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The Pennsylvania IPM Program



IPM Best Management Practice - Manure Evaluation Prior to Spreading.
Dr. Gregory Martin, Extension Educator – Poultry.

Soon it will be time for fall clean out of poultry and other livestock facilities prior to winter or the housing of the next herd or flock. For the most part the field application of manure has been dependent upon weather and crop schedules, but there should be some consideration towards the assessment of biological loads that are present in the manure prior to transportation away from the facility. Simply sampling the manure from several areas of a pile or house will give a good indication of the type of insects, and the general condition of the manure prior to being transported. If corrections need to be made, it is better to be ahead of schedule and amend/treat the manure to minimize any adverse environmental effects.

Sound Integrated Pest Management (or IPM), for barn or house management should include the assessment of conditions to prevent the spread of insects to other parts of the farm or community. Chiefly is the use of scouting periodically (once a week for larger facilities) to identify the kind of flies and level of infestation in the area. House flies are those that have white stripes on the thorax, or middle portion of the fly where the insect's wings attach. Stable flies look very similar but have a grey spotted abdomen and needle type mouth that sticks out beyond their head when the fly lights on surfaces, animals and bedding. Face and Horn flies congregate on the animals themselves in large numbers even while pasturing and usually are easy to find if present. House flies can be counted by using white index cards pinned to a wall and counting the specks on half of the card. Note the fly numbers and log these weekly to determine whether IPM controls are effective, or when further controls are indicated.

One of the most difficult treatments is the dewatering of manure. For most operations, the most common method of reducing water content is through evaporation using large volumes of air. Many different systems have been developed to aid in the drying process. The key is to optimize the system that is in place. Eliminate any sources of water leakage into the system. This helps keep manure close to the moisture content of elimination. Fans should be in good repair and move enough air to aid in water removal. Larger farms have moved towards mechanical separation of liquid manure by solids separators prior to placing the water into pits. Be sure that solids are moved to an area for further composting / collection prior to spreading.

Mixing poultry manure with carbon such as straw or shavings can boost composting rates in static piles. The heat generated from these piles can effectively kill fly larvae and eggs. Periodic mixing of the pile will aid in the addition of oxygen to the pile to speed the composting rate. The proper use of dropping boards and drying belts with stacking sheds has proven an effective means of control. If large numbers of fly maggots are found in the piles, an intermediate step would be the piling and tarping of the manure pile in order for the gasification of the pile. In field trials this has shown promise in the control of house flies.

Natural controls can be implemented if the piles are going to be kept for a longer period of time. These are wasps and other organisms that are highly effective against house flies. Be sure to purchase enough numbers of these to match the levels needed for fly control. This may mean weekly or bi-weekly applications to keep up with fly hatching rates. If fly numbers are high, a spray program may be needed to knock down adults prior to opening the barn/house for manure removal. Be sure to follow all label instructions, and safety precautions when using these compounds. Baits and traps have shown promise around piles as well in some applications.

Continue to monitor fly levels out in the field after application to manure. This aids in assessing the effectiveness of an overall IPM program for the farm. This will also help when questions arise in the neighborhood during spreading. By following an IPM plan, the problems with insects in the fall spreading season can be minimalized with good controls.

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SWAT – Is an integrated team of extension educators, industry, and farm individuals interested in animal IPM and the control of flies in rural and suburban locations. For more information on IPM, please review the PA IPM website at: <http://paipm.cas.psu.edu/index.html>

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