

North Dakota

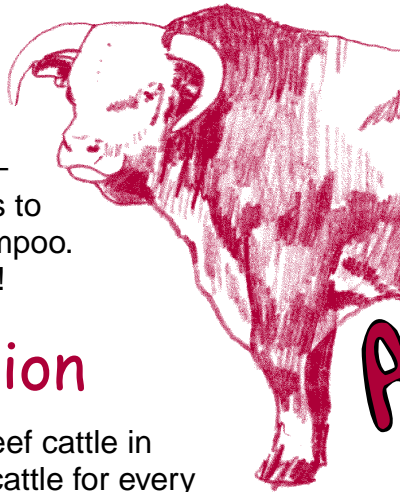
agMag

Spring 2002

A Magazine about Agriculture for North Dakota Students

Beef!

Cattle give us many things – everything from hamburgers to medicine, and steak to shampoo. Let's learn more about beef!



Agriculture! It's farming and ranching and much more. It's the production, processing, distribution and consumption of our food, fiber and forestry products.

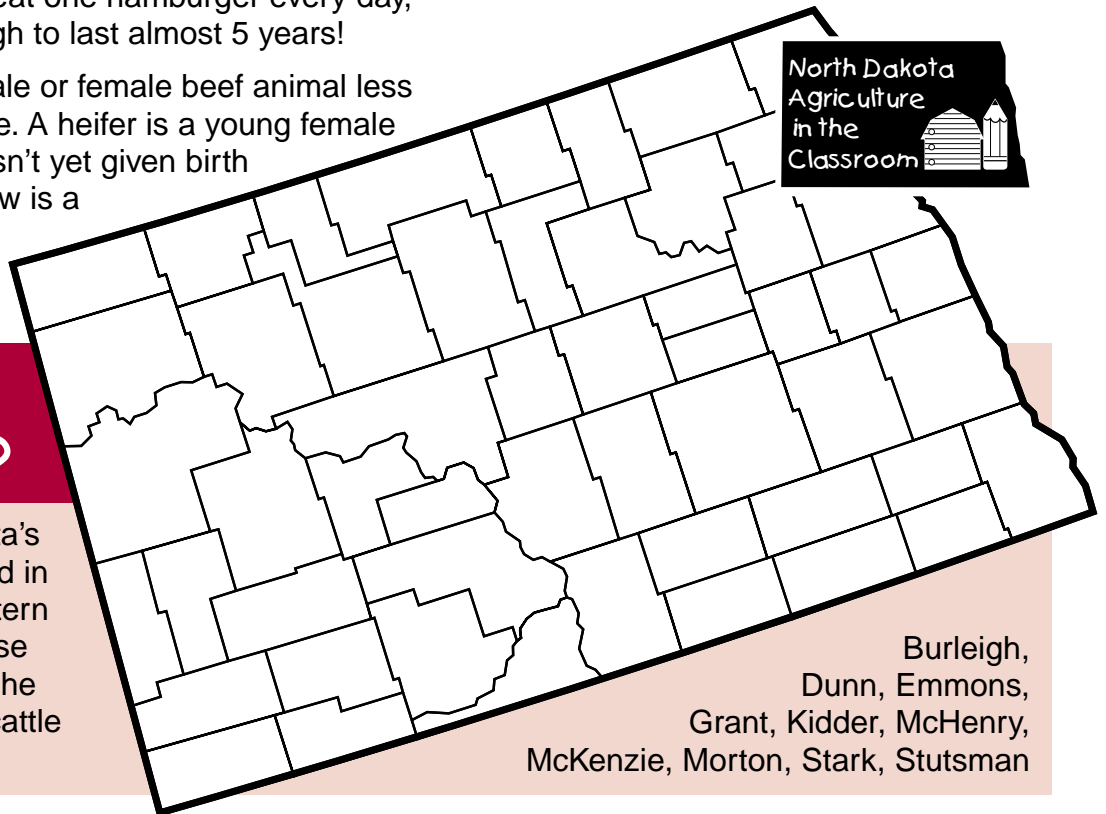
Beef Production

There are about 2 million beef cattle in North Dakota. That's three cattle for every one person in the state.

