Summary of the Express Pest Risk Analysis for ***Nematus lipovskyi***

Version 1

PRA area: *specify the PRA area being assessed* Czech Republic (CZ)

Describe the endangered area: *(see question 14)* No endangered area has been identified.

Main conclusions:

Overall assessment of risk: (Copy your answer from Q 15).

The sawfly *N. lipovskyi* has already entered the territory of CZ, it has spread in a part of this territory and can already be considered as established in some areas. The sawfly causes damage to deciduous species of rhododendrons. It is expected that the sawfly will further spread and that it will establish in the whole CZ territory where host plants are grown outdoors. It is supposed that without official (phytosanitary) measures its impact will be relatively low as deciduous rhododendrons are not native to CZ, and in ornamental nurseries and plantings the sawfly can be effectively controlled with available insecticides. Therefore, the overall level of risk of the sawfly for the CZ territory is evaluated as low.

Phytosanitary measures: indicate whether the pest should be recommended for immediate action in the PRA area. Summarize your answer from Q 16.

The conclusion of the risk assessment is that no phytosanitary control measure against the sawfly is needed to be introduced in CZ. It is recommended to continue on official survey in order to eliminate or reduce the uncertainties.

Note: If the assessment shows that phytosanitary measures are not required for your country but there are indications that other EPPO countries are at higher risk, mention it.

N. lipovskyi might pose higher risk for certain EPPO countries where *R. luteum*, a deciduous rhododendron species and a potential host of the sawfly, is native.

Phytosanitary risk for the PRA area[1] (*Individual ratings for likelihood of entry and establishment, and for magnitude of spread and impact are provided in the document*)	High ☐	Moderate ☐	**Low** ☐
Level of uncertainty of assessment (see Q 17 for the justification of the rating. Individual ratings of uncertainty of entry, establishment, spread and impact are provided in the document)	High ☐	**Moderate** ☐	Low ☐

Other recommendations:

- *Inform EPPO or IPPC or EU*
- *Inform industry, other stakeholders*
- *State whether a detailed PRA is needed to reduce level of uncertainty (if so, state which parts of the PRA should be focused on)*
- *Specify if surveys are recommended to confirm the pest status*
- *State what additional work/research could help making a decision.*

[1] „The endangered area“ in the original scheme has been replaced with „the PRA area“ in this PRA. The reason is that the endangered area has not been identified in this PRA and it would be useful to have the rating here also for the overall risk.

Express Pest Risk Analysis:

Nematus lipovskyi

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Stage 1. Initiation

Reason for performing the PRA: *(e.g. interceptions, outbreak*)

The sawfly *Nematus lipovskyi* has been recorded in the territory of the Czech Republic (CZ) for the first time, and it is likely the first record in Europe. The species occurs in the USA where it is known to be a pest of deciduous rhododendrons (azaleas). In CZ, feeding damage to azaleas by larvae of an unknown sawfly has been observed since 2010, and documented by the Department of Zoology, Faculty of Science, Charles University in Prague (Mr Petr Sipek). The species was identified as *N. lipovskyi* in spring 2013 when adults were captured; the identification was carried out by Mr Jan Macek from the Entomological Department of the National Museum in Prague. The information about the new pest of rhododendrons in CZ was published on the news portal iDnes.cz in May 2013. Subsequently, the relevant data were officially verified by the SPA, and preparation of a PRA was initiated. As an official survey of the sawfly in CZ was conducted during the spring 2013, its results have also been included in the PRA.

As far as it is known no other PRA for this pest exists.

PRA area: *specify the PRA area being assessed*

The Czech Republic (CZ)

Stage 2. Pest risk assessment

1. Taxonomy: *e.g. Genus, species/ subspecies, Authority, Family, Order, Kingdom.*
Include information on strains and populations, etc. if relevant, and synonyms if appropriate.

Scientific name: *Nematus lipovskyi* Smith, 1974
Synonyms: Unknown
Taxonomic position: Hymenoptera: Symphyta: Tenthredinidae
Common name: azalea sawfly

Another species of the family Tenthredinidae which is known as defoliator of deciduous rhododendrons in North America is *Amauronematus azaleae* Marlatt, 1896. In North American

literature, the species *N. lipovskyi* and *A. azaleae* are generally called „azalea sawflies“ („sawfly“ is the common name of a member of the suborder Symphyta of the order Hymenoptera).

