



# Up Front

► by **John Crouch**, executive vice president

## The future with DNA

*While attending the National Western Stock Show (NWSS) in Denver this January, several questions were posed to me relating to American Angus Association programs and the cost thereof. One such question related to the value of DNA testing for parent verification and its other applications within the Association.*

### Why do we need parent verification?

In 1954, due to the increased use of artificial insemination (AI) technology, the Association passed a rule requiring all AI sires to be blood-typed for use in parent verification. When animals are multiplied by means other than natural service, the potential for inaccurate identification (ID) of parents is greater. For example, human error can occur at breeding time should semen be mislabeled or the wrong straw of semen be selected. A cow assumed to be safe in calf by AI could be bred by a fence-jumping bull.

The need for technology to verify parentage was reinforced with the introduction of embryo technology. A recipient cow believed to be carrying a registered embryo could in fact give birth to her own natural calf.

While problems do not often occur,

parent verification provides accurate methodology for ensuring integrity of pedigrees and of our performance database.

### How does Angus verify parentage?

As science continued to advance animal breeding, the technology available for parent verification progressed as well. Blood-typing was replaced by DNA-typing on Jan. 1, 2001. There are several reasons the switch from blood to DNA was made. DNA testing is more accurate and cost-effective. While blood-typing required a 10 cc blood sample, DNA-typing can be done from hair, semen, a few drops of blood or a tissue sample. In addition, the shelf life of a blood sample is less than a month, while DNA can be stored nearly indefinitely.

### What animals require typing?

Any bull that produces semen for AI and

any dam used in embryo transfer (ET) that was not blood-typed prior to Jan. 1, 2001, must be DNA-typed. In addition, ET animals that result from the mixing of semen, as well as all clones and the source of the cell clone material, must be DNA-typed.

### Other applications of DNA technology

DNA has the power to convince a jury of 12 peers or a single judge that a person is guilty without question and should be sentenced to death. It also has the power to prove that someone previously convicted and serving time is not guilty of a crime, thus allowing him or her to be set free.

DNA is one of the most effective ways for humans to verify parentage. According to the DNA Diagnostics Center, a Clinical Laboratory Improvement Amendments (CLIA)-accredited lab, "DNA paternity test is the most accurate form of paternity testing possible. If the DNA patterns between the child and the alleged father do not match on two or more DNA probes, then that alleged father is 100% excluded, which means he has a 0% probability of paternity—he cannot be the biological father of the child.

"If the DNA patterns between the mother, child and the alleged father match on every DNA probe, then we are able to calculate a probability of paternity of 99.9% or greater. This result indicates that he is 'practically proven' to be the biological father of the child. Most of all the courts in the U.S. accept 99.0% as proof of paternity."

CONTINUED ON PAGE 40

## AMERICAN ANGUS ASSOCIATION

3201 Frederick Ave., Saint Joseph, MO 64506-2997  
Office hours: (M-F) 8 a.m. to 4:30 p.m. (Central)  
phone: (816) 383-5100; fax: (816) 233-9703  
e-mail: angus@angus.org ■ home page: [www.angus.org](http://www.angus.org)

### OFFICERS

**Minnie Lou Bradley**, president, 15591 CR K, Memphis, TX 79245; [bradley3@srcaccess.net](mailto:bradley3@srcaccess.net) ■ **John Crouch**, executive vice president, 3201 Frederick Ave., Saint Joseph, MO 64506; [jcrouch@angus.org](mailto:jcrouch@angus.org) ■ **Ben Eggers**, vice president, 3939 S. Clark, Mexico, MO 65265; [eggers@socket.net](mailto:eggers@socket.net) ■ **Jot Hartley**, treasurer, PO Box 553, Vinita, OK 74301; [jot\\_hartley@hotmail.com](mailto:jot_hartley@hotmail.com)

### BOARD OF DIRECTORS

**Terms expiring in 2005**—**Leo Baker**, 11440 Angus Ln., Saint Onge, SD 57779; [msbaker@mato.com](mailto:msbaker@mato.com) ■ **Gregg Blythe**, 3207 Old River Rd., Decatur, AL 35603; [clydec7@aol.com](mailto:clydec7@aol.com) ■ **Bill Davis**, HC 57, Box 4075-1, Sidney, MT 59270; [rolnrok@direcway.com](mailto:rolnrok@direcway.com) ■ **Robert (Bob) Schlutz**, 260 Colonel's Dr., Box 66, Columbus Junction, IA 52738; [rwschlutz@aol.com](mailto:rwschlutz@aol.com) ■ **John Schurr**, 40842 Farnam Rd., Farnam, NE 69029; [john@schurrtop.com](mailto:john@schurrtop.com)