One 1,000-pound beef animal produces enough meat to make about 1,800 quarter-pound hamburgers. If you eat one hamburger every day, that would be enough to last almost 5 years!

A calf is a young male or female beef animal less than one year of age. A heifer is a young female beef animal that hasn't yet given birth to her first calf. A cow is a beef "mother" and bull a beef "father."

Agriculture Cycle



Where's the Beef?

Most of North Dakota's beef cattle are raised in the central and western parts of the state. Use this map to identify the state's top 10 beef cattle counties.

Burleigh,
Dunn, Emmons,
Grant, Kidder, McHenry,
McKenzie, Morton, Stark, Stutsman

Beef in North Dakota: Then and Now

Then...

In April 1883, the Marquis de Mores, a 24-year-old French nobleman, founded the town of Medora, North Dakota. He built a beef packing plant, a brick plant, a hotel, stores and a large home (the Chateau de Mores) overlooking his new town.

But the Marquis was probably ahead of his time. His dream was to ship meat to large cities in refrigerated train cars instead of herding live animals in cattle drives. But the effort wasn't profitable, and the beef packing plant closed a few years later.

However, he provided Medora with its cowboy

beginning that continues today for tourists.

Now...

Technology has changed how ranches operate.

Ranchers use computers to record information about their cattle. The Internet can provide information to improve their cattle's health and genetics.

Cattle can be identified electronically. Some ranchers insert small computer chips into cattle's

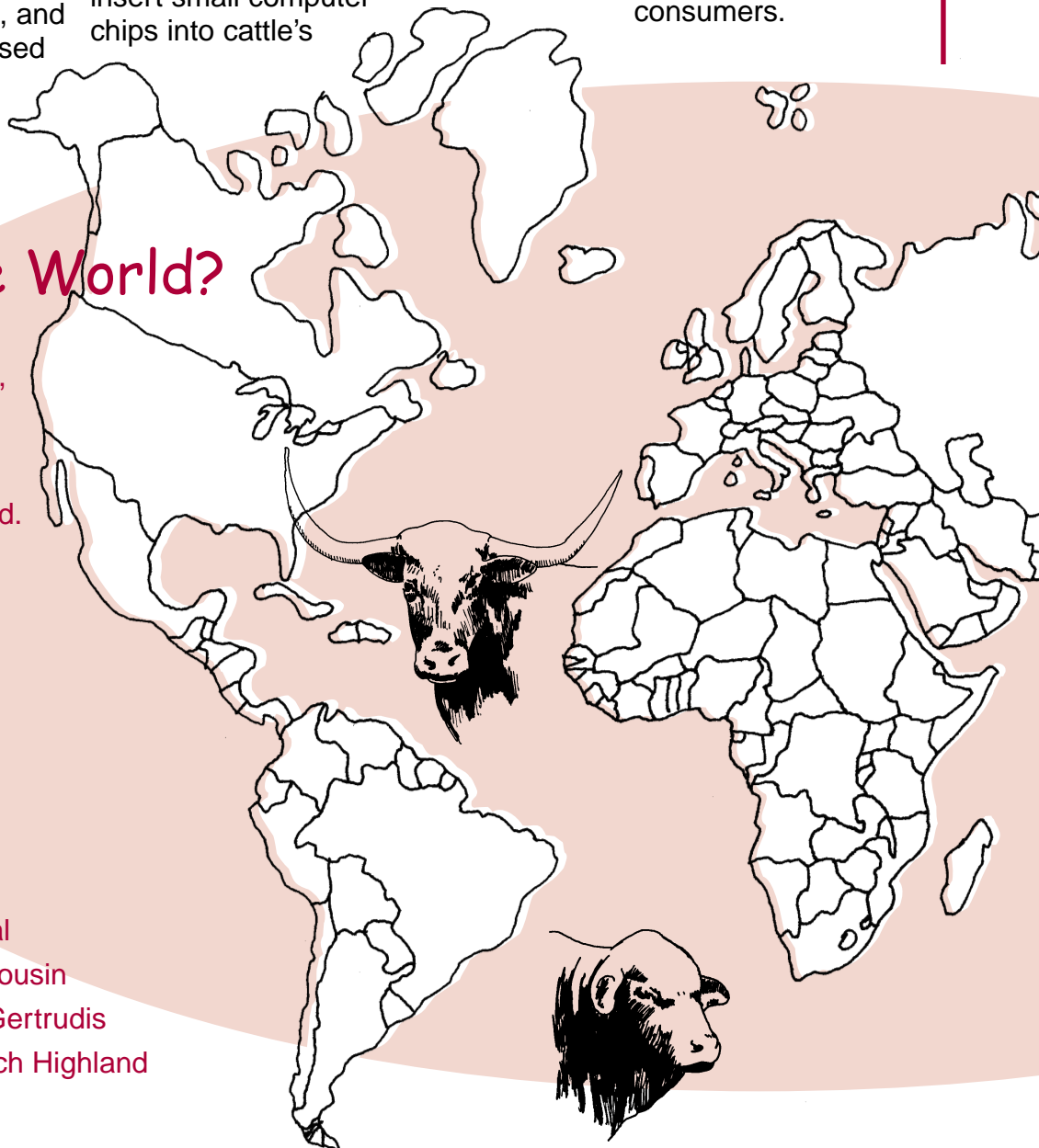
ears that record each animal's life history. Small computers read the chips.

