

# Marion County Extension Newsletter

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## TEXAS A&M AGRI LIFE EXTENSION



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### Topics Covered:

1. **From the Garden:** How to harvest Sunflowers
2. **Beef Today:** Cattle Trends
3. **Cattle:** Beta-agonists in Beef Cattle Rations
3. **Preparedness:** Winter Storms
4. **Community Development:** Optimist Club
5. **Credits**



Thanksgiving is a time to reflect on family and good things that have happened over the past years. It is a time to be Thankful for all we have. We live in the United States of America, the most blessed land in the entire world. It may not seem like that all the times, but some Americans take for granted how much we have to eat. I was just reading an article about Shuanghui International Holdings Ltd. purchase of Smithfield Foods for \$4.7 Billion, and thought what if we had to rely on foreign countries for food. Americans should not take for granted food our abundant food supply. According to this article, Chinese don't trust their food supply!

<http://www.nytimes.com/2013/11/06/opinion/bittman-on-becoming-chinas-farm-team.html?ref=agriculture&r=0>

## From the Garden:



I love the look of those huge yellow flowers growing in my garden and I also love the tasty seeds, but I have a hard time getting any seeds away from the birds! In order to harvest your sunflower seeds you may need to take some extra steps. Here are some tips:

1. **Wrap the Flowers** – When the sunflowers are fully grown and start to go to seed you may need to wrap the head to keep the birds and other predators out. This also helps to keep the seeds from falling out onto the ground. You can wrap the head in a brown paper bag or in cheese cloth. As long as it lets the seeds dry without moisture you should be able to harvest the full head of seeds.
2. **Cut and Dry** – If letting the seeds ripen on the flower is not in your books then you can cut off the head and let the seeds dry indoors. Cut off the flower about a foot before the head. Then wrap the head in a paper bag or cloth and hang it upside down in a dry, warm area like a garage or shed. Keep it dry and the seeds should just fall off when they are ready.
3. **Shake It** – Speaking of falling off, you should have no trouble removing the seeds from the flower when they are ready. Just shake the bag with the flower head in it and the seeds should drop off easily. If you have to work at it then they are not ready yet.

As you can see, harvesting sunflower seeds is not hard. All it takes is some patience and a little dry air to get you a harvest of tasty and nutritious sunflower seeds.

### Author Bio

Nancy Parker is a regular contributor to [www.enannysource.com](http://www.enannysource.com) and she loves to write about wide range of subjects like health, Parenting, Child Care, Babysitting, nanny background check tips etc.

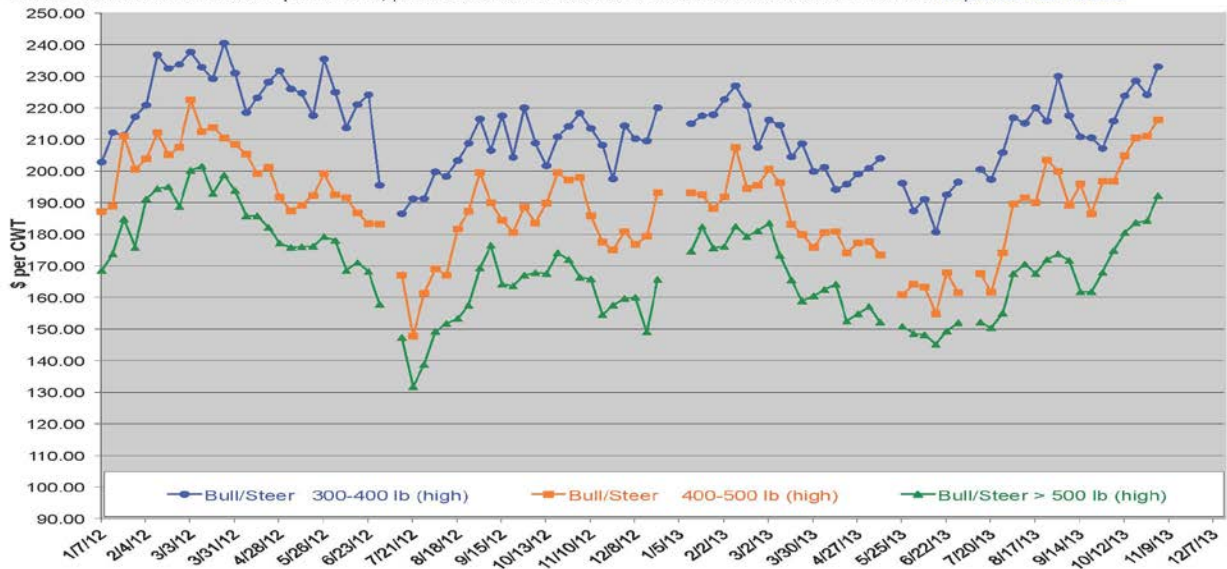
# Beef Today

## Calf Price Trends

### Trend of Highest Prices Reported for Various Weight Calves, Average of 3 East Texas Livestock Auctions

For a weekly email copy of this chart, please contact your Local Texas AgriLife County Extension Agent

