FACT SHEET

Brown Marmorated Stink Bug (BMSB)

The Brown Marmorated Stink Bug (BMSB), or *Halyomorpha halys,* is considered one of the most significant biosecurity threats to the New Zealand kiwifruit industry.

As pressures on our borders continue, the risk of this pest entering the country is considered very high. If it were to arrive, eradication would be a significant challenge with a low likelihood of success. BMSB would have no problem establishing due to our highly suitable climate and abundance of host material, and as a result kiwifruit growers could expect fruit loss of around 10-30% on affected orchards, from feeding damage and subsequent storage rot.

BMSB can hitchhike on inanimate objects such as cars and shipping containers from Asia, the USA and Europe.

Identification

Every kiwifruit grower should know what BMSB looks like - early detection is our best line of defense.

BMSB is most easily recognised by its large size (14-17mm) which is roughly the same size as a 10-cent coin and larger than other shield bugs found in New Zealand. The bug has a shield-shaped body that is mottled brown with white banding on the antennae and alternating light/dark bands on the outer edge of the abdomen.

Nymphs look different to the adults and are brightly coloured with black and white banding on legs, dark reddish eyes and a yellow-reddish underbelly with black stripes (see images below).

Eggs are plain white or pale green and cylindrical shaped, laid on the undersides of leaves in clusters of about 25. The eggs are only 1mm in diameter but become apparent when nymphs emerge as they stay with the egg mass for several days.

REPORT THE UNUSUAL
KVH 0800 665 825
BIOSECURITY NEW ZEALAND
0800 80 99 66

CATCH IT SNAP IT REPORT IT

FACT SHEET

Signs and symptoms

BMSB has a very wide host range of over 300 plants, including kiwifruit. Adults and nymphs suck on the sap of leaders, young leaves, shoots and fruit.

Injured fruit typically has black spots or blue scars on the skin, flower or fruit drop and deformed fruit. The injured parts of fruit usually turn white and “spongy” and eventually rots (see image on the right).

Reports from kiwifruit growers in Italy, China and Korea indicate fruit loss on affected orchards can be 30% or more.

Adults are mobile and readily move from plants with early ripening fruit to ones with later ripening fruit. They seek shelter in houses/protected areas in autumn/winter.

Control

Eradication of BMSB is extremely difficult and early detection is crucial for success. While traps are available for monitoring and currently used in a surveillance network for early detection, it is not as sensitive as we have for fruit fly. Public reporting of suspect finds is crucial.

Insecticides will be the primary tool in an eradication attempt but are unsuitable for long-term management given the residue issues that would be associated with repeat applications at high dosage rates. Another tool is the parasitoid wasp *Trissolcus japonicas,* aka. the Samurai wasp, which is capable of parasitising BMSB egg populations.

The Samurai wasp was preemptively approved for release in 2018 as a response tool against BMSB. Despite significant progress and pre-emptive approvals, logistical hurdles in rearing and deploying Samurai wasp need to be looked into further, with many knowledge gaps still needing to be filled. Horticultural industries are committed to progressing this research to give us an operationally feasible tool.

If BMSB were to establish in New Zealand, kiwifruit growers would likely manage impacts through a programme of more sustainable control tools such as exclusion with netting, traps, and ‘softer’ chemicals.

Research in collaboration with Zespri Innovation and ZGS is ongoing to develop a long-term management programme.

REPORT THE UNUSUAL
KVH 0800 665 825
BIOSECURITY NEW ZEALAND
0800 80 99 66

CATCH IT SNAP IT REPORT IT

FACT SHEET

Significant research efforts are being put into developing new tools and technology to detect, control and reduce the impacts of BMSB:

- internationally; such as STOPBMSB in the USA (50 researchers across 18 organisations);
- nationally; approach in New Zealand involving the Ministry for Primary Industries (MPI) and industry organisations as well as the BMSB Council;
- kiwifruit specific readiness programme, led by KVH/Zespri to overcome knowledge gaps specific to our sector that are not being addressed elsewhere.

Distribution and climate range

BMSB is now present across three major continents. It is native to Asia and found in China, Japan and Korea. In 1996 it invaded North America, where it has been found in 44 US states and four Canadian provinces. In 2007, it was detected in Switzerland and 28 countries across Europe are now reported to have established populations. BMSB is increasing in numbers and spreading to rural areas including Italian kiwifruit orchards.

A BMSB population was found in Santiago, Chile, in 2015 which represents the first population in the Southern Hemisphere. This potentially increases the risk to New Zealand given our seasonal alignment.

FACT SHEET

How to identify BMSB versus other stink bugs

Brown shield bug
(Dictyotus caenosus)
Approx. 10mm long
Present in New Zealand

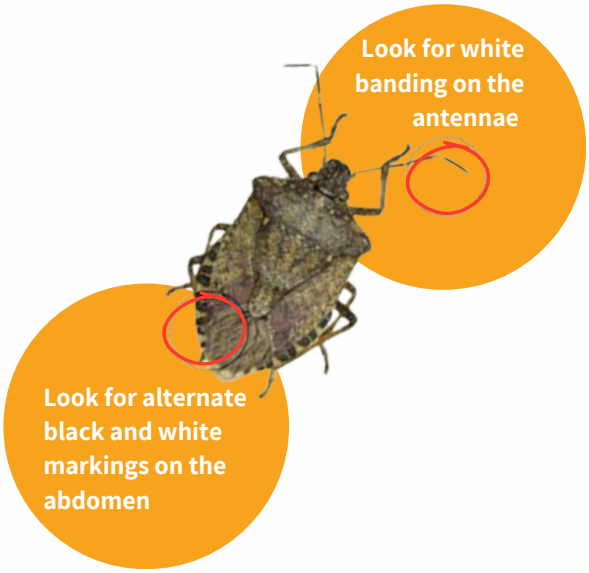
Pittosporum shield bug
(Monteihiella humeralis)
Approx. 9.6mm long
Present in New Zealand

Brown soldier bug
(*Cermatulus nasalis)*
Approx. 15mm long
Present in New Zealand and identifiable by a yellow crescent moon on its back

Brown form of green vegetable bug
(Nezara viridula)
Approx. 17mm long
Present in New Zealand

Brown marmorated stink bug
(Halyomorpha halys)
Approx. 17mm long
Not present in New Zealand

Yellow spotted stink bug
(Erthesina fullo)
Approx. 23mm long
Not present in New Zealand



REPORT THE UNUSUAL
KVH 0800 665 825
BIOSECURITY NEW ZEALAND
0800 80 99 66

CATCH IT SNAP IT REPORT IT