Ranchers are also selling their cattle in new ways. One example of a specific market is the Dakota Halal Processing Company of Harvey, North Dakota. This company was started in 2001 to process beef for Muslims in the U.S. Other ranchers are marketing their beef by promoting certain qualities or by selling straight to supermarkets or consumers.

Where in the World?

Just like poodles and beagles are breeds of dogs, there are many breeds of cattle. On the map, identify the countries where these beef cattle breeds originated.

- India - Zebu, Brahman
- Japan - Waygu
- Italy - Chianina
- Austria - Gelbvieh
- England - Hereford
- Australia - Murray Grey
- Germany - Pinzgauer
- Belgium - Belgian Blue
- Switzerland - Simmental
- France - Charolais, Limousin
- U.S. - Brangus, Santa Gertrudis
- Scotland - Angus, Scotch Highland



Cattle as Conservationists

Cattle benefit the land by:

- Aerating the soil with their hooves. They loosen the soil when they walk on it. This allows more oxygen to enter the soil, helping grass and plants grow better.
- Pressing grass seed into the soil. This helps plants start growing.
- Providing natural fertilizer in the form of manure for the soil, its plants and grass.
- Serving as a fire fighter. When cattle graze, they reduce the length of the grass. This reduces the spread of wildfires since there is less material on the ground to burn.



Yield of a 1,150-Pound Steer

	Pounds	Percentage (Pounds/Total Pounds x 100)
Saleable carcass	714	_____
Hide	87	_____
Blood	87	_____
Bone	55	4.8%
Edible by-products	33	_____
Other non-edible by-products	174	_____
Total	1,150	100%

Dressing percent =

$$\frac{\text{saleable carcass wt.}}{\text{live wt.}} \times 100 = \underline{\hspace{2cm}}$$

If the live value is \$.75 per pound, what is the per pound value of the carcass? _____

Hint: Carcass price = $\frac{\text{live price} \times 100}{\text{dressing \%}}$ = \$ _____

Carcass Calculations

How much meat is available to eat from a 1,150-pound steer, and how much is hide, bone and other nonedible by-products? Use your calculator to figure the percentage of each product from these two animals.

Carcass Composition of 1,150-Pound Steer

Cut	Pounds in 714-lb. Carcass	% in Carcass
Round roasts and steaks	66	9.2%
Tip roasts and steaks	17	_____
Rump roasts	8	34.0%
Ground beef and beef stew	_____	_____
Loin steaks	44	_____
Sirloin steaks	15	_____
Tenderloin steaks	7	4.5%
Rib roasts and steaks	_____	1.3%
Short ribs	_____	13.3%
Chuck roasts and steaks	95	_____
F flank steaks	4	_____
Brisket	16	_____
Miscellaneous cuts	12	_____
Fat and bone	146	_____

Total

If "fat and bone" equal the cutting loss from the 714-pound carcass, how much meat is actually sold from a 1,150 pound steer?

