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FIRST RECORD OF *TUTA ABSOLUTA* (LEPIDOPTERA: GELECHIIDAE) IN SENEGAL

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The tomato leafminer, also known as South American tomato pinworm, *Tuta absoluta* (Meyrick) (Lepidoptera: Gelechiidae), is a native of South America, where it is a serious pest of tomato (*Solanum lycopersicum* L.; Solanales: Solanaceae) but also known to attack cultivated solanaceous plants such as eggplant (*Solanum melongena* L.; Solanaceae), potato (*Solanum tuberosum* L.; Solanaceae), pepper (*Capsicum annuum* L.; Solanaceae), tobacco (*Nicotiana tabacum* L.; Solanaceae), solanaceous weeds and garden bean (*Phaseolus vulgaris* L.; Fabales: Fabaceae) (Ferracini et al. 2012). *Tuta absoluta* (Meyrick) was accidentally introduced to Spain in 2006, from where it spread north to the Netherlands and east to Iran (Desneux et al. 2010, 2011; Baniameri & Cheraghian 2012). In northern Africa, it was reported in Tunisia in 2008 (Abbes et al. 2012), Morroco in 2008 (Ouardi et al. 2012), north of the Sahel in 2008 (Desneux et al. 2010), Western Africa in 2010 (USDA APHIS 2011), Sudan and Ethiopia in 2011 (Anon. 2012).

A female of *T. absoluta* lays up to 260 eggs individually on the tender leaves during its lifetime (Desneax et al. 2010). There are 4 larval instars and the first 2 instars mine the leaves by feeding on the mesophyll and leaving the epidermis intact. These mines reduce the photosynthetic surface of the leaves and result in early drying. Later instar larvae leave the mines and bore into stalks, apical buds, and fruits (Ferracini et al. 2012). It pupates in the mines, dried leaves or in soil.

In a visit to Senegal for Integrated Pest Management Collaborative Research Support Program (IPM CRSP) activities, Pfeiffer, Muniappan, Sall and Diongue found that tomato cultivated in the Niayes region near Dakar and at the Centre pour le Développement de l'Horticulture research station had mines in leaves and bore holes in the fruits. Incubation of affected leaves and soil collected below affected plants resulted in emergence of several adult moths, tentatively identified as *T. absoluta*. Pheromone traps for this insect (Russell IPM - Morocco) were set up in the field and collected many moths, which were confirmed as *T. absoluta* by Dr. Steven C. Passoa, USDA/APHIS/PPQ, Museum of Biodiversity, The Ohio State University, Columbus, Ohio, who retained voucher specimens.

The arrival of *T. absoluta* in Senegal is significant in that it has crossed the Sahara Desert in West Africa (likely through trade) and poses a threat to the rest of Africa. The speed and extent to which *T. absoluta* has invaded several countries in Europe, Asia and North Africa leads us to believe that it will invade all of West and Central Africa in the very near future. This will be facilitated by the numerous small holdings of vulnerable crops in the region. *Tuta absoluta* is a devastating pest of tomato and yields may be reduced by 80-100% if no control measures are implemented (Desneux et al. 2010). *Tuta absoluta* has been recorded in all countries in South America, Panama (Central America), most countries in Europe, the Mediterranean region, and Africa north of the Sahara. This pest is a great concern for the US Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS), which has imposed quarantine restrictions for export of tomatoes from these countries into USA (USDA-APHIS 2011). It is highly likely that USDA/APHIS will impose quarantine restrictions on export of tomatoes from ECOWAS countries to the United States, starting with Senegal and rest of the West and Central African countries, as this pest progressively expands into these areas (USDA-APHIS 2012).

Summary

An invasive pest of South American origin, *Tuta absoluta* (Meyrick) (Lepidoptera: Gelechiidae), a devastating pest of tomato (*Solanum lycopersicum* L.), is reported for the first time in Senegal in 2012. It was first reported in Spain in 2006 and since then it has spread to most of Europe and Mediterranean region. Its occurrence in Senegal is a serious concern as it is likely to spread from there to the rest of West and Central Africa in the near future.

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Key Words: invasive species, *Capsicum annuum Nicotiana tabacum, Phaseolus vulgaris, Solanum lycopersicum, Solanum melongena, Solanum tuberosum*

Resumen

Se reporta por primera vez para Senegal encontrada en el 2012 una plaga invasora de origen sudamericano, *Tuta absoluta* (Meyrick) (Lepidoptera: Gelechiidae), una plaga devastadora de tomate (*Solanum lycopersicum* L.). Esta plaga fue reportada por primera vez en España en el 2006 y desde entonces se ha extendido a la mayor parte de Europa y la región Mediterránea. Su presencia en Senegal es considerado serio, ya que es probable que se extienda desde allí al resto de África occidental y central en un futuro cercano.

Palabras Clave: especies invasoras, *Capsicum annuum Nicotiana tabacum, Phaseolus vulgaris, Solanum lycopersicum, Solanum melongena, Solanum tuberosum*

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