ORGANISM (ORGA) BCH-ORGA-SCBD-259116-3

LAST UPDATED: 28 FEB 2022

## Organism information

Scientific name

Spodoptera frugiperda

Taxonomic Classification

| | |
|---|---|
| Kingdom | Metazoa |
| Phylum | Arthropoda |
| Class | Insecta |
| Order | Lepidoptera |
| Suborder | Glossata |
| Family | Noctuidae |
| Subfamily | Amphipyrinae |
| Genus | Spodoptera |
| Species | Spodoptera frugiperda |

Alternate scientific name(s) (synonym(s))

SPOFR

Common name(s)

Fall armyworm EN

Type of organism

Insects

Domestication

Wild

## Characteristics related to biosafety

Centre(s) of origin

*Spodoptera frugiperda* is native to tropical and sub-tropical regions of the Americas. EN

Habitat range

The fall armyworm can survive temperatures between 7 and 35°C. However, it requires a temperature of at least 11°C for development and 14.6°C for pupae. Larval development is reported to be optimal at 28°C. Temperatures above 30°C cause poor wing development. The EN

| | |
|---|---|
| species cannot survive more than 8 to 10 days below 10℃ and is sensitive to freezing. | |

Geographical distribution

| | |
|---|---|
| *Spodoptera frugiperda* can be found in the Americas (southern Florida and Texas to Argentina), Asia, Australia and Africa. It is considered invasive and was first reported in West Africa in 2016. In the Americas, the pest can be found as far north as Canada and the Eastern USA during summer. | EN |

Common use(s)

Research

**Additional Information**

| | |
|---|---|
| The fall armyworm is an important agricultural pest that feeds on leaves, stems and reproductive parts of more than 350 plant species, including maize, rice, sorghum, sugarcane, wheat, cotton and many vegetables. It has two host-plant strains: C-strain (corn strain), which feeds primarily on maize, cotton and sorghum; and the R-strain (rice-strain), which is more associated with rice and pasture grasses. The species has a high invasion potential due to short generation time, high fecundity (~1000 eggs per female), long distance dissemination, resistance to control methods and polyphagous abilities. At 28℃, the generation time is between 30 to 40 days (roughly 55 days at cooler temperatures) and thus can produce several generations per season. Resistance to chemical insecticides, Bt toxins and viral biocontrol have been reported.<br><br>*Spodoptera frugiperda* has a genome of about 390 megabases with 32 chromosomes. It is estimated that there are 22,260 proteins.<br><br>Cell line Sf9 is a commonly used platform for studying recombinant proteins using Baculovirus-expression platforms. The cells were originally established from ovarian tissues and support high-levels of protein expression. | EN |

Other relevant website addresses and/or attached documents

? NCBI Taxonomy Browser - Spodoptera frugiperda *( English )*

? GenBank - Genome - Spodoptera frugiperda (fall armyworm) *( English )*

? UniProtKB Taxonomy - Spodoptera frugiperda (Fall armyworm) *( English )*

? CABI - Datasheet - Spodoptera frugiperda (fall armyworm) *( English )*

? Biology, invasion and management of the agricultural invader Fall armyworm, Spodoptera frugiperda (Lepidoptera Noctuidae).pdf *( English )*

? Molecular Ecology Resources - 2020 - Zhang - Genetic structure and insecticide resistance characteristics of fall armyworm.pdf *( English )*

? Biology and nutrition of Spodoptera frugiperda (Lepidoptera Noctuidae) fed on different food sources.pdf *( English )*

? Bioecology of fall armyworm Spodoptera frugiperda (J. E. Smith), its management and potential patterns of seasonal spread in Africa.PDF *( English )*

? Genetic characterization of fall armyworm infesting South Africa and India indicate recent introduction from a common source population.pdf *( English )*

? Understanding the factors influencing fall armyworm (Spodoptera frugiperda J.E. Smith) damage in African smallholder maize fields and quantifying its impact on yield. A case study in Eastern Zimbabwe.pdf *( English )*

BCH-ORGA-SCBD-259116-3

## Further Information

Questions about the Cartagena Protocol on Biosafety or the operation of the Biosafety Clearing-House may be directed to the Secretariat of the Convention on Biological Diversity.

**Secretariat of the Convention on Biological Diversity**
413 rue Saint-Jacques, suite 800
Montreal, Québec, H2Y 1N9
Canada
Fax: +1 514 288-6588
Email: secretariat@cbd.int