



# Fly Monitoring Program Synopsis 2010

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## Introduction

Residents of communities surrounding mink farms across Newfoundland and Labrador have often complained of fly problems. This has caused land use conflicts between these ranches and the residents and business owners of these areas.

There have been several fly species observed on and around fur farms including, but not limited to, common house flies (*Musca domestica* L), the lesser housefly (*Fannia canicularis* L.), blow flies (*Calliphora* species) and green bottle flies (*Phacenia* species). However it has been observed that the lesser housefly is in the highest population during the fly season prompting the majority of nuisance complaints.

Past research concentrating on fly species associated with animal facilities, such as poultry, has proven several sampling techniques can be used in monitoring populations of flies. Such sampling techniques are baited jug traps, sticky ribbons and spot cards (Lysyk and Axtell, 1986).

## Objectives

The Forestry and Agrifoods Agency commenced a three-year project in 2007 to investigate issues associated with fly problems on farms.

The objectives of this project were:

1. To determine the fly species present on mink farms in the area and to determine the time of year the populations spike;
2. To determine whether the spot card method of assessing fly abundance and activity, used in poultry facilities, can be adapted to mink ranching; and
3. To determine thresholds that can be established from the card numbers that reflect complaint response.

## Materials & Methods

Three locations were setup throughout the island. Each location consisted of on-farm and off-farm monitoring areas, which had both spot cards and sticky ribbons as representative samples. The sizes of the sheds were described as either being small or large. The number of aisles and size of sheds determined the amount of spot cards and sticky ribbons that were needed.

### Sampling Methods:

Lesser house flies were sampled at three mink farms. Each farm consisted of a number of sheds of varying sizes. Approximately half of the sheds housing mink were sampled at each farm. Five spot card sampling locations were established along each aisle within a shed.

Spot cards (8 cm x 13 cm) were placed flush against the rafter at each location in the sheds. Each farm had the same layout for spot cards, dependant on the size of shed (15 for large sheds and 10 for small sheds).

Sticky ribbons (45 cm x 5 cm) were hung vertically from a rafter at the various locations. The devices were placed out during May each year of the project and were replaced at approximately weekly intervals. The number of lesser house flies per ribbon and number of spots per card were counted when sample devices were collected and changed weekly.

## Results

During the project, data was collected from the three sites and compiled. Statistical analysis was completed on this data.

It was found the main fly species on farm during this project were the common house flies, the lesser housefly, blow flies, and green bottle flies. The lesser housefly was determined as the main fly species present through the use of sticky ribbons.

Spot cards and sticky ribbons were correlated at each farm therefore either could be used as an index of fly abundance activity. Ribbons are the preferred method and seem to be more useful for management purposes on farm.

No threshold could be determined for Farm 1 since no complaints were received. The thresholds established for Farm 2 were 34 spots/card/week when using the spot card index method. When using sticky ribbons, the threshold is 1,300 flies/ribbon/week. The thresholds established for Farm 3 when using the spot card index method was 6 spots/card/week and the threshold when using sticky ribbons is 575 flies/ribbon/week.

## Conclusions

It has been determined that the Lesser Housefly is the main nuisance fly species associated with mink ranches across the province of Newfoundland and Labrador. Monitoring the occurrence and abundance of nuisance flies is essential. Though it requires time and scheduling, it may foster better relationships within the community.

Ribbons are the preferred monitoring technique to be used on fur farms across the province. Ribbons seem to be more useful for management purposes and may have a higher implementation rate by producers.

There are several reasons why there was variance between threshold numbers including abundance of flies, dispersal patterns, proximity of residential communities and tolerance levels.

Fly dispersal is related to the total number of flies produced in an area. Secondly, fly dispersal to a neighboring area is often related to the proximity of residential communities from the fly source. The shorter the distance, the more likely flies are to invade the neighboring area, and this distance will vary from farm to farm. Thirdly, people vary in their tolerance for flies. The tolerance of those residents to the flies will vary based on how long they have resided at that location or whether they recently moved there from an urban or suburban neighborhood. As well, if the farm is growing in production, there is a higher possibility of lower tolerance with increased farm sizes.