MSc Thesis Seminar

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*A fly in the ointment: Impact of liquid mink manure on the fly populations in Cavendish, Newfoundland*

Supervisor: Dr. Tom Chapman

Wednesday, July 26 at 2:00 pm
C.W. Andrews Room (SN-3125A)

Abstract

Residents of Cavendish, NL have complained of a serious lesser house fly annoyance issue in Cavendish, NL, for over 15 years. A major mink fur producer of this island has been fingered as a source of these flies as they breed in mink feces. However, the community complaints have prevented the expansion of their operation which has had a detrimental economic impact on this region. To the response of these complaints in 2014, the farm has installed a mechanized feces removal and liquid manure production system, lowering the lesser house fly numbers on the farm. However, the community’s concern quickly shifted to the application of the resulting liquid manure to the surrounding forage-fields. The aims of this project include an assessment of the attraction of lesser house flies to a liquid manure applied field. This study had two hypotheses: i) does liquid manure attract lesser house flies to the field? ii) does liquid manure enable the lesser housefly to breed in the field? We used a demonstration strip plot design; first step for agricultural research. There is no replication in this design, which normally precludes statistical analyses. However, strip plots are simple to set up and can provide guidance on the necessity of a more sophisticated experimental design. The outcome for us was that the lesser house fly was almost absent in the field (total: 22). However, we did capture large numbers of two other fly families (Muscidae and Anthomyiidae), and an assessment of autocorrelation of fly numbers in sticky traps within our strips revealed replicates that we could analyze. The liquid manure, when first applied, was significantly more attractive to these two fly families compared to compost or untreated strips. The two fly families also showed an increase in number immediately after the application of liquid manure, with those numbers dissipating in the weeks following. Non-replicated experimental designs have been applied in a number of contexts (e.g. benthic impacts surrounding oil rigs), but we believe this is the first application in an agricultural setting.