



## Black Portuguese millipede

*Ommatoiulus moreletii*

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### Summary:

Rises in black Portuguese millipede populations in recent seasons are likely due to increased uptake of no-till practices and stubble retention. Reduction of paddock stubble during summer may reduce numbers. The presence of millipedes in crops does not necessarily mean damage will occur. Preventative action is a key part to control as there are limited management options after crop-emergence. These millipedes have a shiny, cylindrical and dark coloured body and will curl into a spiral or thrash about violently when disturbed.

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**In recent years black Portuguese millipede damage to emerging canola crops has increased.**

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### Occurrence:

Black Portuguese millipedes are native to Europe and were accidentally introduced into Australia in the mid 1950's to become a common pest in South Australia, Victoria, Tasmania, New South Wales and Western Australia.

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**Wet summers in the recent past have led to an increase in populations in some areas and the growing of more susceptible crops has seen a corresponding increase in damage.**

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### Description:

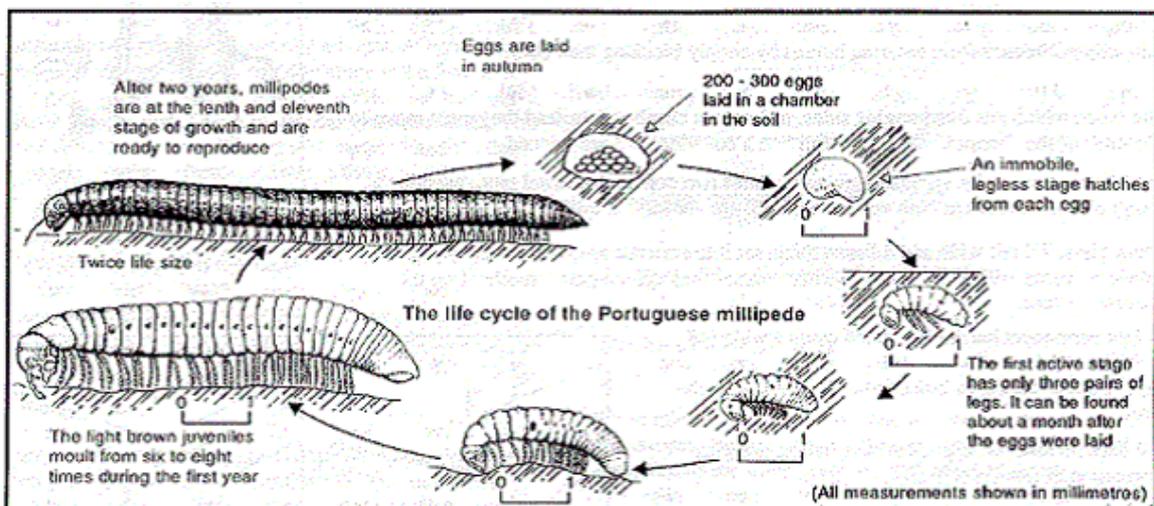
Black Portuguese millipedes have a smooth, cylindrical body made up of 50 segments when fully developed. Adults are 30-45 mm long, dark grey to black in colour and have 2 pairs of legs on most body segments. Juveniles are light brown with a darker stripe along each side of their body.



Black Portuguese millipede adult showing two legs per segment (Source: cesar)

### Lifecycle:

Black Portuguese millipedes commence mating in March/April and lay most eggs in April/May. Adult females lay about 200 yellowish-white eggs into the soil. Immobile and legless juveniles hatch from eggs and develop over a week into the first active stage. Body segments and legs are added with successive moults as they grow through 7, 8 or 9 stages in the first year. After this they moult only during spring and summer. During moulting they are particularly vulnerable before their cuticle or skin hardens. They reach adult size (tenth or eleventh life stage) and maturity after approximately 2 years.



The lifecycle of the black Portuguese millipede (Source: SARDI)

## Behaviour:

Black Portuguese millipedes congregate in large numbers and become quite mobile and conspicuous after the first rains in autumn. A temperature range 17-21°C and humidity of around 95% favour activity. Millipedes feed on organic material including leaf litter, damp decaying wood, fungi and plant roots, mosses, green leaves on the soil surface and pollen. They have a role in breaking down soil organic matter. Due to their feeding habits they accumulate in higher numbers where there is undisturbed leaf litter and organic mulch, or where winter weeds create an almost unbroken ground cover. When disturbed they either curl up in a tight spiral or thrash about trying to escape.

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**Millipedes can move several hundred metres a year and are transported from one property to others and to new locations in plant material and farm machinery.**

