

# The Latest Across the Plains

## Timely Reminders

- ◆ Use at least two methods of fly control.
- ◆ Deworm cows and bulls with an injectable or drench de-wormer.
- ◆ Semen test bulls and make sure they have an adequate ration including mineral.
- ◆ Review your heat synchronization program and time-line.
- ◆ Put up shades.
- ◆ Make sure that waterers have enough space, recharge rate, and are cleaned weekly.
- ◆ Review your implant program with us.
- ◆ Review rations with current feed costs.
- ◆ Optaflexx® is profitable to feed to conventional feedlot cattle the last 28 days prior to slaughter.
- ◆ Keep pens scraped.
- ◆ Implant suckling calves going to pasture.

## Beef Facts

- The U.S. beef industry has one of the lowest carbon footprints in the world due to cattle genetics, the quality of cattle feeds, animal management techniques, and the use of technology.
- Carbon footprint of grain-finished beef is lower than grass-finished beef due to more efficient utilization of feed in the finishing phase, fewer days on feed, and greater amounts of beef produced per animal.
- Cattle have the ability to convert low-quality, human-inedible feeds into high-quality, high-protein products in the form of beef.

## Unused Feed

*“Cattle producers must become businesspeople who specialize in cattle, rather than cattle producers who function only occasionally as businesspeople.” Tom Lasater*

## Save Money \$\$\$ Test Your Feeds

Tests are relatively inexpensive, usually costing less than \$18, for the information derived. Contact our office to set up an appointment to have us pull feed samples if we have not done so yet.

## Calendar of Events

- **May 31 - June 9** Beef Empire Days, Garden City, KS
- **June 4 - June 5** Nebraska Cattlemen Midyear Meeting, Columbus, Nebraska
- **June 7 - 9** Missouri Cattlemen's All Breeds Junior Show, Sedalia, MO
- **June 17** Father's Day
- **June 17 - 19** Illinois Beef Association Summer Conference, Bloomington, IL
- **June 17 - 19** Colorado Cattlemen's Association Convention, Steamboat, CO
- **June 18 - 21** Beef Improvement Federation Symposium, Brookings, SD
- **June 19–20** Sandhills Ranch Expo Basset, NE
- **June 19–21** Independent Cattlemen's Association Convention and Trade Show, San Marcos, TX.
- **July 8 – 9** MN State Cattlemen's Tour, Morris, MN
- **July 19 - 20** Oklahoma Cattlemen's Association Annual Convention and Trade Show, Norman, OK
- **July 29– August 1** Cattle Industry Summer Business Meeting, Denver, CO
- **August 5 - 7** Texas A&M Beef Cattle Short Course, College Station, TX
- **August 8 - 18** Iowa State Fair, Des Moines, IA
- **August 8 - 18** Missouri State Fair, Sedalia, MO
- **August 12-14** Nebraska Grazing Conference, Des Moines, IA
- **August 23 - September 2** Nebraska State Fair, Grand Island, NE

## Heat Stress

By Ki Fanning, Ph.D. and Jana Gramkow, Ph.D.

With one of the coldest winters in years past us, it is hard to believe it is the time of year to think about heat stress. Cattle have an ideal temperature range, their thermoneutral zone, where they have their lowest maintenance energy requirement. Hahn, 1999 reported this range to be 23 to 77° F for cattle. Factors such as humidity, hair coat length, plane of nutrition and body condition can all have an impact on these temperature ranges. During summer months, high humidity will lower the temperature in which cattle will experience heat stress because it makes it more difficult for them to lose heat through panting and sweating.

There are many management practices that can reduce heat stress. The first one, and most critical, is **water supply**. Animals consume water and urinate to dissipate heat from the body; therefore, it is imperative that your waterers are cleaned weekly and that the recharge rate and water space is adequate to prevent dehydration and maximize water intake. In the summer, the water space should be at least 2 inches per head. The ration should contain salt to encourage water intake. If you are adding onto a lot, or building a new lot, be sure to size the waterers according to the 2-inch rule instead of the waterer manufacturers recommendation, which is usually only ½ inch.