Retail meat = _____ lbs.

Adapted with permission of the 4-H Cooperative Curriculum System from the 4HCCS "Skills for Life" Beef Series

Career Corner

Andrea Grondahl

*North Dakota Meat Inspection Director
North Dakota Department of Agriculture
Bismarck, North Dakota*

Have you ever wondered who makes sure the food you eat is safe? As North Dakota's meat inspection director, Andrea Grondahl's job is to oversee the examination and approval of the meat processed in the state.

When cattle are taken to a processor, a meat inspector makes sure the meat that is produced is safe for consumers to eat. The color and texture, along with scientific measures, determine if the meat is safe to eat.

In North Dakota, one senior inspector and three field inspectors work for the state meat inspection department. The field inspectors in Fargo, Cooperstown and Dickinson are in charge of regularly inspecting 20 to 40 processing plants each, depending on their location. Andrea supervises their inspections and makes sure the plants are following all state and federal rules and regulations, such as cleanliness and proper record keeping.

Andrea and her staff also inspect about 100 small-town butcher shops four times a year. They visit four state-inspected commercial plants about two times a week.

The four largest meat-processing plants in the state are inspected by the federal government with U.S. Department of Agriculture inspectors. This allows meat to be sold across state lines. But the North Dakota inspection program was



started to allow processors that didn't have federal inspection to sell their products through grocery stores and other outlets within North Dakota.

Through her job, Andrea also helps North Dakota cattle producers. "My job helps to create more opportunities for the state's processors and producers," Andrea said. "By providing a place in North Dakota for producers to process their cattle, many new marketing options are created."

Andrea attended North Dakota State University and the University of Minnesota where she graduated in 1996 with a doctorate in veterinary medicine. Andrea began working as the meat inspection director because it was a combination of everything she was looking for in a job. "I love working with food security and traveling across the state meeting and visiting with the plant owners," Andrea said.

North Dakota
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Inspected & Passed

Beef Distribution

The Journey of Beef

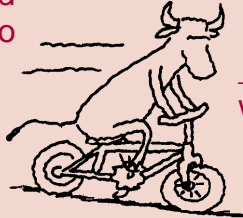
Beef travels through many steps from the farm to your table.

Think about beef production, processing, distribution and consumption to number these steps in the order in which they happen.



_____ When cattle are ready for market at about 1,200 pounds (14-20 months of age), they may be sold at an auction market or sale barn, or bought directly by a cattle buyer who comes to the feedlot and buys for a packer or processor.

_____ Finished cattle are then trucked to a packing plant where they are converted to beef to eat and by-products.



_____ Calves are born on farms and ranches, weighing about 80 pounds at birth.

_____ From the packing plant, beef is shipped to the supermarket where it is purchased to be eaten at home or to schools, restaurants and hospitals.



_____ When 1-year-old calves weigh about 800 pounds, they usually go to a feedlot where they eat grain along with hay or silage until they weigh about 1,200 pounds.

Beef Consumption

The Clean Scene Rap

When cooking and eating, it's important to be clean.

Make some bubbles now to be in the clean scene.

Once you handle meat and before you eat,

Get rid of those bad germs. Clean can't be beat.