**Terms expiring in 2006**—**Al DeClerk**, 3914 Engelberg Rd., Pochahontas, AR 72455; [eaferd@cox-internet.com](mailto:eaferd@cox-internet.com) ■ **Joe Hampton**, 2600 Back Creek Rd., Mount Ulla, NC 28125; [rhampton@webkormer.com](mailto:rhampton@webkormer.com) ■ **Paul Hill**, 11503 SR 554, Bidwell, OH 45614; [champion@zoomnet.net](mailto:champion@zoomnet.net) ■ **Dave Smith**, 1601 N. CR 200 E., Greensburg, IN 47240; [dsmith@stewartseeds.com](mailto:dsmith@stewartseeds.com) ■ **Rob Thomas**, 42734 Old Trail Rd., Baker City, OR 97814; [thomasangus@direcway.com](mailto:thomasangus@direcway.com)

**Terms expiring in 2007**—**Jarold Callahan**, 2202 N. 11th, Yukon, OK 73099; [callahan@expressranches.com](mailto:callahan@expressranches.com) ■ **Norman Gaerton**, RR4, Box 153, Nevada, MO 64772; [ngar2@yahoo.com](mailto:ngar2@yahoo.com) ■ **Jay King**, 28287 Woodside Dr., Rock

Falls, IL 61071; [saukvalleyangus@essex1.com](mailto:saukvalleyangus@essex1.com) ■ **Richard (Dick) Tokach**, 5520 CR 81, Saint Anthony, ND 58566; [rtokach@westriv.com](mailto:rtokach@westriv.com) ■ **Phil Trowbridge**, 349 Leggett Rd., Ghent, NY 12075; [p.trow-gall@att.net](mailto:p.trow-gall@att.net)

### ADMINISTRATIVE STAFF

**Executive vice president:** John Crouch

**Administrative secretary:** Diane Strahm

**Vice presidents Finance**—Richard Wilson ■ **Information & Data**

**Programs**—Bill Bowman ■ **Industry Relations**—Jim Shirley

### DEPARTMENTAL STAFF BY DIVISION

**Finance**—Milford Jenkins, director of Foundation development; Kenny Miller, assistant director of finance; Richard Wilson, director of finance  
**Industry Relations**—James Fisher, director of activities & junior activities; Sara Moyer, director of industry & member communications; Jim Shirley, director of commercial programs; Shelia Stannard, director of activity communications and event coordinator

**Information & Data Programs**—Lou Ann Adams, director of information systems; Bill Bowman, director of performance programs; Scott Johnson, director of Angus Information Management Software; Sally Northcutt, director of genetic research; Bryce Schumann, director of member services & office management; Carol Waller, assistant director of member services & office management

### AMERICAN ANGUS AUXILIARY

**President**—Shirley Williams, Van Buren, Ark. For a complete list of officers, refer to 52.

**REGIONAL MANAGERS**—Refer to page 135.

### CERTIFIED ANGUS BEEF LLC

**President**—Jim Riemann, Wooster, Ohio  
For a CAB staff listing, refer to page 249.

DNA's power has allowed the plant world to identify disease, chemical and insect resistance; plant vigor and health; among other desirable traits.

DNA technology continues to open new doors in many areas of the world, and it perhaps is unknown what its potential value will be for the future of the beef industry.

What DNA-typing does offer today is a tamperproof means of permanent ID.

Many breed associations — not only bovine, but other species as well — are trending toward banking DNA of all animals offered for registration. From a global standpoint, many Angus societies around the world are requiring DNA-typing prior to the importation of live animals, semen and embryos. In the future, DNA databases will be used as resources for research as additional genes and markers related to production and/or other traits are identified.

And then there's the legal aspect to consider. The requirement to DNA-type AI sires, donor dams and clones provides the

opportunity to detect an error before it becomes a major problem. It also provides an added comfort level to both buyers and sellers of genetically superior seedstock.

The business of being competitive in the seedstock world is not becoming less complicated; rather, it is becoming more technical in nature. But that's nothing new — it's all about the change that we continually talk about. Only it's not talk, it's reality.



**E-MAIL:** [jcrouch@angus.org](mailto:jcrouch@angus.org)