A second ratoon block with soldier fly damage, in the paddock adjacent to the trial site at Finch Hatton. Notice the multiple gaps and small stools in the paddock, and also the absent trash blanket, as burning it is seen as a control method in the region.

Investigating soldier fly control and management

Although soldier fly are not a major pest, they can cause significant yield losses for the farmers who have them, especially in the Mackay, Bundaberg, Maryborough and Childers regions. ***By Jarrod Sartor, Adoption Support Officer, Mackay***

Soldier fly are native insects that inhabit grasslands and can cause serious damage to sugarcane crops. Soldier fly larvae feed on of the root systems of the cane crop. This feeding can result in poor germination at planting, but more commonly causes weak ratooning.

Affected stools have fewer shoots and growth is usually poor with damaged blocks appearing weak and 'gappy'. Soldier fly can live in a wide range of soil types from red volcanic soils and heavy clays to sandy alluvial soils.

Adult flies emerge from late March to July. Each female emerges, mates, lays eggs and dies within 1-2 days. Eggs hatch within 1-3 weeks depending on soil temperature. Larvae feed within 15cm of the soil surface in the sugarcane rows. Once they begin to feed on the sugarcane roots the soldier fly larvae seldom move, unlike cane grubs who often burrow around in the soil.

Recently, new methods to control and manage solider fly are being investigated by the SRA Plant Health group and their leader Dr Andrew Ward. These trials are taking place in both the Bundaberg and Mackay regions and are looking at varietal resistance and new approaches to manage soldier fly with insecticides aimed at prolonging the number of ratoons obtained in fields at high risk of infestation.

The trials in the Mackay region are looking at several insecticides applied at fill-in and their efficacy at reducing soldier fly population. Each chemical has been applied at two rates. Because these chemicals are not registered for control on soldier fly in sugarcane, the cane will not be crushed but will be assessed for its vigour and yield through-out the crop cycle as well as how long infestation can be delayed by using each product.

Though it is not certain how effective these products will be, these trials are exploring a number of potential control options that have not previously been investigated and if successful could provide future control and management options for soldier fly.

These trials are important to growers effected by solider fly because there is currently no insecticide registered for control of the pest. However, natural predators like ants, wireworms, ground beetles and fungal diseases can limit soldier fly population.

Current management practices also help to reduce soldier fly numbers and their impact on the crop include:

1. Taking out affected blocks early in the harvest season
2. Having a grass-free break from cane, i.e. A long herbicide fallow under trash after spray-out of old ratoons, or a short fallow followed by a non-grass crop such as soybeans.
3. Planting the next crop after the soldier fly's flight period (after June).
4. Planting sugarcane using minimum tillage following the herbicide fallow. Keep cultivation for the break-crop minimal but adequate to establish the next crop; extra cultivation does not effectively control soldier fly but will harm the natural predators.
5. Growing varieties with vigorous root systems that ratoon quickly.
6. Harvesting affected plant and early ratoon crops when conditions are favourable for ratooning.