2. Pest overview

- *Summarize the life cycle (e.g. length of life cycle, location of different life stages, temperature thresholds, humidity requirements) and other relevant information (damage should be described in Q 12). If a datasheet is available, this section should only include the basic information. If available place illustrations of the pest and the symptoms caused in Appendix 1.*
- *Host plants (for pests)/habitats (for invasive plants) (more detail should be provided in Q 7)*
- *Symptoms*
- *Detection and identification (note if a diagnostic protocol is available). State if and how the pest can be trapped.*

Host plants

The host plants belong to the group of deciduous rhododendrons (*Rhododendron* spp., the family Ericaceae), called also azaleas or deciduous azaleas. The known hosts are as follows:

R. calendulaceum (Michx.) Torr.: Among the available sources, only Johnson & Lyon (1991) mention this species as the host of *N. lipovskyi*, quoting that *R. calendulaceum* „including such cultivars as Exbury, is attacked“.

R. molle (Blume) G. Don: Commonly attacked, including its hybrids (Smith, 1974; Johnson & Lyon, 1991; EPPO, 2013; SPA, 2013a; Macek & Sipek, in prep.).

R. viscosum (L.) Torr.: Smith (1974) described *N. lipovskyi* from adults reared from larvae collected in 1923 on *R. viscosum* in Massachusets at a city of Melrose; this is the only available record of *R. viscosum* as the host.

In addition, larvae of *N. lipovskyi* were once observed feeding on flowers and young leaves of *R. obtusum* 'Ledikanense' in CZ; one shrub was attacked by the larvae after they have crawled from deciduous rhododendrons growing in immediate neighbourhood (P. Sipek, pers. comm.). *R. obtusum* is a semideciduous to evergreen „azalea“ species and can be considered as an occasional host plant.

R. calendulaceum and *R. viscosum* have their native range in the USA, whilst *R. molle* is native to China and Japan (USDA ARS, 2013). As to *R. calendulaceum* and *R. viscosum*, none of the available sources states that in the USA the sawfly would be found on these hosts growing in their native habitats. Hence the primary habitat of *N. lipovskyi* is not known.

Life history

N. lipovskyi has one generation per year. Adults occur in spring when buds are opening. Females lay their eggs into buds or developing leaves after having cut the mid-rib with their ovipositor. Larvae eat leaves and flowers. Mature larvae fall down onto the ground, build their cocoon in the upper layer of soil and develop to praepupa. Praepupae in cocoons remain in diapause in the soil until next spring when pupation and emergence of adults occurs. (Smith, 1974; Johnson & Lyon, 1991; BugGuide.net 2003–2013a, b; Macek & Sipek, in prep.)

The period when developmental stages of the sawfly occur depends on the climatic conditions in an area and the weather course during the sawfly development. According to J. Macek (pers. comm.) adults fly in April during 5-7 days, larvae develop in May and their feeding period lasts usually 10-14 days. After praepupae complete their diapause, the pupation follows in the end of March to the beginning of April, depending on the soil moisture and temperature. Smith (1974) and Johnson & Lyon (1991) give the data referring to the USA: in Virginia, adults appear in April and larvae feed mostly in late April and in May; in northern areas such as the states of New England adults occur in May and larvae in June.

Description of the developmental stages and species identification

Females are 4.5–5.5 mm long, mostly pale orange with black antennae and black spots on thorax and abdomen. In males, the dorsal side of the abdomen is largely dark coloured. Younger larvae are green, older larvae get their shade depending on the colour of the tissue they have consumed. Mature larvae reach the length of about 10 mm. (Smith, 1974; Johnson & Lyon, 1991; BugGuide.net 2003–2013a, b; Macek & Sipek, in prep.)

The species description (Smith, 1974; for photographs see NMNH, 2013) is based on morphology of females; males as well as immature stages have not been described so far.

Data on DNA sequences for the species *N. lipovskyi* are available on the web pages of EMBL-EBI (2013) and EOL (no date).

Signs, symptoms and detection

In the beginning of their development the larvae are gregarious (living in groups) and eat the leaves along their edges, older larvae consume remaining parts of leaves except for mid-rib. If defoliation is heavy only the mid-ribs remain on the branches, resembling star-shaped rosettes.

The presence of the sawfly in a site is usually revealed when damage to leaves and flowers is apparent. It often happens only when the larvae are finishing or have finished their feeding. From summer to winter cocoons with diapausing praepupae may be found in the soil or substrate under the infested shrubs. Pupae may be detected in next spring before the adults emerge.