For information on beef cattle production, please visit the Texas A&M Extension Beef Cattle Website: <http://beef.tamu.edu>

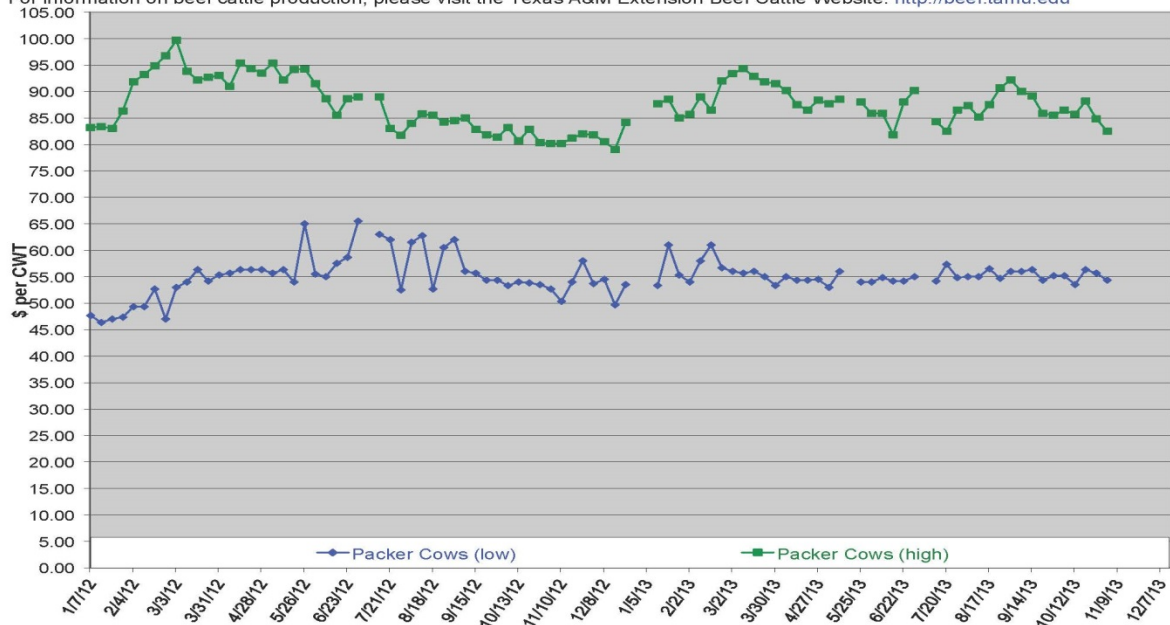


## Packer Cow Price Trends

### Trend of High and Low Prices Reported for Packer Cows, Average of 3 East Texas Livestock Auctions

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For information on beef cattle production, please visit the Texas A&M Extension Beef Cattle Website: <http://beef.tamu.edu>

