Management

The Effect of Horn Flies on Cattle Behavior and Performance

By John Paterson, NCBA Executive Director of Education

The horn fly was accidentally introduced into the United States from southern France prior to 1886. Horn flies rank as the number one external parasite causing significant reduction in cattle performance followed by stable flies, ticks, lice, and face flies. It is estimated that horn flies result in an approximate $1 billion loss due to cattle production losses across the nation.

Cattle infested with horn flies will bunch together, expend energy attempting to escape from the flies, reduce their food intake while combating flies and alter grazing behavior due to irritation. Both male and female flies take blood from the host and feed 20-30 times per day. Flies stay on the animal continually, only briefly lying to lay eggs. Our report estimated that on a ranch in Texas where there were 500 head of cattle, the usual horn fly infestation was approximately 6,000 flies for each animal. The loss of blood from the 500 head was estimated to be 7 quarts a day, or about 312 gallons a year.

Numerous research trials have been conducted to determine the effects of horn flies on cattle behavior and performance of cattle. Interesting work from the University of Arkansas has shown that there does appear to be genetic resistance to horn flies by different breeds of cattle and the resistance appears to be moderately heritable. Louisiana workers reported decreasing average horn fly counts for cattle that were 0, 50, 50, 75, and 100 percent Brahman in bloodlines while Arkansas workers concluded that horn fly reduction observed from Brahman breeding was probably a result of continuous spraying with organophosphate insecticides. In a later study, it was suggested that a serological marker to identify horn fly resistant cattle has been identified but needed further validation.

The pain and annoyance caused by these flies is often manifested in reduced milk production, feed efficiency and higher calving losses. Horning studies have concluded that for every 100 horn flies on a cow, calf weight was reduced by 17 lbs. Workers from Nebraska found that the average horn fly weight of steer calves was heavier than horn fly free steer was 13 lbs, greater from live-influenced cattle.

Virginia Tech researchers measured application of insecticide ear tags influenced fly-avoidance behavior (table).

<table>
<thead>
<tr>
<th>Days</th>
<th>Flies/ster</th>
<th>Head throw, %/min</th>
<th>Skin scratch %/min</th>
<th>Tai l flick, %/min</th>
<th>Leg stomp, %/min</th>
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</thead>
<tbody>
<tr>
<td>-2</td>
<td>1090</td>
<td>0.9</td>
<td>3.0</td>
<td>6.5</td>
<td>0.1</td>
</tr>
<tr>
<td>-1</td>
<td>1050</td>
<td>1.1</td>
<td>3.9</td>
<td>10.2</td>
<td>0.8</td>
</tr>
<tr>
<td>0</td>
<td>748</td>
<td>0.5</td>
<td>2.1</td>
<td>9.9</td>
<td>1.4</td>
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<tr>
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<td>120</td>
<td>0.1</td>
<td>2.3</td>
<td>7.8</td>
<td>4.4</td>
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<tr>
<td>2</td>
<td>94</td>
<td>0.1</td>
<td>0.8</td>
<td>7.2</td>
<td>4.6</td>
</tr>
<tr>
<td>3</td>
<td>47</td>
<td>0.0</td>
<td>0.0</td>
<td>6.4</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Results showed that the ear tag decreased the number of flies per tag and after the application of the tags the steers reduced the number of head throws, skin twitches, tail flicks and leg stumps (P<0.05).

WOTUS Exemptions Don’t Address All Uncertainties

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Several agencies have attempted to reorganize the agricultural community across the country by stating this proposal will not hurt agriculture due to the exemptions in the proposal, according to Ashley McDonald, NCBA’s General Counsel. McDonald emphasized that these agricultural exemptions do not, by any means, protect cattlemen from being negatively impacted by the changes.

To: "There is a summary of the exemptions/exclusions and how they function.

Current Exclusions

The current regulation are two exemptions from the category of "waters of the U.S." that involve agriculture:

1. Prior Covered Department (PCDCC)
2. Waste Treatment Systems (WTS)

The WTS exemptions include retention ponds and lagoons that feeding operations use to catch and retain rainwater that have come in contact with manure or cattle. If a water falls into this category, permit are not needed for any impacting activities.

Proposed New Exclusions

The agencies have added the following three exclusions:

A) "artificial ponds used exclusively for stock watering"
B) "ditches that are (1) excavated wholly in uplands, (2) drain only uplands, and (3) have less than perennial flow"
C) "channels that do not contribute flow, either directly or through another water, to a traditional navigable water, interfere water, the territorial seas or an impermissible of a jurisdictional water"

To receive these exclusions, McDonald explained that the water must meet all the requirements above and if these exclusions, if a water qualifies for one of these exclusions, it is outside the jurisdiction of the CWA. 40CFR125 and Fill Program Exempted Activities

While these waters will still be considered "waters of the U.S." there are certain activities that do not need a 404 permit.

These exempted activities are: plowing, seeding, cultivating, harvesting, minor drainage, soil and water conservation, maintenance of drainage, construction of irrigation ditches, construction and maintenance of stock ponds, construction and maintenance of farm and forest roads, and maintenance of structures (dams, dikes, levees).

If you qualify for one of these exemptions, you may engage in other activities that impact the water not actually be exempted. Unfortunately, this section also contains 404(1)(2), known as the "recapture provisions," which gives EPA and the Corps the option to take away any exemptions listed above if the regulator believes the activity is bringing water back into a new use that will result in a "reduction in the reach or impairment of flow." This recapture provision takes away many of the exemptions that 404(1)(1) provides agriculture. Therefore, even these limited activities are not truly exempt. Activities NOT Exempt

Activities not covered by these exemptions include introduction of new cultivation techniques, planting different crops, changing crops to pasture, changing pasture to crops, changing cropland to orchard/vineyard and changing cropland to nurseries. Any of these activities would need a permit.

Additional Exemption

The last exemption is an exclusion from the definition of "discharge" under Sec. 402. The exclusion is for "agricultural stormwater." It does include runoff from fields that have been artificially fertilized applied to them. It does not include a discharge directly to a "water of the U.S." breaking that discharge still subject to permits.

As outlined, the proposed rule not only gives federal agencies unnecessary control over the agricultural community, but it also includes many exemptions that serve little if any benefit to agriculture. Unfortunately, there is an overall agricultural exemption, so even water feature on your farm or ranch must be analyzed to determine if it is excluded or if the planned activity is permitted. McDonald urged cattle producers to tell the EPA these are too many uncertainties and liabilities with their proposed waters of the U.S. by sending a letter through NCBA’s website or www.breyfusa.org.