



Novel methods of control of ectoparasites of livestock and poultry

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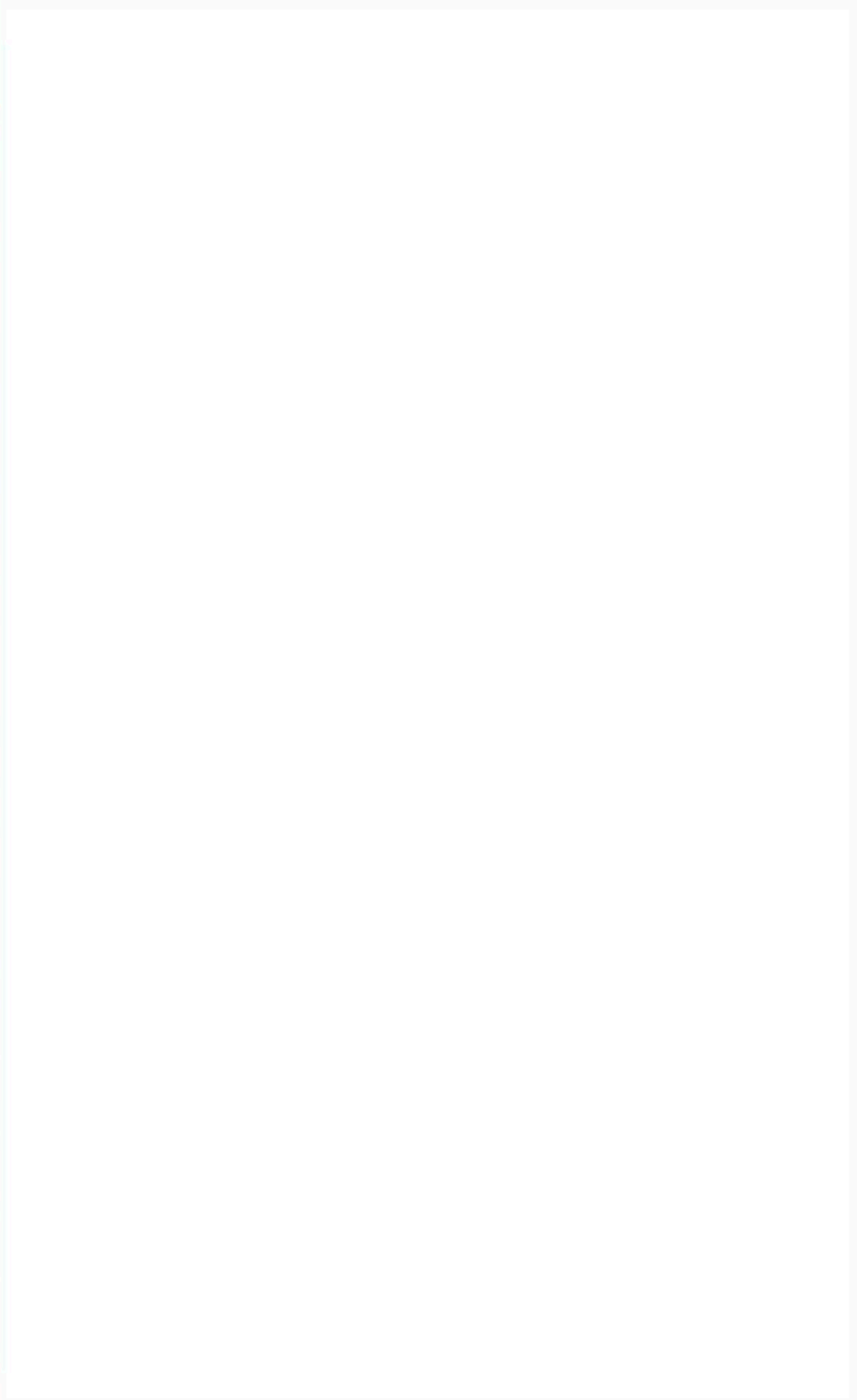


Novel methods of control of ectoparasites of livestock and poultry

- 1. Dealing with fly menace in poultry units**
- 2. Tackling flies and ticks in ruminants**
- 3. Ectoparasites of companion animals**
- 4. Non chemical ways to target ectoparasites**
- 5. How to assess resistance to insecticides and acaricides**