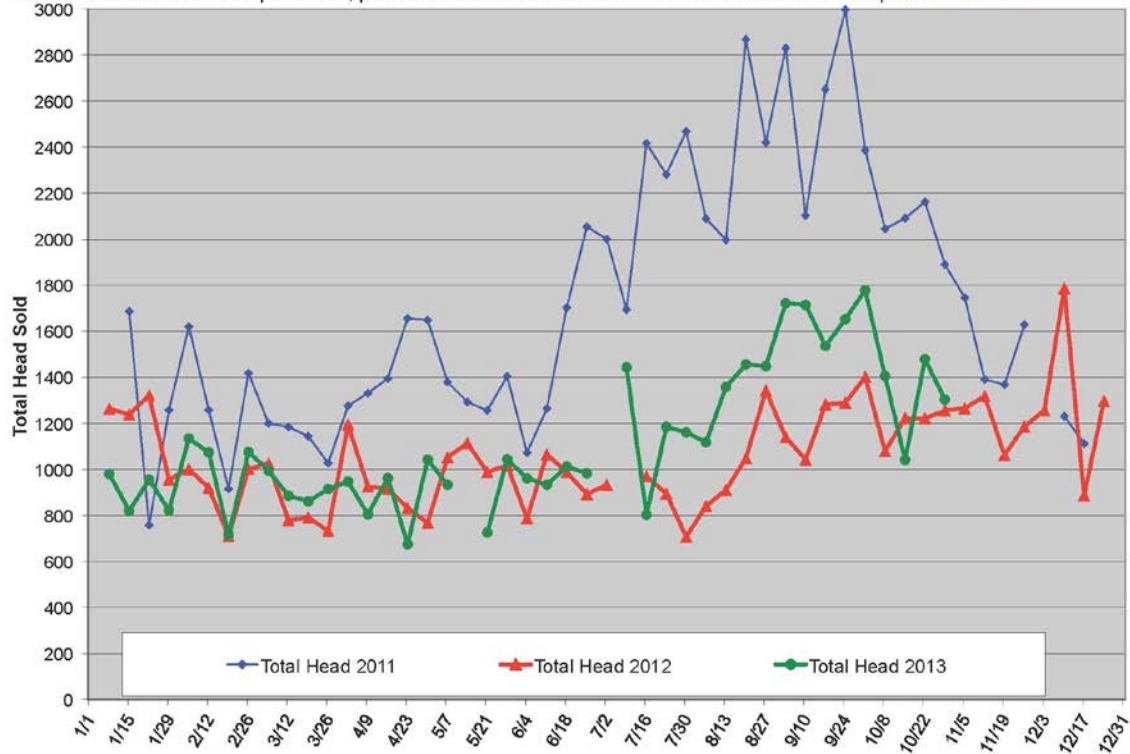


## Total Head Sold Trends

### Trend of Total Head Sold, Average of 3 East Texas Livestock Auctions

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For information on beef cattle production, please visit the Texas A&M Extension Beef Cattle Website: <http://beef.tamu.edu>



Charts by Dr. Jason Banta, Associate Professor & Extension Beef Cattle Specialist Texas A&M AgriLife Research and Extension Center

## Beta-agonists in Beef Cattle Rations

Beta-agonists have been available and included in some finishing rations for beef cattle for over nine years. Recently, isolated instances of lameness and mobility issues of finished cattle after arrival at a packing plant were alleged to be associated with the feeding of zilpaterol [one of two FDA-approved beta-agonists]. Several other factors could be associated with these observations of immobility: heat, genetics and feed mixing to name a few. For now, the manufacturer of zilpaterol has voluntarily suspended distribution while the company and independent experts determine potential causes of lameness and other mobility issues that have been reported. Beta-agonists are not growth hormones or antibiotics. When fed to beef cattle late in the finishing phase, they direct nutrients toward muscle at the expense of fat accumulation. Thus cattle can be efficiently fed 3-4 weeks longer and gain an additional 15-30 pounds of carcass weight, which translates into more retail beef yield. U.S. beef remains a safe, wholesome heart-healthy source of protein, B vitamins, zinc and iron.

<http://animalscience.tamu.edu/academics/beef/publications/>





# Bale Weight: How Important Is It?

Jason Banta\*

**B**ale weight and nutrient content are critical factors in determining the value of a given bale. Bale weight affects not only the amount of hay being bought or sold, but also the cost of feeding and transporting it. To accurately compare the value of different bales—including their transportation and feeding costs—you will need to know their size, weight, and density.

## Bale size and weight

Round bales are generally described by bale width  $\times$  bale diameter, or bale height. For example, a  $5' \times 6'$  bale would be 5 feet wide and 6 feet in diameter and a  $4' \times 5'$  bale would be 4 feet wide and 5 feet in diameter.

Table 1 shows the effect that bale size has on bale weight by using a  $5' \times 5'$  bale that weighs 1,100 pounds (lb) for comparison; this bale would have a

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density of 11.21 cubic feet ( $\text{ft}^3$ ). If all the bales in the table had the same density, those of varying sizes would range in weight from 563 to 1,584 pounds.

Table 1 also illustrates the percentage difference among various sizes of bales:

- A  $4' \times 4'$  bale is only 51 percent the size of a  $5' \times 5'$  bale.
- A  $5' \times 6'$  bale is 44 percent larger than a  $5' \times 5'$  bale.

Given constant quality, we can also compare the relative value of various bale sizes. If a  $5' \times 5'$  bale were worth \$50, then a  $4' \times 4'$  bale would be worth only \$25.60, whereas a  $5' \times 6'$  bale would be worth \$72.

