SHIRE OF GINGIN

2010-2011 CONSULTANCY

STABLE FLIES

The first 4 weeks of work specifically targeting fly breeding, and in particular stable flies, has shown that fly breeding is occurring in a vast range of industries and that virtually everybody in the Shire has a role to play in reducing fly breeding. However, some industries have a far greater responsibility and urgent need to reduce fly breeding given the extent of their operations and the sheer numbers of stable flies they are capable of producing. In particular, the 3 major areas of concern that have come out of the first month of work in the Shire of Gingin are:

1) **crop residues associated with vegetable crops (eg cabbage, broccoli, cauliflower)**
2) **reject vegetables fed out to livestock; and**
3) **olive pulp residue simply left on the ground after processing**

1) Crop Residues - given that raw poultry manure will not be available for use by commercial growers in the near future, then the major source of stable fly breeding primarily revolves around crop residue remaining after harvest, which comprises i) stalks, leaves and fruit (either left in or on the ground after harvesting) and ii) harvested crop waste (i.e., damaged and rejected produce, processing scraps) dumped into open pits or fed out to livestock. This has been supported by past research and samples collected from commercial vegetable growers' this February, March and now October 2010.

Most market gardeners still complain about being targeted by the Shire over the stable fly issues, but there is a very good reason for that, and that is because the commercial growing of vegetables produces the vast majority of the stable flies that are affecting livestock and people in this shire. Rotting crop residues are capable of allowing the developing of one to several hundred stable flies per square meter of trashed crop and up to nearly 1,000 stable flies per square meter. When a crop such as broccoli, cauliflower or cabbage is finished being harvested, the sheer amount of vegetable matter on the ground represents a significant potential risk for stable fly breeding if it is left to rot for more than 3-4 days and/or is simply rotary hoed into the soil with minimal physical breakdown in the size of the vegetable matter. If this material is slashed and broken up with a high speed mulcher then left to dry on the surface, then this material will breed very few if any stable flies. I am currently working with Monte & Sons on Sappers Road to make sure that they come up with the optimal equipment to break down their crop residues of the 3 crops mentioned previously. By breaking the crop residue down into small pieces, it will prevent fly breeding AND have the added benefit of allowing them to

put another crop in that area sooner and a reduced risk of disease transmission to the following crop by physically breaking down the residue so that it is rapidly decomposes and returns organic matter to the soil. So, we are asking growers to do something that is counter productive to their vegetable growing regimen. I met with and spoke to Maureen Dobra (President of Vegetables WA) at the Loose Leaf Lettuce Company and talked to her about the work that I am doing in the Shire and the background to the whole issue, to which she was very supportive. I am seeking to give a presentation at the next meeting of the WA Vegetable Growers Association to indicate the dire necessity for proper handling and management of their crop residues.

2) Reject Vegetables Fed to Livestock: Several cattle grower properties were found to have fed out excessive amounts of reject carrots (predominantly), cauliflowers and broccoli to cattle (and to a lesser extent horses), which when left in a large pile/heap results in the cattle trampling on the material, defecating and urinating on the vegetables and as all the vegetables are invariable not eaten due to the volume left and the fact that many get soiled, this material is left to rot on the ground. It may take several weeks for this vegetable matter to breakdown to the point where it is attractive to stable flies, but the resultant mixture of rotting vegetables, manure and urine presents an ideal environment for stable fly breeding to occur. This practice is easily overcome by simply spreading out the vegetables in long, thin lines so that it is all eaten and there is minimal risk of excess material being trodden into the ground and left to rot. I monitor the Loose Leaf Lettuce Company every week to check that where they rake over area lettuce processing scraps fed out to cattle and spread lime to reduce acidity and minimize stable fly breeding. Their current management practice is infinitely better and working well with no evidence of fly breeding.

3) Olive Processing Residue: The process of pressing olives leaves a pulp and seed residue that is simply pumped out onto the soil nearby to the processing plant, where it forms a "larval flow" appearance and is about 50-60cm thick. This material is quite acidic and fermented and has been found to contain significant numbers of fly larvae as the material is exposed to flies after processing and splits and dries forming a cracked and crazed surface that is ideal for flies to search and explore and lay eggs on the moist rotting organic material below. This is a standard method of disposal of the pulp residue across all processing sheds.

SIGNIFICANT FINDINGS/EVENTS

Rotting pile of reject snowpeas and sugar snap peas (Bookine Road)

about 10 cubic metres of rotting material, thousands of maggots
owner buried in large pit, sprayed with Lorsdan, covered with soil, then sprayed soil again to prevent any adult emergence

Reject cauliflowers fed out to cattle (Beermullah Road)

Found large pile of reject cauliflowers mixed with cattle dung, that was alive with maggots – had a work order put out immediately and owner sprayed area with

Lorsban next day to kill all larvae, which on inspection several days later were all found to be dead.

Reject carrots fed out to cattle (Coonabidgee Road)

Cattle owner had placed excessively large pile on ground, cattle would not eat it all – no evidence of fly breeding when inspected, but a very high risk

Delivery of 2 piles of egg layer PM **Prosecution Pending**

Pending prosecution – maggots in manure on delivery already, either way the poultry enterprise the manure came from, the cartage contactor and the person who ordered it will all face prosecution

Fly larvae in rotting cauliflower and cabbage crop residue (Sappers Road)

The remains of both a cauliflower and cabbage crop were simply rotary hoed into the soil after harvest was complete and left to breakdown over several weeks – continual rotary hoeing does not kill any fly larvae it simply moves them about.

Fly larvae in old olive processing pulp residue (Hancock Road & Cowalla Road)

Found large numbers of fly larvae in the processing pulp of olives that is left to simply dry after processing during the months of June to August every year. Many old and spent pupal cases indicated that many flies had already developed from this residue.

Fly larvae in wet manure/grain mix in large cattle feedlot (Cullalla Road)

Fly larvae were found in large numbers in a large cattle feedlot due to continually overflowing water troughs – the flies developing from this material are predominantly stable flies due to the high grain content of the manure. The owners are upgrading the float systems to stop the overflow. .

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