Dealing with fly menace in poultry units





Contents in this lesson

- ▶ **Filth flies encountered in poultry units**
- ▶ **Why is it important to deal with fly menace**
- ▶ **Factors which favour fly menace in poultry**
- ▶ **Brief lifecycle and how it affects fecundity and thus the population densities**
- ▶ **Concepts of control**
- ▶ **Novel methods now employed**



Filth flies commonly encountered in poultry units



This includes *Musca domestica*, *Hermetia illuscens*, *Fannia*

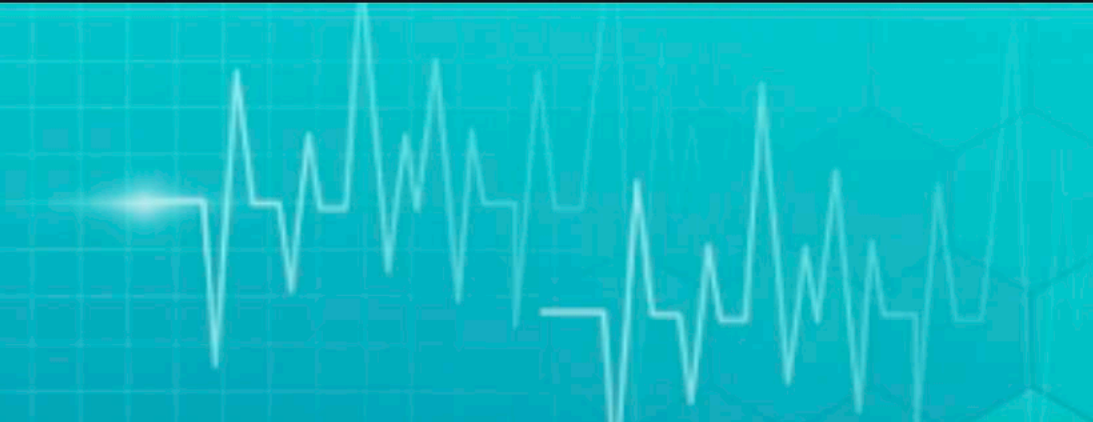


***Hermitia* - larva**



***Hermitia* - adult**





Why is it important to deal with fly menace

Fly menace is important in poultry farms

- Mainly due to economic losses due to fly worry and diseases spread by the flies
- Food safety concerns
- Social ostracization and associated legal problems -a cause of concern





Why is it important to deal with fly menace



Vomit drop



Fly specks



Social issues

- ▶ **Poor community relations**
- ▶ **Negative Psychological impact**
- ▶ **Threat of litigations**





Factors which favour fly menace in poultry

Flies get attracted towards a farm by a number of factors which mainly include

- ▶ **Mainly poultry manure and wet feed. The manure, moisture and ammonia make the environment favourable for the flies to breed and feed at the farm**
- ▶ **Some foul smelling matter present at or around the farm may also be the reason of high fly population in the farm.**
- ▶ **Moist organic matter inside the farm also attracts the different types of fly population**
- ▶ **The contaminated / leaky waterers and feeders can also become source for the flies in the farm**



Why is it so difficult to control flies

- ▶ Flies are everywhere!
- ▶ They are highly resilient
- ▶ Have so many different stages in their lifecycle and each one of them inhabit diverse environmental niche
- ▶ They have a lifecycle which is ideal for coping with environmental challenges
- ▶ Too fast to swat!

