**Animal Enhancement Activity – WQL18- Non-Chemical Livestock Pest Control**

**Non-Chemical Livestock Pest Control**
Apply management techniques, devices, and biological agents that control external pests and internal parasites of livestock without the use of synthetic pesticides.

**Land use applicability**
Pasture, Range and Forest (if livestock are grazed)

**Benefits**
Environmental benefits will be operation specific. Benefits may include, but are not limited to improved animal health, reduced risk to humans and improved water quality.

Pests and parasites can have a significant impact on the economic viability of livestock operations by affecting the performance and health of animals. Use of synthetic chemical treatments pose risk to water quality through animal contact and runoff and expose farm workers through product handling. An alternative non-chemical pest control option can address these concerns and provide adequate pest/parasite control in many situations. Non-chemical control may also require increased monitoring and enhanced management applications which can effect a higher overall level of management efficiency.

**Criteria for Non-Chemical Livestock Pest Control**
1. Prepare a written plan addressing basic management considerations, including:
   a. pests/parasites to be controlled, including correct species identification
   b. monitoring process (jug traps, baited cards, on-livestock counts, fecal egg counts, FAMANCHA, etc) to determine when control is needed and control effectiveness
   c. sanitation, cleaning feed/hay sites, and manure removal to reduce breeding sites
   d. rotational grazing and how it will be used to disrupt pest life cycles, minimum residual forage height to reduce parasite ingestion
2. Incorporate two or more of the following applications into the plan as appropriate:
   a. fly parasitic wasp release; hister beetles can additionally be released
   b. traps for house and stable flies, used with fly tape, paper, ribbons, etc.
   c. traps for biting flies or face flies
   d. walk through fly traps for horn flies
   e. fly vacuums
   f. bug zappers
   g. enhance populations of martins, swallows and bats with roost, nesting, breeding sites
3. Incorporate one or more of the following applications into the plan as appropriate:
   a. provide non-invasive plants with secondary compounds such as tannins and terpenes that can reduce internal parasites when grazed by livestock
   b. provide for multi-species grazing to disrupt life cycles of host specific parasites
   c. monitor dung beetle populations and enhance by eliminating or significantly reducing use of detrimental injectable, pour-on, and especially bolus type pesticides
   d. if dung beetle populations are essentially non-existent, harrow or otherwise mechanically treat manure piles to speed up drying and decomposition.
   e. incorporate pastured poultry, such as portable poultry wagons, into pasture rotations to eat fly larvae, 2-3 days after livestock leave pasture
   f. use parasite/pest resistance as a basis for individual genetic selection and culling

**Documentation Requirements for Non-Chemical Livestock Pest Control**

- Written plan that includes basic management consideration and specific selected applications.
- Brief written description of tasks and applications completed, including dates, effectiveness of applications, and other monitoring results.
- Schedule of when grazing occurred on pastures and residual vegetation heights both at start and end of each grazing period.
Additional guidance for non-chemical pest control:

Black flies can be a problem in Idaho. Although black flies are highly mobile, biting intensity usually is greatest next to irrigation canals and streams or rivers where the larval stages of this pest live. Pasture your animals as far away from these pest sources as practical. Unlike mosquitoes, black flies generally do not enter buildings or other enclosed, darkened spaces. Simply-constructed shelters consisting of three solid walls and a roof can provide cattle, horses, sheep and hogs with refuge from biting attack in pastures and rangelands. Black fly control for beef and dairy cattle can be enhanced by placing back rubbers at the entrance to shelters to keep flies out. Black fly attack tends to be heaviest during the morning and early evening hours. When practical, keep your animals inside barns during these biting periods.

Other livestock pests include grubs, lice, mites, face flies, horn flies, stable flies, etc. For some flies, release of biological control agents like parasitic wasps, or walk-through fly traps, may be helpful. Proper manure management is essential to reduce pest problems. Indoor and outdoor fly traps can be very effective. Proper sanitation with clean bedding and cleaning spilled feed can also reduce pest problems. Routine monitoring of livestock for pest problems is important.

For additional information, refer to:

ATTRA, Integrated Parasite Management for Livestock.  

Cornell University, Integrated Management of Flies in and Around Dairy and Livestock Barns.  
http://nysipm.cornell.edu/factsheets/dairy/barnflies/barnflies.asp

Washington State University Cooperative Extension, Livestock IPM.  
http://ipm.wsu.edu/livestock/livestock.html