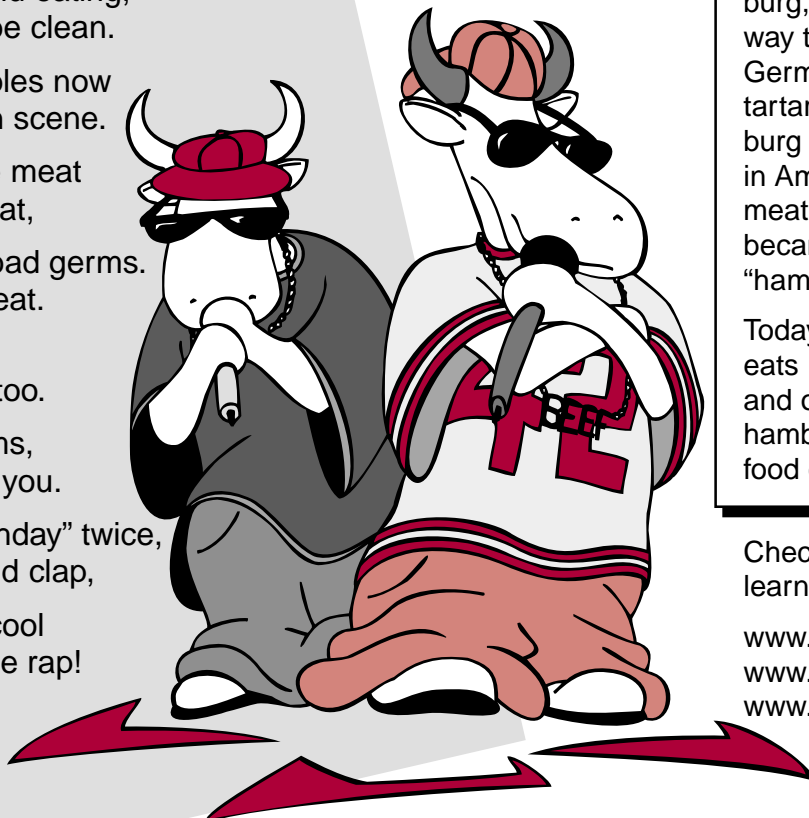
Keepin' it clean means surfaces too.

Utensils get germs, just the same as you.

Sing "Happy Birthday" twice, make bubbles and clap,

'Cause clean is cool in the clean scene rap!

Adapted from Pennsylvania Beef Council



Hamburger History

The 14th century people of the Tartar region in Russia liked their beef raw, chopped finely with salt and pepper. When their ships reached the German port of Hamburg, "tartar steak" found its way to Germany. Soon a German chef cooked the tartar steak to make Hamburg steak. Many years later in America, the chopped meat cooked Hamburg style became known as the "hamburger."

Today the average American eats 114 hamburgers a year, and one poll found that the hamburger is the favorite food of Americans.

Check these Web sites to learn more about beef!

www.agclassroom.org
www.kidsfarm.com
www.burgertown.com

ZIP with Beef

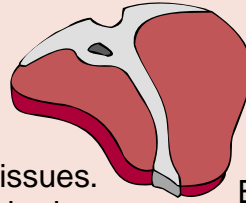
Beef is packed full of power nutrients, including ZIP – zinc, iron and protein.

Zinc is needed for a healthy immune system and to control your appetite. Beef is the #1 source of zinc in the American diet.



Iron helps carry oxygen to your body's cells and tissues. It also helps your brain develop.

Protein helps keep your body energized. You need to eat enough protein every day to support growth and maintenance of muscle and other tissues, and to



replace proteins that are broken down by the body.

Beef is also an excellent source of B vitamins that promote growth and maintain health.

One serving of cooked beef is three ounces. This is about the size of a deck of cards.