Tremendous reproductive potential

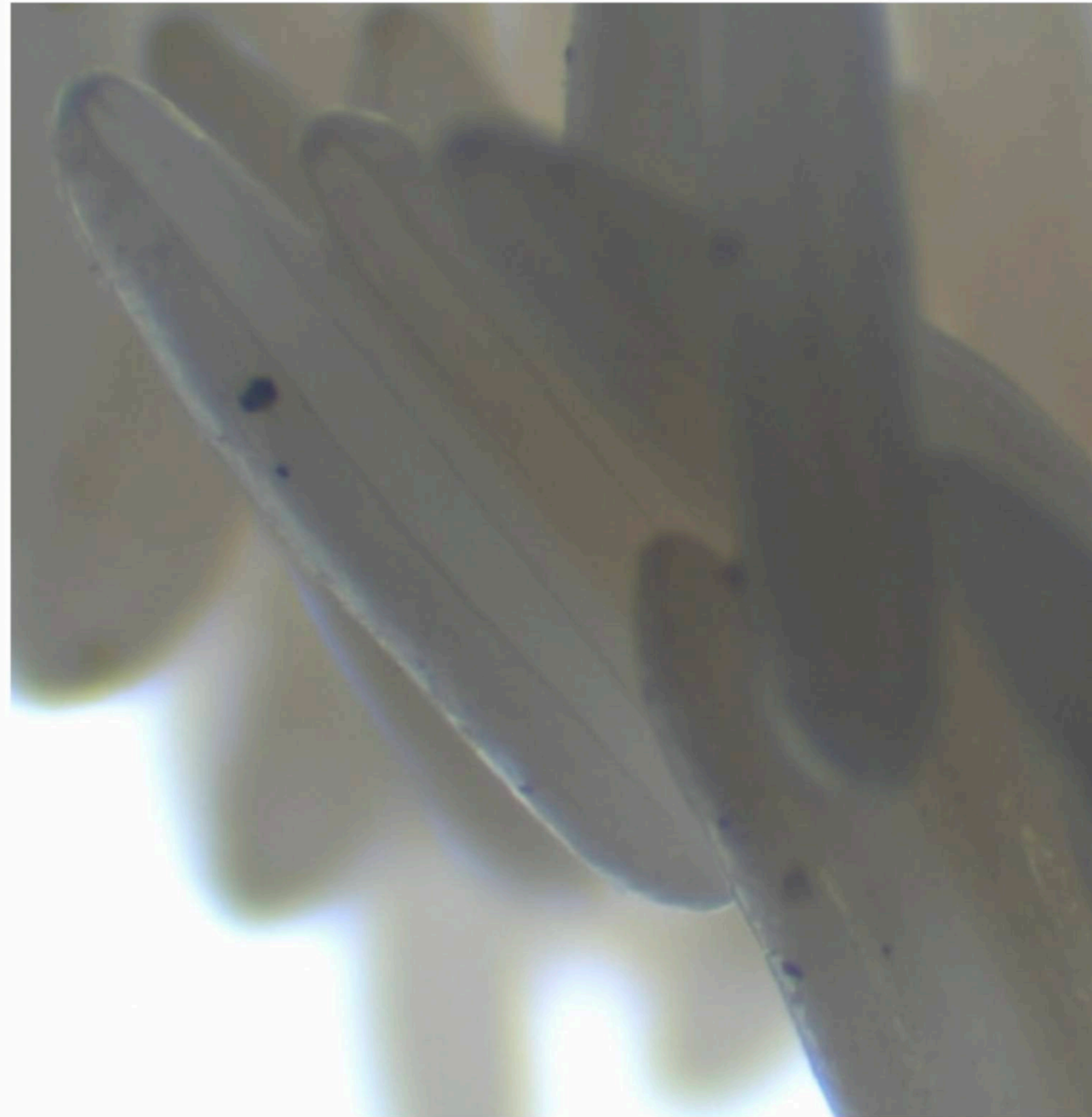


Brief lifecycle and how it affects fecundity and thus the population densities

- ▶ **Flies reproduce and lay their eggs in rotting, decayed, or fermenting organic matter (e.g. garbage, manure, etc.) with moisture content between 50–85%. Fresh poultry manure has approximately 75–80% moisture content, making it a highly desirable medium for development of fly populations.**
- ▶ **Larvae remain in this environment, burrowing into the material. They remain near the surface where conditions are moist, and where they have access to oxygen. They feed on the organic debris, there are three larval stages and the third larval stage subsequently pupates**