The last column in Table 1 shows what the price per ton would be, if all bales—regardless of weight—were priced at \$50 each. The 1,100-pound bales would cost \$90.91/ton ( $\$50 \div 1,100 \text{ lb} = \$0.04545/\text{lb}$ ;  $2,000 \text{ lb} \times \$0.04545 = \$90.91/\text{ton}$ ). In comparison, the 563-pound bales would cost \$177.56/ton.

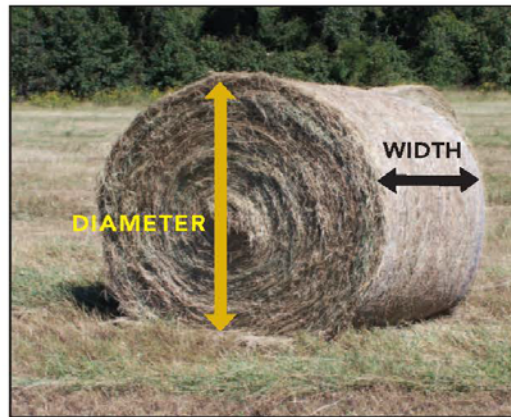
Table 1. Effect of bale size on bale weight and value of large round bales						
Bale width, ft	Bale diameter, ft	Bale volume, ft <sup>3</sup>	Estimated bale weight, lb <sup>1</sup>	Bale size, % of a 5' × 5' bale	Bale value in relation to a 5' × 5' bale <sup>2</sup>	Price per ton if bale cost \$50.00 <sup>3</sup>
4	4	50	563	51	\$25.60	\$177.56
4	5	79	880	80	\$40.00	\$113.64
4	6	113	1,267	115	\$57.60	\$78.91
5	5	98	1,100	100	\$50.00	\$90.91
5	6	141	1,584	144	\$72.00	\$63.13

<sup>1</sup> Assumes all bales are the same density as a 5' × 5' bale that weighs 1,100 lb (11.21 lb/ft<sup>3</sup>).  
<sup>2</sup> Assumes all factors are equal except bale size and weight.  
<sup>3</sup> Price per ton assuming all bales, regardless of size and weight, cost \$50 each.

Large “square” bales also vary in size, weight, and relative value. They typically come in three sizes: 3' × 3' × 8', 3' × 4' × 8', or 4' × 4' × 8'. Assuming the same density used for the round bale example, large “square” bales would range from 807 to 1,435 pounds (Table 2).

### Bale density

Density as influenced by tightness of wrap, or bale compression, can vary considerably, depending on operator preference and the equipment being used. Most balers have a range of settings that allow the operator to increase or decrease wrap tightness and bale compression. Also, some balers can compress more tightly than can



standard equipment; these types of balers are generally used for baling low-density forages like wheat straw.

Another factor affecting bale density is that some forages are naturally denser than others. Both plant maturity and forage species influence forage density. As plants mature, the neutral detergent fiber (NDF) content generally increases, which reduces density.

Consequently, hay produced from young, immature bermudagrass is denser than hay from mature bermudagrass. Differences in forage species also affect density; for example, alfalfa is typically denser than bermudagrass, and bermudagrass is denser than wheat straw.

The examples in Tables 1 and 2 assume a constant density. Table 3 shows how density can affect bale weight when comparing bales of equal size.

### Bale transportation and feeding

Moving harvested forage from the field to a storage area is a time- and fuel-consuming process, just as is moving the hay from storage to feeding area. The number of trips and the amount of time it takes to move hay from the field to a hay lot or barn is directly related to bale size and density.

Table 4 compares the number of trips per acre required to move various size bales if 11,000 pounds of forage is produced per acre during the hay season. If only two bales can be moved at a time, it will take

Table 2. Effect of bale size on bale weight of large square bales				
Bale height, ft	Bale width, ft	Bale length, ft	Bale volume, ft <sup>3</sup>	Estimated bale weight, lb
3	3	8	72	807
3	4	8	96	1,076
4	4	8	128	1,435

<sup>1</sup> Assumes all bales are the same density as a 5' × 5' bale that weighs 1,100 lb (11.21 lb/ft<sup>3</sup>).



twice as much time and money to move bales that weigh 563 pounds than 1,100-pound bales.

Bale weight also affects how often hay must be fed. Table 5 lists the number of bales that would be fed per week if each cow consumes 32.5 pounds per day and there are 30 cows to feed. It would be more economical to feed 6 bales than 14 bales each week.