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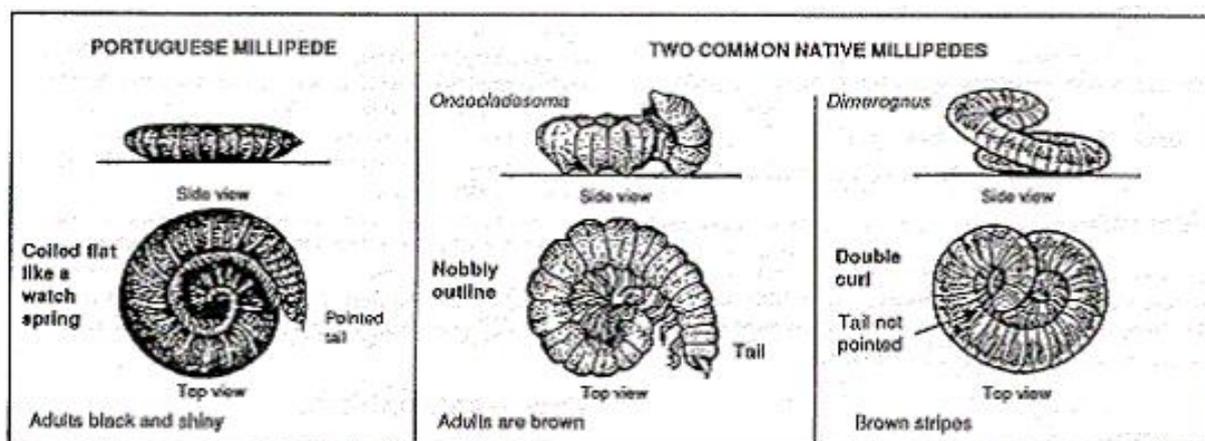
## Similar to:

Although it may be confused with native species, the smooth, cylindrical body of the black Portuguese millipede distinguishes it from these native species.

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**Native species tend to be widespread in low numbers while the black Portuguese millipedes are found in high numbers.**

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Comparison of black Portuguese millipede and two native species (Source: SARDI)

## Crops attacked:

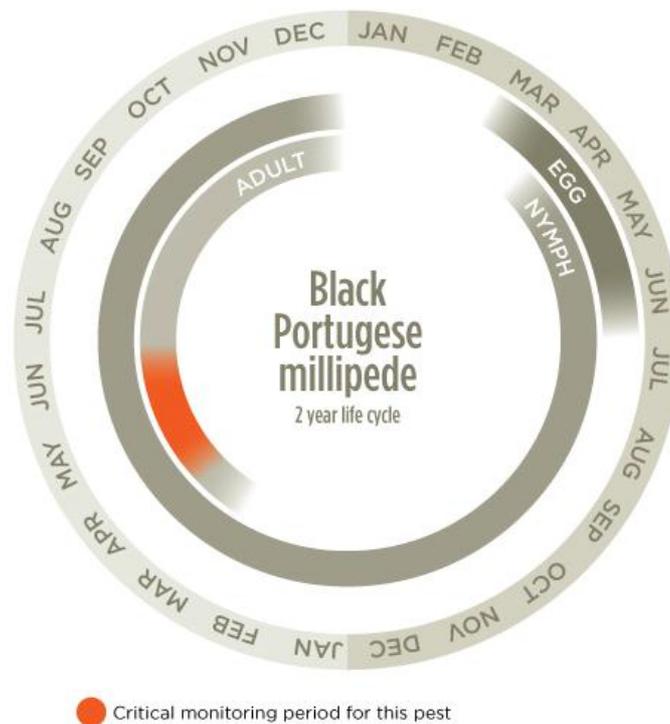
Predominantly canola, but will also attack cereals crops.

## Damage:

Crop feeding damage is relatively rare and somewhat unusual as black Portuguese millipedes generally feed on organic matter such as leaf litter, decaying wood and fungi. There are many instances where high numbers of millipedes are present in a paddock but no crop damage occurs. Black Portuguese millipedes occasionally attack living plants by chewing the leaves and stems. In canola, they remove irregular sections from the leaves, and can kill whole plants if damage is severe. Damage to cereals can also occur when the stems of young plants are chewed. There have been suggestions that millipedes feed on crop plants to access moisture when moisture is limited.

## Monitoring:

Black Portuguese millipedes are mostly active at night and most problematic to emerging crop seedlings. Inspect crops during the establishment period. During hot dry weather, they hide in the soil. Rainfall often stimulates activity of black Portuguese millipedes. During the day, it is best to search under rocks, stubble residue, wood, or to dig up the soil with a spade. Refuge traps such as carpet squares, tiles or pot plant bases can be used to detect millipedes.



Lifecycle, critical monitoring and management periods for the black Portuguese millipede (Source: cesar)

## Economic thresholds:

There have been no thresholds developed for black Portuguese millipedes.

## Management options:

### **Biological:**

The parasitic nematode *Rhabditis necromena* was released in 1988 to parts of South Australia to provide biological control. The pest status of the black Portuguese millipede has decreased in many areas in South Australia since that time, however it is unclear how widely the nematode has spread. Natural predators such as spiders, beetles and scorpions are known to feed on millipedes.

### **Cultural:**

It is believed black Portuguese millipede numbers have increased in recent years due to increased stubble retention, which provides them with a favourable habitat. Removal of trash is an effective management strategy. Burning stubbles in paddocks known to harbor millipedes has been shown to give satisfactory control. Early sowing of high-vigour crop varieties at a higher seeding rate should help compensate for loss of seedlings.

**Chemical:**

There are currently no insecticides registered against black Portuguese millipedes in broadacre crops.

**Acknowledgements:**

This article was compiled by Paul Umina (**cesar**) and Bill Kimber (SARDI).

**References/Further Reading:**

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**Version control:**

Date	Version	Compiled by	Reviewed By
February 2014	1.0	Paul Umina ( <b>cesar</b> ) and Bill Kimber (SARDI)	Garry McDonald ( <b>cesar</b> ) and Alana Govender ( <b>cesar</b> )

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