

## SCIENTIFIC OPINION

# Risk assessment of the oriental chestnut gall wasp, *Dryocosmus kuriphilus* for the EU territory and identification and evaluation of risk management options<sup>1</sup>

EFSA Panel on Plant Health (PLH)<sup>2, 3</sup>

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### ABSTRACT

The Panel on Plant Health was requested by the European Commission to deliver a scientific opinion on the risk posed by the oriental chestnut gall wasp, *Dryocosmus kuriphilus* to the EU territory and to identify and evaluate risk management options. Additional analyses were conducted by the Panel to a) determine the distribution of the endangered area within the EU territory; b) investigate the pattern and rate of pest diffusion and c) consider the environmental risk of introduction of the biological control agent *Torymus sinensis* identified as a potential management option. The Panel concluded in its assessment that a) *Castanea* plants for intended planting represent the main pathway for entry of *D. kuriphilus* to the EU; b) *D. kuriphilus* has a very high potential for establishment in the EU and the climate is suitable wherever *Castanea sativa* is grown in southern, central and western Europe; c) the average rate of spread of *D. kuriphilus* is estimated as 8 km/yr; d) spread within the EU is likely, due to adult dispersal by flight and the movement of plants containing eggs and larvae which remain undetected within dormant buds; e) the potential effects on fruit yield reduction are considered moderate and the environmental impact in *Castanea* woodland is considered as low; f) all EU chestnut production is endangered but the areas of fruit production with the highest degree day accumulations where *D. kuriphilus* is absent, e.g. in northern Portugal, northern Spain and south-west France, are identified as particularly at risk; g) management options to reduce likelihood of introduction and spread consist of certifying *Castanea* planting material from pest free areas/places of production; h) classical biological control and plant varietal resistance are identified as management options to reduce the magnitude of impact.

### KEY WORDS

*Castanea* spp., *Dryocosmus kuriphilus*, EU territory, management options, oriental chestnut gall wasp, risk assessment.

### SUMMARY

Following a request from the European Commission, the Panel on Plant Health was asked to deliver a scientific opinion on the risk posed by the oriental chestnut gall wasp, *Dryocosmus kuriphilus* Yasumatsu to the EU territory. It was asked to identify risk management options and to evaluate their efficiency in reducing the risk to plant health posed by this organism.

1 On request from the European Commission, Question No EFSA-Q-2009-00678, adopted on 11 May 2010.

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The Panel conducted its assessment following the EFSA Guidance on a harmonised framework for pest risk assessment<sup>4</sup>. Additional analyses were conducted to a) determine the distribution of *Castanea* spp. and the endangered area within the EU territory b) investigate the mechanisms of pest diffusion based on historical records following first introduction of the pest into the EU in 2002 and c) consider the environmental risk of introduction of the biological control agent *Torymus sinensis* identified as a potential management option to reduce the magnitude of impact of *D. kuriphilus*.

From its analysis of the evidence, the Panel reached the following conclusions:

- The movement of *Castanea* spp. as living parts of plants, in particular bud-wood, cuttings and scions, and plants intended for planting represents the main pathway for entry of *D. kuriphilus* to the EU territory. There is a very high likelihood of establishment of *D. kuriphilus* in the EU and the climate is suitable wherever *C. sativa* is grown in southern, central and western Europe;
- *D. kuriphilus* is widely established in Italy and the spread of *D. kuriphilus* follows a stratified dispersal pattern. Analysis of local random diffusion suggests an average rate of short distance dispersal as 8 km/year, which is significantly less than 25 km/year reported in the literature. The long distance dispersal component via the movement of planting material contributed to the rate of colonization in Italy, Slovenia and France;
- There is a high likelihood of spread within the EU territory due to the presence of eggs and larvae within the bud tissue, which cannot be detected by visual inspection, in the absence of symptoms during the dormant period. Movement of adult dispersal stages of *D. kuriphilus* by flight (natural and human assisted e.g. in vehicles or clothing) contributes to further spread within the EU;
- The potential for yield reduction in *Castanea* and negative effects on production is estimated as moderate. Although reported as high in the literature, there is a high level of uncertainty relating to this estimate in the absence of quantitative data confirming the yield reduction attributed directly to *D. kuriphilus*;
- All EU fruit production is endangered but the areas of *C. sativa* for fruit production with the highest degree day accumulations where *D. kuriphilus* is absent, e.g. in northern Portugal, northern Spain and south-west France, are particularly at risk;
- Management options to reduce the likelihood of introduction and spread are identified as certification of planting material as originating from areas/places of production free from *D. kuriphilus*;
- Management options to reduce the magnitude of impact are identified as plant varietal resistance and biological control.

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<sup>4</sup> EFSA Panel on Plant Health (PLH); Guidance on a harmonised framework for pest risk assessment and the identification and evaluation of pest risk management options by EFSA. EFSA Journal 2010; 8(2):1495. [66 pp.].