

EPPO Alert List: Added in 2002 – Deleted in 2006

Reasons for deletion from the EPPO Alert List

The pest *Heterodera glycines* was already present in the EPPO A1 List but because an incursion was detected in Italy in 2000 it was added to the EPPO Alert List. As the pest did not spread, it was removed from the EPPO Alert List.

Heterodera glycines – an A1 nematode introduced into the EPPO region

Why	<i>Heterodera glycines</i> has been found in Italy in 2000. The EPPO Working Party on phytosanitary regulations considered that this introduction represented a serious threat to European soybean production and that <i>H. glycines</i> , although already listed as an A1 quarantine pest, should be added to the EPPO Alert List to warn all EPPO member countries.
Where	EPPO region: Italy (found in 2000, in 3 soybean fields in Lombardia near Pavia), Egypt, Russia (Amur District in the Far East only). Asia: China (Hebei, Hubei, Heilongjiang, Henan, Jiangsu, Liaoning), India (Madhya Pradesh), Indonesia (Java only), Japan, Korea Democratic People's Republic, Korea Republic, Russia (Far East). Africa: Egypt. North America: Canada (Ontario), USA (Alabama, Arizona, Arkansas, Delaware, Florida, Georgia, Indiana, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Mississippi, Nebraska, North Carolina, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Virginia, Wisconsin). South America: Argentina, Brazil (Goias, Matto Grosso do Sul, Matto Grosso, Minas Gerais, Parana, Rio Grande do Sul, Sao Paulo), Colombia, Ecuador, Puerto Rico.
On which plants	Soybean (<i>Glycine max</i>) is the major economic host of <i>H. glycines</i> . Other cultivated hosts, mainly Fabaceae, are <i>Lespedeza</i> spp., <i>Lupinus albus</i> , <i>Penstemon</i> spp., <i>Phaseolus vulgaris</i> , <i>Vicia villosa</i> , <i>Vigna angularis</i> and <i>V. radiata</i> . Many weeds can be hosts of <i>H. glycines</i> (e.g. <i>Cerastium holosteoides</i> , <i>Lamium amplexicaule</i> and <i>Stellaria media</i>).
Damage	<i>H. glycines</i> is a bisexual cyst-forming species which feeds on roots. Affected plants show stunting and discoloration (yellow dwarf disease). At low to moderate infestation levels, there is over-production of lateral roots. A low rate of nodulation may also be observed. In the field, there are three to five generations per year. Optimum development occurs at 23-28°C; development stops below 14°C and above 34°C. In the absence of a host, contents of cysts may remain viable in soil for 6-8 years. <i>H. glycines</i> is a major pest of soybean in Asia, Brazil and USA, causing significant crop losses and economic damage. In Japan, it interacts with the fungus <i>Phialophora gregata</i> on <i>Vigna angularis</i> , and in USA with <i>Fusarium solani</i> causing sudden death syndrome of soybean.
Pathway	Soil, plants for planting of host plants from countries where <i>H. glycines</i> occurs.
Possible risks	Considering the existing distribution of <i>H. glycines</i> in Asia and the Americas, and its recent introduction in Italy, it seems most likely that it can survive in the EPPO region. Soybean is an expanding crop in the EPPO region, and this may continue as there is an increasing need for plant proteins, in particular for animal feed. Therefore, it is necessary to prevent any further spread of this pest and if possible to achieve eradication in Italy.
Source(s)	EPPO/CABI (1996) <i>Heterodera glycines</i> . In Quarantine Pests for Europe. 2 nd edition (Ed. by Smith, I.M.; McNamara, D.G.; Scott, P., P.R.; Holderness, M.), CABI, Wallingford, UK, 607-611. EPPO Reporting Service nos: 95/029, 96/157 96/158, 96/197, 97/005, 97/084, 99/126, 2000/022, 2001/039. Kaushal, K.K.; Tiwari, S.P.; Uma Rao (2002) <i>Heterodera glycines</i> in India – first report. Annals of Plant Protection Sciences, 10(2), p 410. In: Nematological Abstracts 72(1), March 2003, abst. 497, p 73. Wang, J.; Niblack, T.L.; Tremain, J.A.; Wiebold, W.J.; Tylka, G.L.; Marett, C.C.; Noel, G.R.; Myers, O.; Schmidt, M.E. (2003) Soybean cyst nematodes reduces soybean yield without causing obvious aboveground symptoms. Plant Disease, 87(6), 623-628.
EPPO RS 2002/091, 2003/099, 2004/069	
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