

Express PRA for *Earias insulana*

– Interception –

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Initiation: Interception of Okra fruits from Egypt by the Plant Protection Service of the Federal State Brandenburg

Express-PRA	<i>Earias insulana</i>		
Phytosanitary risk for Germany	high <input type="checkbox"/>	medium <input type="checkbox"/>	low <input checked="" type="checkbox"/>
Phytosanitary risk for EU-Member States	high <input type="checkbox"/>	medium <input checked="" type="checkbox"/>	low <input type="checkbox"/>
Certainty of assessment	high <input checked="" type="checkbox"/>	medium <input type="checkbox"/>	low <input type="checkbox"/>
Conclusion	<p>The Egyptian bollworm <i>Earias insulana</i> is endemic in Africa and the Mediterranean region and does not occur in Germany. It is, however already established in Armenia, Cyprus, Greece, Italy, Sicily, Spain, the Balearic and the Canary Islands. So far, it is listed neither in the Annexes of the Directive 2000/29/EC nor by EPPO.</p> <p><i>E. insulana</i> infests mallow plants, considerable damage mainly is known on <i>Gossypium hirsutum</i> and <i>Abelmoschus esculentus</i>.</p> <p>Due to unsuitable climatic conditions, the pest is not able to establish outdoors in Germany. An establishment in protected cultivation with permanent host availability is assumed. An establishment in Southern European Member States has already taken place. The species will distribute naturally under suitable climatic conditions and with suitable host plants.</p> <p>Due to its low damage potential, the unsuitable climatic conditions and the low host plant availability <i>E. insulana</i> does not present any risk for Germany. The species did already establish in EU-Member States with suitable climate.</p> <p>Thus, <i>Earias insulana</i> is not classified as a quarantine pest and § 4a of the Plant Inspection Order does not apply.</p>		
Preconditions for an Express-PRA fulfilled?	Could be a pest, is not listed and so far, did not establish in the area covered by the reporting Plant Protection Service.		
Taxonomy, trivial name, synonyms	Taxonomy: Insecta, order: Lepidoptera, family: Noctuidae, species: <i>Earias insulana</i> (Boisduval, 1833); trivial names: Stängelspitzenbohrer, ägyptischer Baumwollkapselwurm, Egyptian bollworm		
Does a relevant earlier PRA exist?	No.		

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Distribution and biology	<p>Presumably, the pest originates in Africa where it is distributed almost everywhere. In the meanwhile, <i>E. insulana</i> did also establish in the European Mediterranean region (Cyprus, Greece, Italy, Sicily, Spain, the Balearic and Canary Islands) and Armenia. Additionally South Asia and parts of Russia belong to the geographic range (EPPO, 2015).</p> <p>The eggs are positioned individually on the plant surface, mainly on the flower and leaf buds, young shoots and stems. Dependant on the temperature, the larvae emerge after 2-10 days and then bore into flowers, leaf buds or fruits. The larvae bore downwards to ligneous parts until they leave the infested plant part and bore into a new shoot. Normally, the larvae undergo five larval stages within 8-25 days. They pupate on the plant or on the soil. After 9-15 days, the adults emerge. After 3-7 days, the females begin to lay up to 150 eggs (Gorti, 2005).</p> <p>Throughout the year, the pest produces several generations.</p>
Are host plants present in the PRA area? If so, which?	<p><i>E. insulana</i> mainly infests plants of the mallow family (Malvaceae). Other plants are infested only occasionally. The following host plants are known: abutilon-hybrids, cotton (<i>Gossypium hirsutum</i>), hibiscus (<i>Hibiscus</i> sp.), rice (<i>Oryza sativa</i>), sugarcane (<i>Saccharum officinarum</i>), maize (<i>Zea mays</i>) (EPPO, 2002), okra (<i>Abelmoschus esculentus</i>) and <i>Sida</i> sp. (Plantwise, undated).</p> <p>In Germany, rosemallow is planted as an ornamental in gardens or amenity plantings Maize is only coincidentally infested by the moth.</p> <p>In the EU, the species occurs already in the regions where cotton is cultivated.</p>
Transfer pest consignment→host plant	The moth is able to fly. The transmission of the larva from the commodities to suitable hosts is considered very unlikely.
Is a vector/ further plant needed for host alternation? Which? Distribution?	No vector necessary. The adult animals are able to fly.
Climate in distribution area comparable to PRA area?	The climate in Germany is not suitable for the moth, as the species does not hibernate. The larvae die at temperatures below 2°C. Furthermore, <i>E. insulana</i> is reliant on a drier climate (Gorti, 2005).

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	The climate in the Mediterranean region is very suitable and the species did already establish there.
If no, are host plants present in protected cultivation?	Indoor plants and ornamentals
Damage to be expected in the PRA region?	<p>In Germany, no damage is to be expected, as long-term populations are not able to establish.</p> <p><i>E. insulana</i> is a severe pest on cotton in the Eastern Mediterranean region (Hebrew University of Jerusalem, 2015). In the South East coastal region of Cyprus the moth is a severe pest on Okra (Plantwise, undated).</p> <p>The larvae bore into the fresh buds of the main shoot and feed through the growing point downwards to the stem knots. Only delicate shoots get infested. The upper leaves wilt and the top of the plant dies (Plantwise, undated).</p>
Is an infestation easy to eradicate?	The removal of old and of transitional host plants between the cultivation cycles is effective, provided no alternative hosts are present.
Remarks	-----
Literature	<p>EPPO (2002): <i>Earias insulana</i>. EPPO Global Database https://gd.eppo.int/taxon/EARIIN (accessed on: 30-08-2018; last update: 22-10-2002).</p> <p>Gorti, MSM (2005): Some aspects of the Biology of the Third Generation of <i>Earias insulana</i> Bisd. (Lep.: Noctuidae) Reared on Three Host Plants. Master Thesis, Department of Crop Protection Faculty of Agriculture, University of Khartoum, 97 S.</p> <p>Hebrew University of Jerusalem (2015): Plant Pests of the Middle East. <i>Earias insulana</i> (Boisduval). The Robert H. Smith Faculty, Department of Entomology. http://www.agri.huji.ac.il/mepests/pest/Earias_insulana/ (accessed on: 30-08-2018; last revision: 27-03-2015)</p> <p>Plantwise, undated: Plantwise Technical Factsheet: Egyptian stem borer (<i>Earias insulana</i>). https://www.plantwise.org/KnowledgeBank/Datasheet.aspx?d_sid=20307 (accessed on: 30-08-2018)</p>



Fig. 1 Adult moth of *Earias insulana* (Photo: gailhamshire, Malvern, UK; Source: www.flickr.com)