Other factors that need to be evaluated are the cost of transporting purchased or raised hay and the influence of bale size, weight, and shape on this cost. Consider the number of bales and the number of tons of hay that will fit on a 53-foot semitrailer without exceeding standard width and height regulations. Table 6 illustrates that it is more economical to transport large “square” bales than round bales because more tons of hay can be hauled per load. If transportation costs are \$3.00 per loaded mile, it would cost \$17.94 per ton of hay to transport 38 round bales for 100 miles, compared to only \$13.77 per ton to transport 54 large “square” bales that were 3' × 3' × 8'.

To weigh the hay, have the driver stop at a grain elevator, truck stop, or feed coop with truck scales and get a weight both before and after the hay is loaded or unloaded. Many of these locations will charge only a small fee to get an “empty” weight (such as a semi or truck and trailer without hay) and a “loaded” weight (a semi or truck and trailer with hay); the fee is typically less than \$10 for both weights.

To determine the average bale weight, divide the total weight of the hay by the number of bales on that load. This same process could also be used for hay produced on your property.

**Table 3.** Effect of bale density on bale weight

Bale width, ft	Bale diameter, ft	Bale density, lb/ft <sup>3</sup>	Bale weight, lb
5	5	9.53	935
5	5	10.09	990
5	5	10.65	1,045
5	5	11.21	1,100
5	5	11.77	1,155
5	5	12.33	1,210

An alternative option is to borrow a set of portable load cells and place a platform on top of the load cells (many people have portable load cells for weighing cattle). Individually place a few bales on the platform to determine the average bale weight for each cutting of hay.

Another simple option if you have a hay spike on your feed truck is to stop by the local feed or fertilizer dealer and have the bale weighed there. Weighing one bale is not as accurate as weighing all of them or at least several bales from each cutting, but it is better than not knowing what any of the bales weigh. To get a good estimate of weight, choose a bale that appears representative of the cutting, or take several by at the start of the feeding period.

In general, hay bales from the same field using the same baler will be similar in density and weight. Therefore, when buying hay it may not be necessary to weigh all of the hay to get an accurate assessment of the average weight per bale. Weighing one load

**Table 4.** Effect of bale weight on the number of trips required to move hay from the field to a hay lot

Bale width, ft	Bale diameter, ft	Bale weight, lb <sup>1</sup>	Forage production per acre, lb	Bales produced per acre	Number of trips required to move 2 bales at a time from 1 acre of production <sup>2</sup>
4	4	563	11,000	19.5	10
4	5	880	11,000	12.5	7
4	6	1,267	11,000	8.7	5
5	5	1,100	11,000	10.0	5
5	6	1,584	11,000	6.9	4

<sup>1</sup>Assumes all bales are the same density as a 5' × 5' bale that weighs 1,100 lb.

<sup>2</sup>Assumes that you transport two full-sized bales every trip, except the last trip. In reality, this will not always be possible.

Table 5. Effect of bale weight on the number of bales needed to feed 30 cows for 1 week						
Bale width, ft	Bale diameter, ft	Bale weight, lb <sup>1</sup>	Bale weight after storage losses, lb <sup>2</sup>	Bale weight adjusted for feeding losses, lb <sup>3</sup>	Hay consumed per cow per day, lb <sup>4</sup>	Bales needed per week for 30 cows
4	4	563	507	482	32.5	14.2
4	5	880	792	752	32.5	9.1
4	6	1,267	1,140	1,083	32.5	6.3
5	5	1,100	990	941	32.5	7.3
5	6	1,584	1,426	1,354	32.5	5.0
<sup>1</sup> Assumes all bales are the same density as a 5' x 5' bale that weighs 1,100 lb. <sup>2</sup> Assumes a 10% loss during storage; depending on the situation, storage losses could be lower or much higher. <sup>3</sup> Assumes a 5% loss during feeding; depending on the situation, feeding losses could be much higher. <sup>4</sup> The amount of hay required per cow per day will vary depending on hay quality, nutrient requirements of the cow, and hay feeding losses. This example assumes a 1,300 lb cow eating 2.5% of her body weight per day.						

consisting of several bales should be adequate to determine the average for that field.

However, hay from different fields or varieties should be weighed separately, even if baled with the same baler and the same tension setting on the baler.

Although not addressed in this paper, other important factors that should be considered when buying or selling hay include nutrient content (such as TDN [total digestible nutrients] and percent crude protein), forage condition (free of mold, foreign objects, and weeds), forage species, the potential presence of toxic compounds (such as nitrates), and palatability.