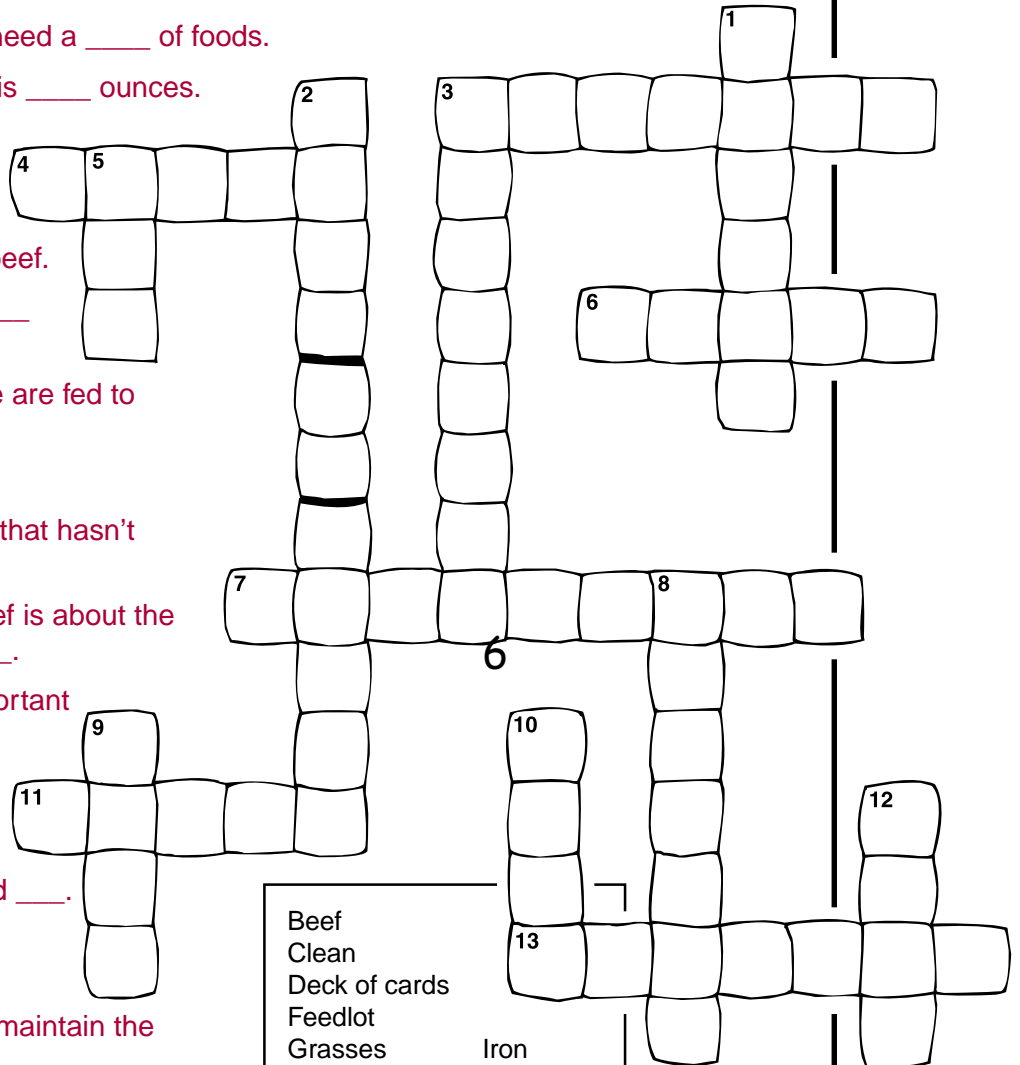
Crossword Puzzle

Across

- 3 To have good nutrition, you need a ____ of foods.
- 4 One serving of cooked beef is ____ ounces.
- 6 When working with food, keep your working area, dishes and hands ____.
- 7 A popular name for ground beef.
- 11 Leather is made from the ____ of cattle.
- 13 A location where many cattle are fed to market weight.

Down

- 1 A young female beef animal that hasn't had a calf yet.
- 2 A three-ounce serving of beef is about the same size as a ____.
- 3 A nutrient in beef that is important for proper brain function and building proteins from amino acids.
- 5 Stored grasses (often in bales) that cattle eat is called ____.
- 8 Cattle eat lots of ____ in the summertime.
- 9 A nutrient in beef that helps maintain the body's immune system.
- 10 The name given to meat from cattle.
- 12 A nutrient in beef that carries oxygen to body cells and tissues.



Beef
Clean
Deck of cards
Feedlot
Grasses
Hamburger
Hay
Heifer
Hides

Iron
Three
Variety
Vitamin B₆
Zinc



Thank you to the following for providing information for this issue of North Dakota Ag Mag:

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4-H Cooperative Curriculum System

Take this issue of North Dakota Ag Mag home to share what you've learned about beef.

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