**Shades** reduce cattle's exposure to solar radiation, as well as reduce ground temperature, but has little to no effect on ambient temperature. Bond, 1966 reported that shades could reduce heat load of cattle by as much as 30%. A recent study by University of Nebraska researchers found that cattle provided shade had greater intakes (23.4 vs. 22.9 lbs/day) and average daily gains (4.02 vs. 3.90 lbs/day) compared to cattle with no shade. Additionally, panting scores were less for cattle in shaded pens, and pen surface temperatures were less than surface temperatures of unshaded pens. When installing shades in your feedlot, the shaded area should be 15 to 20 ft<sup>2</sup> per animal. The framed structure should be tall enough to drive a loader underneath, keeping in mind that the taller the shade, the better the air flow. An 80% shade cloth seems to work the best, especially if it is running the length of the mound. Shades should be placed north and south so that the shaded ground is not in the same place all day, preventing the cattle from making a mud hole. It is important to remember that the efficacy of shades is highly dependent on location and the severity of heat in the summer.

**Mounds** 4 to 6 feet high in the lot provide good drainage, windbreaks in the winter, and elevation into better air flow in the summer. Mounds should be run perpendicular to the prevailing wind and ideally run down the middle of the pen starting at the feed bunk and heading towards the back of the pen.

**Sprinklers** can also be added to the pens. They

should put out drops that are large enough to wet the cattle to the hide. If droplets only coat the hair, it will act as an insulator and actually conserve body heat. Cattle cool by evaporative cooling so as the animal dries the water pulls heat from the body. Sprinklers should be started around 85° F and can run 15 minutes on and 5 minutes off or constantly, making sure that you are not putting out so much water that you are creating a mud hole. Creating a mud hole that covers part of the cattle's hide in mud acts as an insulator and is counter-productive.

**Cattle handling** elevates cattle's body temperature and should be avoided on hot days. If cattle must be handled during hot days, handling times should be scheduled for early mornings, prior to 10 a.m. If you are going to work cattle in the evening, you should wait at least 6 hours after sundown so that the cattle have adequate time to cool down.

**Essential Oils** can be added to the ration to help alleviate the effects of heat stress on the animal. Research has shown that some essential oils contain compounds, such as capsicum, that are natural vasodilators. Vasodilatation of blood vessels improves blood and nutrient flow, and potentially helps the animal release body heat.

**Fly Control** strategies should be implemented during the spring time to help reduce fly populations during the summer. Flies are an additional stressor that can cause cattle to gather, which reduces airflow. We recommend a combination of at least two fly control strategies from the time of the last hard freeze of spring to the first killing frost in the fall in your local area.

**Evening feedings** can be done as 100% of the daily allowance at 4:00 to 6:00 p.m., or 30% in the morning and 70% in the evening, or somewhere in between. This will move the heat of fermentation created by the digestion of feed to the night resulting in cattle staying on feed longer when a heat wave occurs. Cattle do not eat much feed in the afternoon, so the feed ends up setting in the bunk, heating, and going out of condition. The cattle eat their biggest meal prior to the sun coming up in the summer, so if the bunks are slicked late at night then they do not have feed in front of them when they want to eat the biggest meal.

This year has been a challenge and there is no reason to believe that summer will be any different, so in order to maintain good performance through the summer months one or two preventative steps should be taken. If you have questions, please contact one of our consultants.

## Garlic and Insect Control

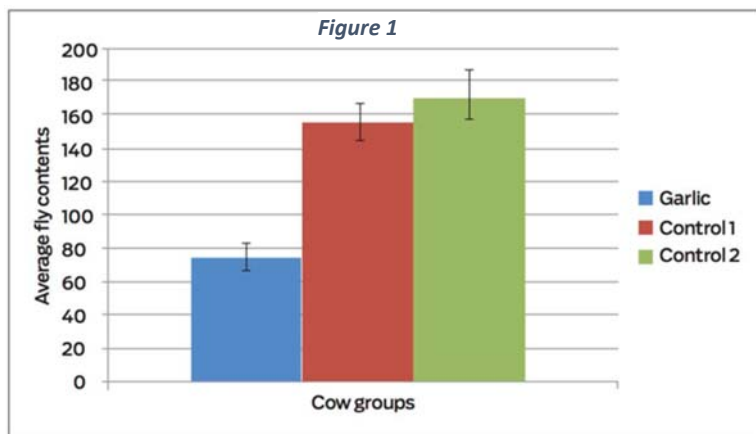
By Luke Tewes

For farmers and ranchers, insect control during wet springs and hot summers is a never-ending battle. Cattle swatting with their tails, licking their backs, twitching their

flanks, and kicking at their bellies with their hind legs, are all good indicators that you might have an external insect problem. There are a variety of insect control technologies on the market today, but one of the more recently studied options is garlic. Traditionally, garlic has only been considered as a palatability enhancer. However, recent research has suggested it may now be an effective deterrent of insects, primarily ticks and flies.

