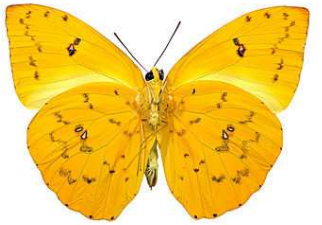
Netherlands Food and Consumer Product Safety Authority
Ministry of Economic Affairs

National Plant Protection Organization, the Netherlands

Quick scan number: QS.ENT.2014.5

	Quick scan date: 26th June 2014	
1	What is the scientific name (if possible up to species level + author, also include (sub)family and order) and English/common name of the organism? *Add picture of organism/damage if available and publication allowed*.	*Phoebis philea* (Linnaeus, 1763). (Lepidoptera, Pieridae)* Common name: orange-barred sulphur    Photo larva: © Dave Wagner / www.discoverlife.org; Photo's adults: Wikimedia commons * Some taxonomists distinguish several subspecies.
2	What prompted this quick scan? *Organism detected in produce for import, export, in cultivation, nature, mentioned in publications, e.g. EPPO alert list, etc.*	Finding of four fully grown caterpillars and two (pre)pupae at inspection after import of three trees of *Cassia suratensis* from Florida, USA.
3	What is the (most likely) area of distribution?	America: from Brazil and Peru northwards, through Central America incl. the West Indies, Mexico and Florida (Heppner 2007). Irregular wanderer to south Texas and an extremely rare vagrant, arriving after mid-summer, in amongst others Colorado, Minnesota, Wisconsin, and Connecticut (Opler 2012), Georgia (Brown 1975), Rhode Island (Garrahan 1994) and Canada (Pilkington 1987). No data have been found reporting breeding in area's north of Florida. As with other *Phoebis* species, *P. philea* is highly migratory in behaviour and can thus be found in a wide variety of habitats including primary and secondary rainforest, deciduous woodland, scrubby grassland and farmland; at altitudes between sea level and about 1500m (Hoskins 2014).

4	Has the organism been detected, sighted and/or has it established itself in nearby countries (DE, BE, LU, FR, UK) *Yes/no. If 'yes', provide details. No interceptions*	No
5	Does the organism cause any kind of plant damage in the current area of distribution and/or does the consignment demonstrate damage suspected to have been caused by this organism? *Yes/no + host plants + short explanation of symptoms.* *Please indicate also when the organism is otherwise harmful (e.g. predator, human/veterinary pathogen vector, etc.).*	The fully grown larvae are 70 to 100 mm. long (Opler 2012), and therefore can cause some cosmetic damage on ornamentals. However, no data were found reporting any damage; information on the web and publications are mostly on faunistics and/or conservation (e.g. Schwartz et al. 1999, Switzer et al. 2003, Ayden et al. 2007, Tobar & Muhammad 2010).
6	Indicate the (provisional) probability of establishment of the organism in the Netherlands regarding climate and ecology. In greenhouses (low, medium, high) Outdoors (low, medium, high) Otherwise (e.g. storage facilities, human environment) *Please illustrate with information/references*	The probability of establishment in the Netherlands is low; the species favours a tropical climate and known host plants are rare, both outdoors and indoors. Survival in commercial greenhouses cannot be ruled out, but the narrow host plant range will limit its potential for permanent establishment; see #7. Note that *Phoebis philae* is present in tropical butterfly houses in the EU (http://www.dekkeranthuriums.nl/vlindorado/?page=fotogalerie or http://www.butterflyfarm.co.uk/attraction/gallery.php?id=0000000007).
7	What are the host plants? Which host plants are commercially grown in the Netherlands and which are present in the natural environment? *If establishment is restricted to greenhouse climate, list only host plants in greenhouses.*	The larvae of *Phoebis philea* are known to feed on *Caesalpinia pulcherrima, Cassia spp., Senna spp.* and *Pithecellobium* (Robinson et al. 2010), all belonging to the family Fabaceae (Leguminosae).
8	Provide a provisional estimation of type and amount of direct and indirect economic damage (e.g. lower quality, lower production, export restrictions, threat to biodiversity, etc.) likely to occur if the organism would become established?	Given the size and appetite of the larvae cosmetic damage to ornamentals is likely, but economic damage in general is expected to be very low (see #5 and #7).
9	How rapid is the organism expected to spread after introduction (by natural dispersal and human activity)?	The species is a migratory species that can fly over long distances (Opler 2012). Also, spread through trade is likely, since eggs and pupae are overlooked easily. However, the species is unlikely to establish outdoors in the Netherlands.
10	In what manner could the organism enter the Netherlands? *Mention pathways*.	*Phoebis philea* may enter the Netherlands through importation of planting materials. Entering through natural spread is very unlikely: there are no records of the species reaching Europe on their own.
11	Has the organism been detected on/in a product (cut flowers, fruit, …) destined for the consumer market? *If "no", please go to question 13*	No
12	If the organism has been found on/in product other	-