An attempt was made to catch the adults onto sticky boards installed near the plants that had been attacked in previous year but this method needs to be further tested (J. Macek & P. Sipek, pers. comm.).

3. Is the pest a vector?
If the pest is a vector, which organism(s) is (are) transmitted and does it (do they) occur in the PRA area?

Yes / **No**

4. Is a vector needed for pest entry or spread?
If a vector is needed, which organism(s) serves as a vector and does it (do they) occur in the PRA area? Consider both the pest and the vector in the assessment.

Yes / **No**

5. Regulatory status of the pest
Is the pest already regulated by any NPPO, or recommended for regulation by any RPPO? (Assessors can check this by reference to EPPO PQR, RPPO and IPPC websites in addition to normal search mechanisms).

The sawfly is not known to be regulated in any country, or recommended for regulation by any of the regional plant protection organizations.

6. Distribution

Continent	***Distribution*** *(list countries, or provide a general indication, e.g. present in West Africa)*	***Provide comments on the pest status in the different countries where it occurs*** *(e.g. widespread, native, introduced….)*	***Reference***
America	Eastern part of the USA; Smith (1974) reports the species from Alabama, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, Pennsylvania, and Virginia.	Probably native and probably widespread species (both with moderate uncertainty, see notes below the table).	Smith (1974) and other publications citing Smith (1974), e.g. Krombein (1979)
Europe	the Czech Republic	Introduced species. Pest status for *N. lipovskyi*: present, found in some areas.	EPPO (2013), SPA (2013a)

Information on distribution may be retrieved from PQR (http://www.eppo.int/DATABASES/pqr/pqr.htm), CAPRA datasets (http://capra.eppo.org/), CABI maps, etc.
Comments on distribution: (e.g. if known, please comment on the area of origin, how the pest has spread and on any evidence of increasing range / frequency of introductions)

Notes to the table:

The assumption that the species is fairly widespread in the mentioned U. S. areas is based on the information on harmfulness of the sawfly in relation to rhododendrons; however, some sources give overall data covering both *N. lipovskyi* and *A. azaleae*.

As indicated in Q2, the host plants of the sawfly in the USA include both the native North American rhododendrons (*R. calendulaceum* and *R. viscosum*) and the non-native species *R. molle*. Based on this *N. lipovskyi* can be considered, with some uncertainty, to be native to the USA where it also attacks commonly planted *R. molle* originating in China and Japan. The uncertainty relates to the fact that neither Smith (1974) nor Johnson & Lyon (1991) state that some of the findings would had been associated with native habitats of the North American rhododendron species.

7. Host plants /habitats* and their distribution in the PRA area

If the host range is large, you may group plants (e.g. deciduous trees, or at the family level, e.g. Brassicaceae, Rosaceae), and/or focus on those occurring in the PRA area. When appropriate, the difference of susceptibility between hosts should be noted. If there are many habitats, focus on those occurring in the PRA area. Reference to FAOSTAT and EUROSTAT may help assess distribution of host plants.

Host Scientific name (common name) / *habitats**	**Presence in PRA area (Yes/No)**	**Comments (e.g. total area, major/minor crop in the PRA area, *major/minor habitats**)**	***Reference***
Rhododendron calendulaceum Flame azalea	Yes	In CZ, deciduous species of rhododendrons including the host plants of the sawfly are widely distributed as ornamental shrubs planted in public greens, botanical and private gardens, and other sites. None of the deciduous rhododendrons is native or naturalized to CZ. For other information see a note below the table.	Hejny & Slavik (1990) Botany.cz (2007–2012)
Rhododendron molle Chinese azalea			
Rhododendron viscosum Swamp azalea			

**Specify habitat for invasive plants, host plants for other pests.*

Note on the distribution of deciduous species of rhododendrons in the EPPO territory:

In the large part of the EPPO territory, deciduous rhododendrons are commonly grown as ornamentals. Of this group of plant species, *Rhododendron luteum* Sweet is a native one, having its natural distribution in some areas of Europe and west Asia; as a deciduous species can be considered as a potential host plant of the sawfly. The centre of the range of *R. luteum* is in West Caucasus and northern Turkey; this rhododendron is native or naturalized to several European countries, and in some of which is a protected species (Anisko & Czekalski, 1993; Rencova, 2013; Resner, 2005). *R. luteum* is listed in Annex II of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, as amended. In the UK, it has become an invasive non-native species (Pilkington, 2011).