Although there is generally limited research on garlic, the few studies that have been conducted have consistently shown less ticks and flies when cattle were fed supplements containing garlic. By no means does garlic eliminate the insect problem entirely, but there are certainly data that would suggest it could help. When ingested, garlic breaks down into a non-metabolizable compound that is absorbed into the bloodstream. The compound is transported to different organs, including the lungs and skin. This non-metabolizable compound is then excreted by cattle via the breath and skin. This results in a garlic aroma surrounding the animal with the idea being that the aroma is what repels the ticks and flies.

A summer long study conducted in Canada found that garlic supplementation reduced horn flies by 52-56%. **Figure 1** shows the results of the three different groups of cattle. The average fly counts were taken monthly from June through September. Control 1 consisted of 115 pairs, Control 2 consisted of 150 pairs, and the Garlic group consisted of 150 pairs. The garlic group received TM salt mixed with garlic powder at 2.1 percent of the weight of the TM salt starting on arrival. Fly contents include: face flies around eyes mouth and muzzle, horn flies on the poll, back, sides, and undersides, and stable flies sticking to the legs.



Another potential benefit of supplementing garlic is prevention of anaplasmosis. Thought to be mostly a tick-borne disease, anaplasmosis is where blood parasites attack red blood cells and reduce their ability to carry

oxygen throughout the blood. Older cattle often times cannot keep up with red cell reproductions and die. Although there have not been studies done on deer ticks, several studies have shown that garlic does reduce the overall number of ticks on the body of an animal over an allotted period of time. A commercial trial conducted in South Africa showed a reduction of brown ear ticks when a garlic feed additive was included in the diet compared to cattle fed no garlic. Cattle were assigned to 1 of 4 treatment groups, the control group with no garlic, and the others had different levels of garlic added to the diet. Results, outlined in **Figure 2**, showed that cattle with added garlic to the diet averaged a 28.3% reduction of ticks on their body than the cattle with no garlic added to the diet. Ticks were gathered around different areas of the body with the most significant difference in numbers being around the ear. On average there were 65.4% less ticks around the ear in cattle with garlic in the diet than cattle without.

Figure 2

Area	Treatments				P-value
	CON	0.5G	1.5G	4.0G	
Neck	1.94 <sup>ab</sup>	2.86 <sup>a</sup>	1.34 <sup>bc</sup>	2.32 <sup>bc</sup>	0.04
Upper Body	0.56 <sup>a</sup>	0.34 <sup>ab</sup>	0.55 <sup>a</sup>	0.19 <sup>b</sup>	0.02
Under Body	3.55	4.37	4.42	3.84	0.66
Sheath	3.34 <sup>a</sup>	2.39 <sup>ab</sup>	2.31 <sup>ab</sup>	2.12 <sup>b</sup>	0.18
Testes	4.36	2.93	3.61	3.37	0.31
Inner leg	4.68	4.46	5.25	5.43	0.78
Under tail	5.5 <sup>a</sup>	12.62 <sup>b</sup>	7.86 <sup>c</sup>	7.78 <sup>c</sup>	< 0.001
Ear	25.8 <sup>a</sup>	10.15 <sup>b</sup>	8.42 <sup>b</sup>	8.24 <sup>b</sup>	< 0.001
Whole Body	49.73 <sup>a</sup>	39.96 <sup>b</sup>	33.75 <sup>c</sup>	33.3 <sup>c</sup>	< 0.001

There are several different options available for supplementing garlic. It is important to note that different products have different concentrations of garlic. Some of these options include: 1. Mixing garlic powder with a salt supplement in an open tub or feeder for pasture cattle. 2. mineral supplement. 3. Feed blocks (or licks) 4. Added garlic supplement to the ration.

These data suggest that garlic could potentially reduce the number of ticks and flies on cattle, which can improve the general health of individual animals, and ultimately the entire herd. While further research is needed to better understand the mode of action of garlic in beef cattle, it appears to be a viable strategy that may help manage external pests in addition to traditional control methods. We recommend using 1 to 2 other methods of fly control alongside this treatment. If you have questions on supplementing garlic to your herd please contact one of our consultants. [👤](#)



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2019