	than plants for planting (e.g. cut flowers, fruit, vegetables), are there any risks of introduction and establishment in crop areas and/or natural environment in the Netherlands? *Only to be answered in case of an interception and/or a find.*	
13	Additional remarks	• Tropical butterfly species of the genera *Phoebis* are present in butterfly houses in Europe. (see fore example http://www.dekkeranthuriums.nl/vlindorado/?page=fotogalerie or http://www.butterflyfarm.co.uk/attraction/gallery.php?id=0000000007) • *Phoebis philea* adults are swift flyers. Females lay single eggs on leaves and flowers; caterpillars prefer to feed on the flowers. Development is continuous in the wet season. In Florida there are two-three flights and in the northern range there is one flight from mid-late summer (Opler 2012). • Many species of the host plants have glands that attract ants, which attack caterpillars of amongst others *Phoebis philea* (e.g. Gann 2005-2014).
14	References (Websites acc. April 14, 2014)	• Ayden L, Karla C, Motta da Silva C & Xavier-Filho FE (2007) Pierid butterflies (Lepidoptera : Pieridae) of the Instituto Nacional de Pesquisas da Amazonia, INPA. Acta Amaz. 37(3): 475-477. • Brown CH (1975) Notes on the distribution of the orange barred sulphur *Phoebis philea* (Lepidoptera: Pieridae) in Florida and Georgia. J GA Entomol Soc. 10(4). 1975. 313-314. • Gann GD, Abdo ME, Gann JW, Gann GD Sr, Woodmansee SW, Bradley KA, Grahl E & Hines KN (2005-2014) Natives For Your Neighborhood. http://www.regionalconservation.org. • Garrahan, WD Jr (1994) Early capture of *Phoebis sennae* (Pieridae) in Rhode Island indicating historically significant early migration in 1992. News of the Lepidopterists' Society 3-4: 64-65. • Hoskins A (2014) Learn About Butterflies: the complete guide to the world of butterflies and moths, www.learnaboutbutterflies.com. • Opler PA, Lotts K & Naberhaus T, coordinators (2012) Butterflies and Moths of North America. http://www.butterfliesandmoths.org/. • Pilkington J (1987) Fourth Ontario record for Phoebis philea. Toronto Entom. Ass. Occasional Publication 9-10 (18.) • Robinson GS, Ackery PR, Kitching IJ, Beccaloni GW & Hernández LM (2010) HOSTS - A Database of the World's Lepidopteran Hostplants. NHM, London. http://www.nhm.ac.uk/hosts. • Schwartz A, Henderson RM & Henderson RW (1999) The butterflies of St. Vincent, the Grenadines, and Grenada. Caribbean J Sci 35(3/4):165-183. • Switzer PV, Switzer JA, Switzer IC (2003) New Illinois butterfly records for Clark, Coles, Cumberland, Douglas, and Edgar counties. Trans. Ill. State Acad. Sci. 96(3): 235-241. • Tobar LDE, Muhammad I (2010) Do live fences help conserve butterfly diversity in agricultural landscapes? Rev. Biol. Trop. 58(1): 447-463.
15	Conclusions	Caterpillars of *Phoebis philea* can cause damage to leaves, flowers and pods of *Senna*, *Cassia, Caesalpinia pulcherrima* and *Pithecellobium* spp. The species is, however, not known as a plant pest. Establishment of the species in the Netherlands is unlikely due to the outdoor climate and limited occurrence of host plants in commercial glasshouses. The species is present in the EU in tropical butterfly houses. The risk of the species for plant health is assessed low.
16	Follow-up measures	No specific measures