

DNA Testing Has Practical Farm Use

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NEWARK, Del. — DNA has been in the news recently because of the O.J. Simpson trial and the "fingerprinting" for which DNA

tests are used in court. What is disturbing is that reports about the DNA presentations in the Simpson case either treat these tests as controversial, or worse, describe jurors as "bored" by the explanations.

The message that reporters should be communicating is that these tests are the exciting frontier of science and could have impacts on all of us, our farm animals and our personal lives.

The only difficulty is that these tests are part of genetics, and judging from the responses of many of my students over the years, genetics rarely turns on the average student's interest or enthusiasm. In fact, the study of genetics turns many off.

In people, inherited disorders such as sickle cell anemia or hemophilia can be alleviated through the fruits of genetic research. And in farm animals, certain lethal and semi-lethal traits, which can be very costly, can be prevented through the study of genetics.

Remember the impact of hemophilia in the historic case of the last Russian Czar who had inherited this serious disease from both parents?

The good news is that the more DNA testing becomes part of routine testing, appreciation of genetics will follow. Farm animal breeders already make careful choices about which bull, ram, buck, stallion or boar has the best genetic traits to combine with selected females of the farm herd to produce a better next generation.

Animal breeders track down the history of genetic diseases for their animals and with good economic justification. Through national breed associations, farmers have a reporting system to identify when a genetic disease or abnormality like mulefoot or BLAD (Bovine Leucocyte Adhesion Deficiency) has occurred in newborns on the farm.

Years ago, farmers were expected to report "red" Holstein calves as something abnormal and bad. Now we know better. Red

calves are not only acceptable by Holstein breeders, they are even sought by some.

What we did not know until now is which bull or which cow is a carrier for the red color in Holsteins.

Because the red color is recessive to black, it becomes visible only in homozygous animals. This means that the animals receive the red factor from both parents.

If only one parent transmits the red factor, the calf is a carrier, meaning that it looks black, but it can transmit the red color to its offspring.

Now the exciting news from researchers at the University of Goettingen in Germany is that they have developed a test to identify red-carrier calves as soon as they are born.

We no longer have to wait for a breeding test, which takes at least two years.

Before this novel test, we had to wait first for the calf in question to reach breeding age and then for its

pregnancy to deliver offspring with either black or red color.

The new method from Goettingen is based on DNA testing. The procedure treats the calf's blood DNA with certain chemicals, which make the DNA unfold into certain conformation typical only for red-color calves' genes and different from black-color calves' genes.

Then the two different DNAs are separated in an electric field on an electrophoretic gel, where they can be stained for visibility.

The faster-moving band on the gel is the black gene, the slower-moving band the red gene.

The carrier calf's blood DNA has two bands, a red one and a black one, exhibited by a slow and a fast-moving visible gene.

So here genetics has become visible for the first time thanks to DNA testing. The procedure is accurate and reliable for the early detection of red-carrier calves, which has the potential for considerable economic value in certain herd breeding programs.

Defensive Farming Video

ALBANY, N.Y. — The New York Farm Bureau Communications Department has produced a safety training video that brings the principles of defensive driving to the farm.

The 13-minute video, "Defensive Farming," focuses on avoiding the common hazards around farm machinery, including pinch points, shear points, crush points, pull-in points, wrap points and stored energy.

The video features John Pollock, executive director of the N.Y. Rural Health & Safety Council and a farm safety specialist at Cornell University.

According to Mark F. Emery, director of communications for the 25,000-member New York Farm Bureau, "Each year, there

are over 9,000 injuries and many fatalities on New York farms. This video is the second in a series of training tapes aimed at reducing the number of farm accidents through preventative techniques. Like defensive driving, practicing defensive farming techniques should help make agriculture a safer industry."

To obtain a copy of "Defensive Farming," farmers/farm employers should send \$7.50 (includes postage and handling) to Communications Dept. NY Farm Bureau, P.O. Box 992, Glenmont, NY 12077-0992, or (518) 436-8495. Copies can also be borrowed by contacting the NYFB Communications Dept. or by contacting your county Farm Bureau president.



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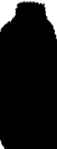
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