8. Pathways for entry

Which pathways are possible and how important are they for the probability of entry?

Examples of pathways are:

- *Plants for planting*
  - plants for planting (except seeds, bulbs and tubers) with or without soil attached
  - bulbs or tubers
  - seeds
- *Plant parts and plant products*
  - cut flowers or branches
  - cut trees
  - fruits or vegetables
  - grain
  - pollen
  - stored plant products
- *Wood and wood products*
  - non-squared wood
  - squared wood
  - bark
  - wood packaging material
  - chips, firewood, waste wood…
- *Natural spread*
- *Other possible pathways*
  - other packaging material
  - soil/growing medium as such
  - conveyance and machinery
  - passengers
  - hitchhiking
  - plant waste
  - manufactured plant products
  - intentional introduction (e.g. scientific purposes)

Possible pathways *(in order of importance)*	**Short description explaining why it is considered as a pathway**	Pathway prohibited in the PRA area? Yes/No	Pest already intercepted on the pathway? Yes/No
Plants of host rhododendron species intended for planting, except for fruit and seed, originating in the USA	The infested consignment of these plants may contain: – praepupae or pupae of the sawfly in the attached growing substrate (in potted plants); – eggs of the sawfly laid into the buds; – larvae of the sawfly on leaves or flowers.	No	No

Possible pathways

The above specified plants for planting of the U.S. origin may be imported into the EU if they meet special requirements laid down in Council Directive 2000/29/ES, Annex IVAI, points 39. and 40. One of the requirements is that the plants must be dormant and free from leaves. Fulfilling this provision eliminates the possibility of transmission of the sawfly larvae with imported plants.

Potentially, eggs of the sawfly laid into the buds can be transmitted with the imported plants. However, this pathway is considered to be little likely as it is supposed that plants intended for import leave the place of production in a period before the eggs are laid.

Potted host plants for planting with soil or growing substrate attached may be imported from the USA into the EU if they meet special requirements laid down in Council Directive 2000/29/ES, Annex IVAI, point 34. Fulfilling of these requirements substantially reduces the probability of transmission of pupae or praepupae.

Other pathways considered

Soil/growing substrate as a commodity: The pathway is considered to be unlikely. Praepupae and pupae are expected to occur in a substrate below the plants which were damaged by larvae. Furthermore, there is a ban for import of this commodity from the USA into the EU as laid down by Council Directive 2000/29/ES (Annex IIIA, point 14.)

Natural spread (see also Q11): The probability of aerial transmission of adults from the USA into Europe is considered negligible.

Import volume

Nursery plants of „rhododendrons and azaleas, including grafted ones“ (code KN 0602 3000) are delivered into CZ in an annual total value of millions CZK (in period 2006–2010 the value varied from 9.559 thousand to 14.940 thousand CZK); the highest percentage (of the total amount of ornamental nursery plants) belongs to the consignments from the EU member states (Ministry of Agriculture, 2011). It is not known if and what amount of rhododendrons is imported into CZ directly from the USA. As rhododendrons are imported from the USA into other EU member states (Sansford et al., 2009, citing the Eurostat database; Panjiva.com, 2013) it is supposed that certain amount of these plants including the host of the sawfly is destined also to CZ.

Probability of entry

If *N. lipovskyi* were absent in the territory of CZ the probability of entry would be rated moderate, with moderate uncertainty. As the species has already been introduced into CZ its entry is rated highly probable, with low uncertainty. It is not known how the sawfly entered the CZ territory; it might happen with infested host plants.

Rating of the likelihood of entry	*Low* ☐	*Moderate* ☐	***High*** ☐
Rating of uncertainty	***Low*** ☐	*Moderate* ☐	*High* ☐

9. Likelihood of establishment outdoors in the PRA area

*Consider in particular the presence of host plants/habitats and climatic suitability and describe the area where establishment is most likely (**area of potential establishment**). Reference to maps such as Köppen-Geiger climate zones, day degrees and hardiness zones may help assess the likelihood of establishment (see e.g. http://capra.eppo.org/files/links/Rating_Guidance_for_climatic_suitability.pdf).*

