its interstate movement within the United States will be issued by USDA APHIS. Additionally, USDA employees and federally-funded cooperators should not be involved with, and must discourage, intrastate redistribution or movement of the weevil because the impact of *M. cruciger* on native endangered Boraginaceae plants and on their critical habitats has not been thoroughly addressed.

Although the insect appears to provide some level of control for houndstongue, this does not outweigh the potential negative environmental impacts on endangered plant species. Unauthorized collection, transportation, and release of *M. cruciger* as a biological control agent against houndstongue in the United States is a criminal violation of the Endangered Species Act, with penalties for punishable offenses ranging from a maximum fine of up to $50,000 or imprisonment for one year, or both, and civil penalties of up to $25,000 per violation. These actions are also a violation of the Plant Protection Act, with fines for noncompliance assessed up to $250,000 per count or no more than $1,000,000 per adjudication if the violation is willful.

For additional information please contact:
Dr. Lena C. Soileau (Lena.C.Soileau@aphis.usda.gov) or Mr. Robert Tichenor (Robert.H.Tichenor@aphis.usda.gov) for permits of biological control agents
Dr. Tracy Horner (Tracy.A.Horner@aphis.usda.gov) for environmental compliance
Dr. Jo-Ann Bentz-Blanco (Jo-Ann.Bentz-Blanco@aphis.usda.gov) for the PPQ National Biological Control Program

Background Information on *Mogulones cruciger*

Houndstongue, Cynoglossum officinale

Cynoglossum officinale L. (Boraginaceae) is a biennial plant native to Europe and western Asia that was accidentally introduced into the United States and Canada in the late 1800's, probably through contaminated crop seeds. This exotic rangeland weed is now widely established across the continental US, but is primarily a pest in dry areas of western states.

Houndstongue colonizes disturbed, heavily-grazed, logged, or construction areas. It prevents establishment of desirable plant species. The barbed nutlets, which attach easily to hair, can irritate livestock and degrade wool quality. The clinging seeds are spread rapidly by cattle, horses, native grazing mammals, and people throughout rangeland areas. Houndstongue contains pyrrolizidine alkaloids (PAs) in all plant parts, which are highly toxic to mammals. Death of cattle and horses due to PA poisoning has been reported.

History of the Biological Control initiative program for houndstongue

A biocontrol program for *C. officinale* was initiated in 1988 and evaluated five potential insect agents. Two of these species were approved for release in Canada in 1997 and 1998 respectively; the root-mining weevil, *Mogulones cruciger* (F.) (Coleoptera: Curculionidae) and the root-mining flea beetle, *Longitarsus quadriguttatus* Gyllenhall (Coleoptera: Chrysomelidae). Although agents were released in Canada, neither agent was approved for release in the United States. USDI Fish and Wildlife Service (FWS) never concurred with possible US release of these agents due to concerns about the potential for nontarget effects by the weevil to an endangered native plant in the Boraginaceae family.

The weevil Mogulones cruciger as a potential biocontrol agent

The experimental host range of *M. cruciger* was first assessed between 1988 and 1993. In 1993, a petition for field release was submitted to the Technical Advisory Group (TAG), a federal interagency expert committee responsible for evaluating petitions for the introduction of exotic beneficial organisms to USDA APHIS PPQ. TAG recommended further testing with native North American and European test plant species that were accepted as hosts during pre-release host-specificity tests.

Between 1993 and 1996, additional host-specificity tests were conducted, including four North American Boraginaceae species: *Amsinckia carinata* A. Nels. & J.F. Macbr., *A. tessellata* Gray, *Cynoglossum grande* Dougl. ex Lehm, and *C. occidentale* Gray. Unfortunately, 18 additional North American species were not received in time for testing. In 1996, a supplemental petition was submitted. Based on the data from 1993 and 1996, TAG recommended the release of *M. cruciger* in North America although data were still lacking for the additional species.

The Canadian Biocontrol Review Committee approved the release in Canada in 1997. However, in the United States, the FWS voiced continued concerns about potential non-target effects of *M. cruciger* on native Boraginaceae. As a consequence, USDA APHIS PPQ requested more information about weevil host-specificity before a decision for its release could be made in the U.S.

After initial weevil releases in Canada, 57 plants in Boraginaceae (34 European and 23 North American) were tested between 1989 and 1999. During host-specificity tests, *M. cruciger* was able to feed and oviposit on several non-target species. Larval development was possible to some extent in 18 of the 34 European plants and 11 of the 23 North American species. In no-choice tests, 15 of the 49 tested plants supported *M. cruciger* development to adulthood; these included four North American species (*A. tessellata*, *Cryptantha celosioides* (Piper) Payson, *C. grande*, and *Mertensia ciliata* (James ex Torr.) G.Don). Under choice test conditions, 12 of 37 non-target plants tested supported adult development. Three of these were North American species: (*Cryptantha fendleri* (Gray) Greene, *Hackelia. floribunda* (Lehm.) Johnson, and *Lappula redowskii* (Hornem.) Greene (*Lappula occidentalis* var. *occidentalis* (S. Wats.) Greene).

Available data suggest that *Mogulones cruciger* has a relatively broad host plant range. Thus, the release of *M. cruciger* in the U.S. may pose risks to native Boraginaceae, including several rare and endangered species (Andreas, Schwarzlander, and Clerck-Floate, 2008).

Current status

Permit Requests
Permission for field release of *M. cruciger* in the U.S. has not been granted. The weevil may be imported into a US quarantine facility, but no permits for environmental (field) release will be issued in the US.

Movement of M. cruciger from Canada
The weevil has naturally spread into the U.S. from releases made in Canada. It has been confirmed in Washington and Montana, and is assumed to be present in northern Idaho. This was expected given that *M. cruciger* adults are capable of dispersing up to 0.5 km annually, and a few of the Canadian releases were made within a few kilometers of the U.S. border.

Challenge this presents to APHIS PPQ

Mogulones cruciger has successfully reduced houndstongue abundance at some Canadian sites. This has led to an increased demand for the weevil in weed-infested areas of the western US. Thus, there is a high risk of illegal international and interstate movement of this agent throughout houndstongue-infested areas in the U.S.

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