Egg cluster of *Musca domestica*



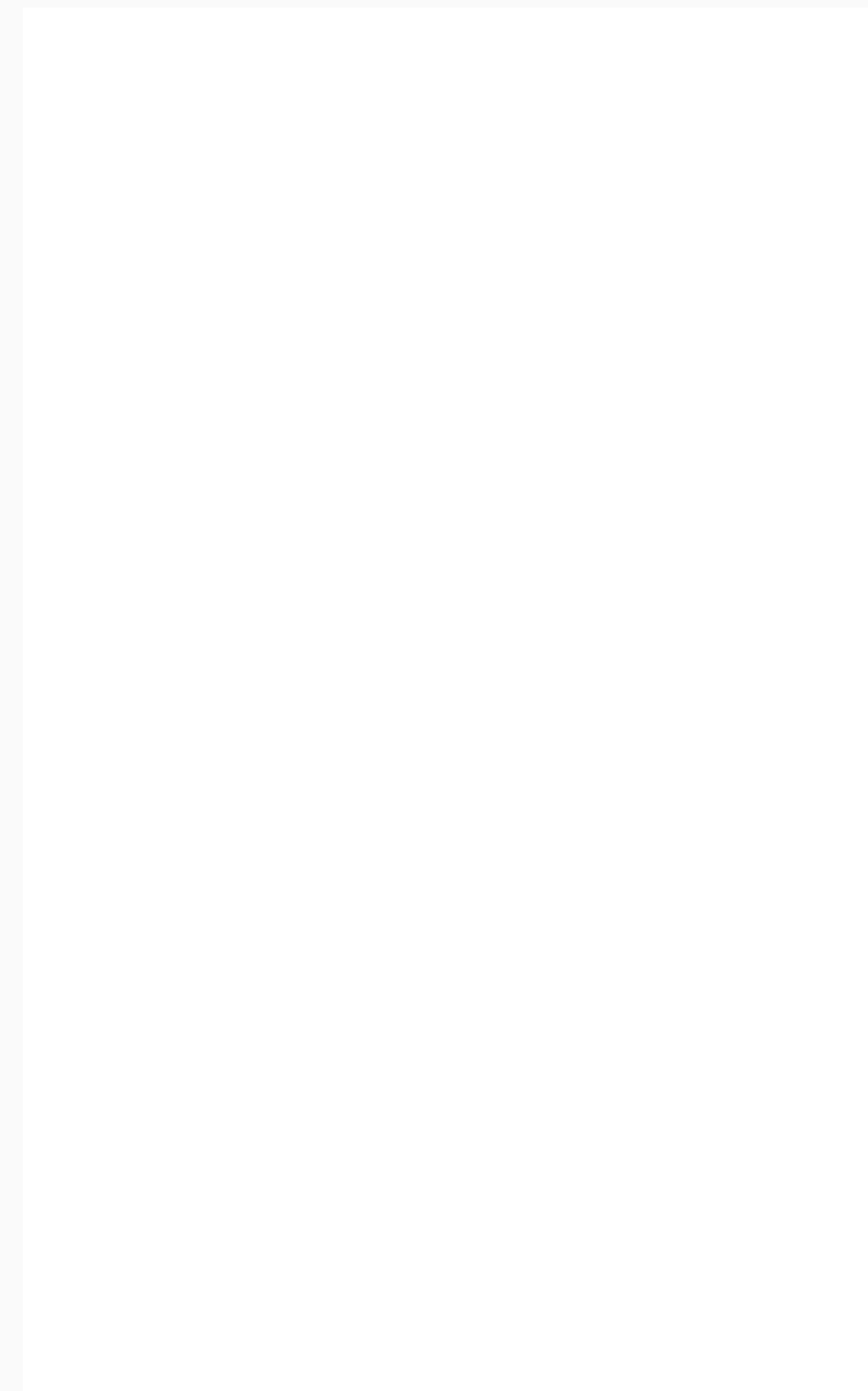


Larvae





Pupa





The most successful programs for fly control combine multiple control methods with diligent monitoring to minimize the economic and health threats posed by flies. Best approach is to use several methods at once with the aim of source reduction





Concepts of control

Aiming to control just the very evident adult population will result only in short term control. In order to effectively control the flies, removal or alteration of the breeding habitat of the fly will ensure effective reduction in the fly population. It also should be remembered that the control process is a year round one and the vigil cannot be dropped at any time. A proactive approach in fly control is the best.