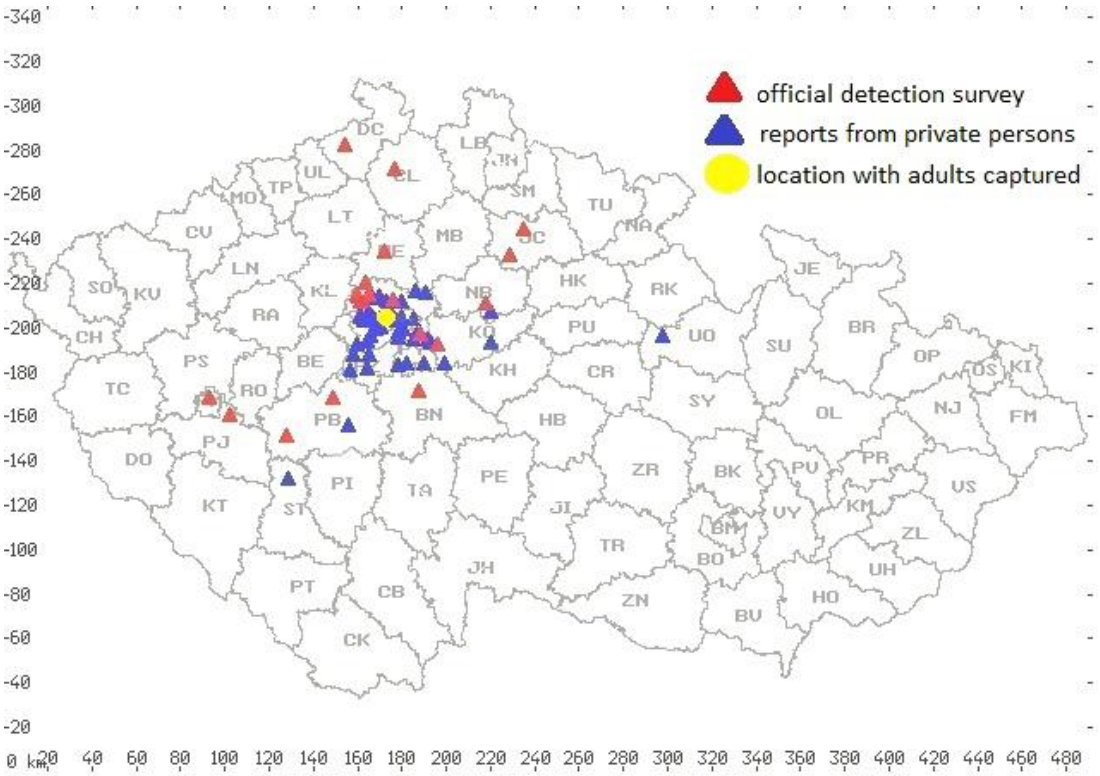
Note: In the CZ territory, the species *N. lipovskyi* was provably identified based on adults that were captured in the only location (in Prague) where feeding damage caused to rhododendrons by larvae of this species has been annually observed since 2010. In other locations (see Q9) damage symptoms showed the same pattern as in the Prague location but adults have not been collected there. The findings from the other locations have therefore been classified as suspected for *N. lipovskyi*. However, for the purpose of the PRA all these „suspected" locations are taken as positive for *N. lipovskyi*. The reason is that the same species is highly likely to occur in all the locations as any other sawfly species feeding on deciduous rhododendrons was not previously known from CZ.

With respect to the note above the species is highly likely to be established in a part of the CZ territory because feeding damage has been observed for a few years in some locations, in one case since 2010, in other locations since 2011. The establishment of the sawfly is expected with high probability also in other parts of CZ as host plants are widespread there and climatic (particularly temperature) conditions are comparable with those in northern part of the range of the species in the USA. The **area of potential establishment** is therefore the whole territory of CZ where host plants are grown outdoors.

The pest status for *N. lipovskyi* in CZ is officially declared as follows: Present, found in some areas (EPPO, 2013; SPA, 2013a).

Rating of the likelihood of establishment outdoors	*Low* ☐	*Moderate* ☐	***High*** ☐
Rating of uncertainty	***Low*** ☐	*Moderate* ☐	*High* ☐

Fig. 1: Locations with findings of *N. lipovskyi* in CZ from 2010 to 2013 (unpublished results of the survey carried out by the Faculty of Science / Charles University in Prague, the National Museum in Prague, and the State Phytosanitary Administration)



10. Likelihood of establishment in protected conditions in the PRA area

Consider the presence of host plants within protected cultivation (e.g. glasshouses, shade houses) and describe the area of potential establishment. For invasive plants consider if protected conditions are a suitable habitat.

