



ARC-DOA LOCUST FACT-SHEET SERIES

SOUTHERN AFRICAN DESERT LOCUST

Schistocerca gregaria flaviventris (Burmeister)

Order Orthoptera

Family Acrididae

Other common names

woestynsprinkaan (A); deserto gafanhotos (P)

Origin and distribution

The southern African desert locust is a subspecies of the well-known plague desert locust, *Schistocerca gregaria gregaria* (Burm.), from North Africa, being geographically isolated in Africa by the equatorial forest zone. It can inter-breed with the true desert locust, but the offspring are infertile. It is endemic to the Kalahari dune sandveld areas of southern Namibia, Botswana, and South Africa (Northern Cape Province), where outbreaks sometimes coincide with that of the brown locust, often causing confusion with identification. This locust thrives in years of good desert rainfall, but can survive in extremely dry areas (<100 mm annual rainfall). Solitary adults are very strong fliers and can be found over a wide area of the Northern Cape Province and the Namaqualand and Karoo areas of the Western Cape Province, as well as in southern Namibia, often being attracted to the lights of towns. Hoppers are only rarely found outside of the Kalahari sandveld areas.

Identification

This locust has a distinctive small, pointed, throat spur (prosternal tubercle), which is straight, blunt, and slightly inclined backwards. Although capable of producing two distinct polymorphic phases, the solitary (grasshopper) and the gregarious (swarm) phase, it rarely develops into the gregarious swarm phase in the field. Hoppers are generally sluggish and can be caught by hand, but loose-formation transient hopper bands can sometimes be seen marching along the dune 'streets' between the Kalahari sand dunes. Adults are very strong fliers.

Egg: sausage-shaped, about 7mm in length and 1,5mm in diameter, laid in batches (egg pods) with the top part covered with a layer of froth (plug) which hardens.

Nymph (hopper stage): solitary phase hoppers are generally green in colour, while more the more gregarious (transient phase) marching hoppers in the field are often a brown/orange colour. Hoppers in the gregarious swarming phase have not been observed in the field, but in laboratory cages they become a distinctive black with yellow and orange colour patterns.

Adult: sizes range from 70-90 mm for females, and 60-75 mm for males. Irregular spots on the forewings, and semi-transparent hindwings with a yellow basal colour. Solitarious adults are light brown or pale grey in colour, with a light-coloured longitudinal strip extending from the head to the pronotum. The gregarious bright yellow colouring of the North African species is rarely achieved in this sub-species in the field, only being reported during an outbreak in 1934..



Southern African desert locust - solitary adult female. © ARC, 2002

Host plants

The natural plants of the semi-arid areas are preferred, such as 'dubbeltjies' (*Tribulus*), wild pumpkin, and tsama melon (*Citrullus*).

Damage

Migrating adult swarms have occasionally been recorded in the past invading irrigated farming areas along the Orange river and damaging crops such as citrus, cotton, tobacco, vines, and vegetables.

Pest status

This locust rarely reaches a swarm status, with only two major outbreaks having been recorded (1934-35; 1948-49). Localized transient phase hopper concentrations requiring chemical control intervention occur perhaps once per decade after good rains in the Kalahari sand-dune areas of the Northern Cape Province and south-eastern Namibia, where they are considered as being of novelty interest.

Life history

There are three life forms, namely eggs, nymphs (hoppers), and flyers (adults). Females mature in spring and only oviposit in moist sandy soil after good rains have fallen. Under favourable rainfall conditions, two generations can be produced per year. The female lays 2-3 egg pods in her lifetime (laboratory data) with solitary females laying 95-158 eggs per pod, while gregarious females lay smaller clutch sizes with <80 eggs per pod. The average time taken for the eggs to hatch is 14-30 days, depending upon temperature and soil moisture conditions. There are five (5) hopper instars before the adult stage is reached, with an average total hopper life of about 60-80 days. Solitary

adults migrate at night over long distances, and can be occasionally found attracted to street lights at towns throughout the western and central Nama Karoo region. On occasions when adult swarms have formed, they reportedly kept close to the ground and did not fly long distances.

Natural enemies

Little is known about the natural enemies of this sub-species of desert locust, but it is presumed that predators feeding on brown locust outbreaks, such as birds, meerkats, bat-eared fox, jackal, scorpions, and lizards would feed on them.

Management

Monitoring: No official monitoring is undertaken. However, plague locusts are a legislated National pest in South Africa and local farmers/citizens should report the presence of hopper bands or fledging swarms to their nearest Agricultural Extension office. If these populations are considered an economic threat to the local veld or to crops, locust control teams will be organized.

Control: Outbreaks are considered as a novelty and chemical control campaigns have rarely been undertaken against the southern African desert locust, with only two large control campaigns undertaken in 1934-35 and again in 1948. Small-scale hopper concentrations are controlled on occasion. Local outbreaks are controlled by the DoA locust officers using the same brown locust control equipment, namely synthetic pyrethroid insecticides applied from motorized knapsack or bakkie-mounted sprayers.

Further reading

Botha, D.H. Locusts and their control in S.A. (Part 4). The southern African desert locust. *Farming in South Africa*, 45, 110–111+116.

Meinzingen, W.F. 1993. A Guide to Migrant Pest Management. FAO, Rome.

Price, R.E. 2023. Invasions and Local Outbreaks of Four Species of Plague Locusts in South Africa: A Historical Review of Outbreak Dynamics and Patterns. *Insects* 2023, 14, 846. <https://doi.org/10.3390/Insects14110846>.

Waloff, Z. and Pedgley, D.E. 1986. Comparative biogeography and biology of the South American locust, *Schistocerca cancellata* (Serville), and the South African desert locust, *S. gregaria flaviventris* (Burmeister) (Orthoptera: Acrididae): A review. *Bull. Entomol. Res.* 76, 1–20.