In addition to bale weight, make sure you also consider storage and feeding losses and the cost per unit of energy and protein from each load or cutting of hay to help minimize cattle feeding costs.

Table 6. Effect of bale size and shape on transportation costs <sup>1</sup>					
Bale shape	Round		Large "square"		
Bale size	4' x 5'	4' x 5'	3' x 3' x 8'	3' x 4' x 8'	4' x 4' x 8'
# of bales/load	34	38	54	39	26
Bale weight, lb <sup>2</sup>	880	880	807	1,076	1,435
lb/load	29,920	33,440	43,585	41,971	37,308
tons/load	15.0	16.7	21.8	21.0	18.7
\$/ton/100 miles	\$20.05	\$17.94	\$13.77	\$14.30	\$16.08
<sup>1</sup> Assumes \$3.00 per loaded mile for a 53' semitrailer. <sup>2</sup> Assumes all bales have a density of 11.21 lb/ft <sup>3</sup> .					

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# Preparedness

## Have emergency supplies in a portable kit:

- flashlight, portable battery-operated radio, and extra batteries
- first-aid kit and manual, and essential medicines (week supply)
- at least three gallons of water per person
- protective clothing, bedding, and sturdy shoes
- emergency food that can be prepared without an electric or gas range, and a manual can opener
- an alternate heat source, such as a fireplace, space heater, catalytic camp stove, wood heater, or gas heater
- special items for infant, elderly, or disabled family members
- written instructions on how to turn off electricity, gas, and water if authorities advise you to do so.

## Develop emergency communication plan:

- Ideally, you can get the family together when you know severe winter weather is approaching. However, you should select an out-of-town friend or relative for everyone to check in with if family members are in different locations during a severe storm. Make sure everyone in the family knows the name, address, and phone number of this contact person.
- Know ahead of time what you should do to help elderly or disabled friends, neighbors, or employees.

## Respond

If you are isolated at home during the storm, listen to the radio or television for updates on weather conditions. During severe winter storms, your home heating system could be inoperative for several days. To minimize discomfort and possible health problems during this time:

- Conserve body heat by dressing warmly. Layer your clothing. Many layers of thin clothing are warmer than a single layer of thick clothing. Mittens are warmer than gloves. Wear a hat or cap to prevent body heat loss through the top of the head. If necessary, cover your mouth with scarves to protect your lungs from directly inhaling extremely cold air.
- Improvise with an alternative heat source.
- Confine heating to a single room. Try to select a room on the “warm” side of the house. Close off all rooms except the one to be heated.
- Think safety. Do not burn outdoor barbecue materials, such as charcoal briquettes, inside—even in a fireplace.

- Maintain adequate ventilation to avoid build-up of carbon monoxide when using combustion heating. One person should stay awake to make sure nothing catches fire and that there is adequate ventilation.

## Community Development

A new civic club in Jefferson: Optimists International.

The purposes of an Optimist club are:

- To develop Optimism as a philosophy of life utilizing the tenets of the Optimist Creed;
- To promote an active interest in good government and civic affairs; to inspire respect for the law;
- To promote patriotism and work for international accord and friendship among all people;
- To aid and encourage the development of youth in the belief that the giving of one's self in service to others will advance the well-being of humankind, community life and the world.

Our positive approach, our upbeat outlook, and our commitment to creating a more optimistic future for kids is what differentiates Optimist Clubs from any other volunteer opportunity.

Optimist sponsor special needs in the community and we know that we can make a difference in the lives of others.

### Optimist Creed

Promise yourself to be so strong that nothing can disturb your peace of mind. To talk health, happiness and prosperity to every person you meet. To make all your friends feel that there is something in them. To look at the sunny side of everything and make your optimism come true. To think only of the best, to work only for the best and to expect only the best. To be just as enthusiastic about the success of others as you are about your own. To forget the mistakes of the past and press on to the greater achievements of the future. To wear a cheerful countenance at all times and give every living creature you meet a smile. To give so much time to the improvement of yourself that you have no time to criticize others. To be too large for worry, too noble for anger, too strong for fear, and too happy to permit the presence of trouble.

Officers include: Tera Hearn President, Gary Endsley President Elect; Mike Gannon Treasurer, Carla Bass Secreatry, Board members include: Judge Lex Jones, Brock Fry, Chief Joe Hall.

## **New Officers for the Agriculture Programs Committee:**

**President: Trey Schmidt**

**Secretary: Dalette Schmidt**

**Treasurer: Terrie Nueville**



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***“Improving Lives. Improving Texas.”***