The sawfly can enter the protected conditions with propagating material of the hosts, e.g. if cuttings would be taken from infested plants, or with infested nursery plants intended for planting in glasshouses of botanical gardens or similar sites. Even though the sawfly would not be chemically controlled in these premises (see Q12) the generation of the sawfly would probably not be able to complete its development without finding suitable conditions for winter diapause. There is no information available on occurrence of the sawfly in glasshouses or other protected premises.

Rating of the likelihood of establishment in protected conditions	***Low*** ☐	*Moderate* ☐	*High* ☐
Rating of uncertainty	*Low* ☐	***Moderate*** ☐	*High* ☐

11. Spread in the PRA area

- *Natural spread*
- *Human assisted spread*

Briefly describe each mode of spread (e.g. natural flight of invertebrate pests, wind dispersal, carried within plants or plant products, carried with traded commodities), and indicate the rate or distance of spread.

If possible consider how long it would take for the pest to spread widely within the area of potential establishment if no phytosanitary measures are taken. If no specific data are available, compare with similar organisms.

Males and females can fly. Adults were observed flying around the host plants but no more concrete data are known on the flight abilities of *N. lipovskyi* (e.g., Macek & Sipek, in prep.; BugGuide.net, 2003–2013b). It has been observed in the Prague location mentioned above that the outbreak was initially limited to one or two plants whilst it has spread gradually in the following years; this should have happened when females flew from the site where they hatched to still non-infested surrounding shrubs; it can also be supposed that females could fly at longer distance when the population density is high and when there is a lack of sites for laying eggs (P. Sipek, pers. comm.). In general it can be said that active flight, without contribution of wind, is mainly of local importance for the dispersal of the sawfly.

Movement of nursery plants to the places of their planting is considered to be the crucial way for spreading the sawfly to new sites or new areas. Eggs or larvae can be spread with host plants, or praepupae or pupae in growing substrate attached (see also Q8). In CZ, infestation by sawfly was found out in a few garden centres as well as in some private gardens soon after the plants had been bought.

Movement of host plants within the EU is subjected to plant passport obligation only in relation to emergency measures against *Phytophthora ramorum*, and only for plants intended for planting grown by registered producers. Fulfilling the requirements prescribed for the movement of plants, however, does not reduce the probability of spread of the sawfly. Nevertheless, official inspections targeted to *P. ramorum* may help to find the plants attacked with the sawfly.

Given that the trade with host plants in CZ is fairly extensive and frequent, the magnitude of spread can be assumed as moderate to high (in the scale it is rated as moderate with moderate uncertainty). This rating is to a certain extent supported by increasing number of findings in the CZ territory from 2010 to 2013 even though the considerable increase in 2013 is mainly caused by the intensity and the extent of the survey. It is assumed that the sawfly can expand the whole CZ territory during 5 to 10 years.

Rating of the magnitude of spread	*Low* ☐	***Moderate*** ☐	*High* ☐
Rating of uncertainty	*Low* ☐	***Moderate*** ☐	*High* ☐

12. Impact in the current area of distribution

Briefly describe the economic, ecological/environmental and social impacts in the current area of distribution.

Briefly describe the existing control measures applied against the pest.

N. lipovskyi is a defoliating pest, besides the foliage it also feeds on flowers. Total defoliation often occurs, affecting the aesthetic value as well as the health conditions of the plants. It is described as the pest of host rhododendron species planted in the USA by e.g. Johnson & Lyon (1991). Other authors (Boggs et al., 2001; Cranshaw, 2004; Hahn, 2006) mention overall damage caused by the species *N. lipovskyi* a *Amauronematus azaleae* (for which the common name „azalea sawflies“ is used; see also Q1).

As far as the native North American species *R. calendulaceum* and *R. viscosum* are concerned, literature data on the harmfulness of the sawfly relate to the host plants planted as ornamentals, or it is not obvious whether the data relate to the planted plants, or the plants occurring in the natural habitats (see also Q2). Therefore, possible impact of the sawfly on naturally occurring North American species of rhododendrons is not known.

The damage caused by the sawfly can be reduced by killing the larvae. In the USA, it is recommended to treat the infested plants with an insecticide as soon as possible after the hatching of larvae. When the infestation is less extensive the larvae can be collected and destroyed. No data on natural enemies of *N. lipovskyi* in the USA are known; if the sawfly is the native species in the USA (see Q6), the presence of natural enemies can be expected.

