

SHIRE OF GINGIN

STABLE FLY UPDATE – NOVEMBER 2012

Coinciding with the first substantial reports of stable flies affecting livestock and rural residents in the Shire of Gingin, a huge step forward was realized on October 15th when the Minister for Agriculture declared the stable fly as a pest under the Biosecurity and Agricultural Management Act. This announcement was made at Bogdanich Farms on Gingin Brook Road to a large audience of politicians, vegetable industry representatives, commercial growers, landowners, government agency specialists and Shire of Gingin representatives. Department of Food & Agriculture (DAFWA) are looking at a new and novel approach to stable fly control thanks to a new project funded by Horticulture Australia, which provides matching funds to the financial support provided by 8 local government shires mostly affected by this fly, as well as the vegetable industry (vegetablesWA). Those contributing to the project over 2 years include the Shires of Gingin, Wanneroo, Chittering, Dandaragan, Capel and Harvey and the Cities of Swan and Kwinana. Dr Ian McPharlin (Horticultural Development Officer, DAFWA) together with Dr David Cook (Entomologist, University of WA) have embarked on a new approach to minimise stable or biting fly breeding in rotting vegetable crop residues. The current reliance on pesticides is ultimately not sustainable and an economic cost to growers, consumers and the environment. Stable flies still present a major nuisance to livestock owners and rural residents alike along the Swan Coastal Plain around Perth. The progression of commercial vegetable crop production further from Perth into traditional livestock areas has been a significant, contributing factor to this pest fly having a major impact economically, socially and psychologically on many rural landowners. The stable or biting fly is able to breed in a range of rotting plant material, animal manures (especially aged manure) and any mixtures of the two (eg straw bedding soiled with animal manure). This fly of tropical origins is highly suited to our hot climate and the larvae of this species can easily survive on our hot, black sandy soils where temperatures often exceed 50°C. One of the keys to stable fly management in vegetable crop residues is getting the organic matter (OM) broken down as quickly as possible to both a) reduce the potential for stable flies to develop in the material, and b) decrease the time to next planting, which increases productivity. Enhanced biodegradation of vegetable crop residue after harvest will be tested using OM bio-accelerants applied to vegetable crop residues (leaves, stalks, roots and heads) left after harvest is complete. This will be compared with current best management practices where unharvested residues are mulched, sprayed with insecticide, left to dry on the soil surface, and then incorporated into the soil.

Two key, commercial products that are able to accelerate the breakdown of OM show further promise in their application as they should alter the microbial populations that breakdown the rotting crop residues in such a way that stable flies are either: (i) not

attracted to lay eggs on this material, or (ii) unable to develop their larvae or maggots on this material. These products boost the numbers of beneficial microorganisms (bacteria and fungi) in soil, many of which are deleterious to the growth and survival of fly larvae. In simple terms, this project is looking at manipulating the microbial environment within rotting vegetable crop residues in such a way that stable flies won't utilize them to continue their life cycle. In addition, the crop residues will be broken down more rapidly with the use of bioaccelerants that will boost the beneficial microbes in the soil, suppress root diseases and soil pathogens, as well as improve nutrient recycling and soil structure. If successful, this will represent a new and exciting method of significantly reducing this pest fly using products that are highly beneficial to the health of our soils and will help those who continue to be affected by the scourge of the biting, stable fly.