If the sawfly is chemically controlled in the USA the overall impact can be rated as low. Nevertheless, it is thought that more considerable losses (with low to moderate magnitude of impact) may arise to some commercial producers of deciduous rhododendrons as well as to botanical gardens having collections of these plants. The impact is rated with moderate uncertainty because of the lack of data on damage caused by *N. lipovskyi* in the USA.

Rating of the magnitude of impact in the current area of distribution	***Low*** ☐	*Moderate* ☐	*High* ☐
Rating of uncertainty	*Low* ☐	***Moderate*** ☐	*High* ☐

The rating chosen should be based on the highest type of impact.

13. Potential impact in the PRA area

Consider whether impacts in the area of potential establishment will be similar to that in areas already infested, taking into account availability of plant protection products, natural enemies, cultural practices, etc.in the area of potential establishment. Consider other consequences (e.g. export loss) if applicable.

Up to now, observations in CZ has indicated that the intensity and the extent of damage by the sawfly seem to be similar to those in the USA. It should be noted, however, that in the mentioned Prague location a few shrubs were killed after they had been repeatedly heavily defoliated by the sawfly (P. Sipek, pers. comm.). As far as a possible lack of natural enemies is concerned, data are still missing for evaluation if and to what extent this could influence the population dynamics of the sawfly.

In CZ, damage by the sawfly can be effectively reduced by means of available control methods, i.e. insecticide treatments. The products registered for treatment of ornamental plants against sawflies in CZ are based on the following active substances: acetamiprid, deltamethrin, pyrethrins or thiamethoxam (SPA, 2013c).

At present deciduous rhododendrons are not treated in CZ against other insect pests to such extent that would eliminate or considerably reduce the damage by the sawfly. Sefrova & Hlavjenka (2011) mention that insecticide treatment of rhododendrons in CZ could be necessary only against sucking pests or weevils. As a possible consequence, chemical control of the sawfly would lead to increase in the usage of insecticides in nurseries and plantings.

Over all the sawfly can be considered to be the pest that is manageable by means of chemical control methods without the need of imposing official measures.

Will impacts be largely the same as in the current area of distribution? **Yes** /No

~~**If No**~~

~~*Rating of the magnitude of impact in the area of potential establishment*~~	~~*Low* ☐~~	~~*Moderate* ☐~~	~~*High* ☐~~
~~*Rating of uncertainty*~~	~~*Low* ☐~~	~~*Moderate* ☐~~	~~*High* ☐~~

14. Identification of the endangered area

Define the endangered area (see definition in ISPM 5): describe in which part of the area of potential establishment significant impact is expected.

As no economically important losses are expected in the area of potential establishment any endangered area does not need to be defined.

15. Overall assessment of risk

Summarize the likelihood of entry, establishment, spread and possible impact without phytosanitary measure. ***An overall rating should be given in the summary part which is placed at the beginning of the Express PRA.***

Then consider whether phytosanitary measures are necessary.

If the assessment shows that phytosanitary measures are not required for your country but there are indications that other EPPO countries are at higher risk, mention it.

The sawfly *N. lipovskyi* has already entered the territory of CZ, it has spread in a part of this territory and can already be considered as established in some areas. The sawfly causes damage to deciduous species of rhododendrons. It is expected that the sawfly will further spread and that it will establish in the whole CZ territory where host plants are grown outdoors. It is supposed that without official (phytosanitary) measures its impact will be relatively low as deciduous rhododendrons are not native to CZ, and in ornamental nurseries and plantings the sawfly can be effectively controlled with available insecticides. The overall risk posed by the sawfly is considered acceptable so that introduction of phytosanitary regulation does not seem to be needed.

N. lipovskyi might pose higher risk for certain EPPO countries where *R. luteum*, a deciduous rhododendron species and a potential host of the sawfly, is native.

Stage 3. Pest risk management

16. Phytosanitary measures

Describe potential measures for relevant pathways and their expected effectiveness on preventing introduction (entry & establishment) and / or spread. If possible, specify prospects of eradication or containment in case of an outbreak. Indicate effectiveness and feasibility of the measures

As described in PM 5/3 possible options for phytosanitary measures include

Options at the place of production

- Detection of the pest at the place of production by inspection or testing
- Prevention of infestation of the commodity at the place of production (treatment, resistant cultivars, growing the crop in specified conditions, harvest at certain times of the year or growth stages, production in a certification scheme)
- Establishment and maintenance of pest freedom of a crop, place of production or area

Options after harvest, at pre-clearance or during transport

- Detection of the pest in consignments by inspection or testing
- Removal of the pest from the consignment by treatment or other phytosanitary procedures (remove certain parts of the plant or plant product, handling and packing methods, specific conditions or treatments during transport)

Options that can be implemented after entry of consignments

- Detection during post-entry quarantine
- Consider whether consignments that may be infested be accepted without risk for certain end uses, limited distribution in the PRA area, or limited periods of entry, and can such limitations be applied in practice

Prohibition

Surveillance, eradication, containment

The conclusion of the risk assessment is that no phytosanitary control measure against the sawfly is needed to be introduced in CZ. It is recommended to continue on official survey next year the results of which would help to eliminate or reduce the uncertainties listed in Q17 (and the PRA could be revised consequently), and in association with it to continue on collaboration with the Entomological Department of the National Museum in Prague and the Department of Zoology, Faculty of Science, Charles University in Prague. Carrying on the public awareness is also recommended.

17. Uncertainty

List and describe the main sources of uncertainty within the risk assessment and risk management.
State whether a detailed PRA is needed to reduce key aspects of uncertainty (if so state which parts of the PRA should be focused on). Comment on what work would be needed to address uncertainties (e.g. for distribution the need for surveys, produce epidemiological data…)

- Identification of the sawfly species in locations where adults have not been collected till now.
- Host range: whether, in addition to *R. calendulaceum*, *R. molle* and *R. viscosum*, also other species of deciduous rhododendrons are or can be the hosts of the sawfly, particularly *R. luteum*.
- Primary habitat of *N. lipovskyi*.
- Primary distribution range of *N. lipovskyi*.
- Probability of establishment in protected conditions.
- Magnitude of spread after establishment.
- Magnitude of impact in the current area of distribution (USA) and the area of potential establishment (CZ); particularly it concerns to the lack of the data on damage by the sawfly in the USA and the data on influence of natural enemies on the sawfly population in the both territories.

18. Remarks

Add any other relevant information or recommendations. For example when phytosanitary measures are not considered appropriate, recommendations for the development of other control strategies can be made (e.g. Integrated Pest Management, certification schemes).

Possible control measures against the sawfly are given in Q12 and Q13. A list of the approved insecticide products (valid as of 24 May 2013) that may be used for treatment of the plants against the sawfly has been published in attachment to a press release from the State Phytosanitary Administration (SPA, 2013b). Possible updates can be searched in an online database of plant protection products (SPA, 2013c).

Once the analysis has been completed, a summary should be prepared (see the summary box at the beginning of the Express PRA)

19. REFERENCES

Provide references cited above (see Instructions for authors to the EPPO Bulletin)
When referring to websites, include the web address and date accessed.

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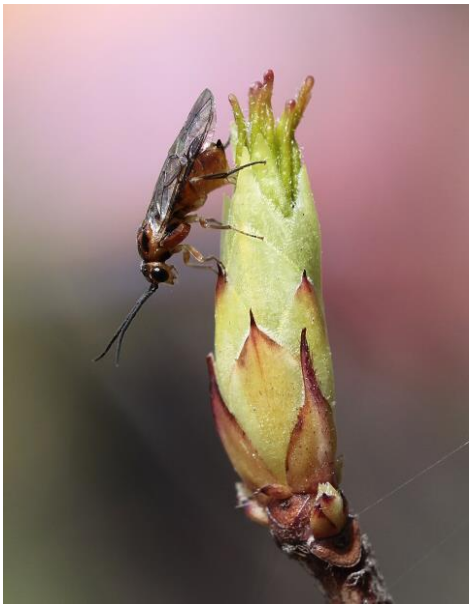
Appendix 1. Relevant illustrative pictures (for information)

Photo 1 (pest)	*Photo 2 (e.g. symptoms)*
	
Photograph taken by Petr Sipek, Faculty of Science, Charles University in Prague	*Photograph taken by Martina Juraskova, State Phytosanitary Administration*
Photo 3	*Photo 4*
	
Photograph taken by Marek Bratka State Phytosanitary Administration	*Photograph taken by Martina Juraskova, State Phytosanitary Administration*