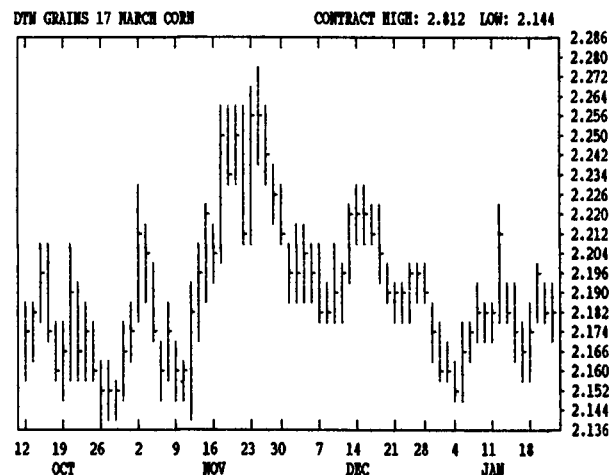
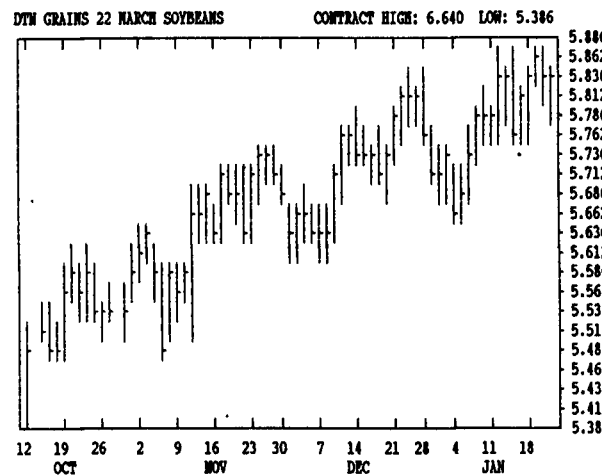
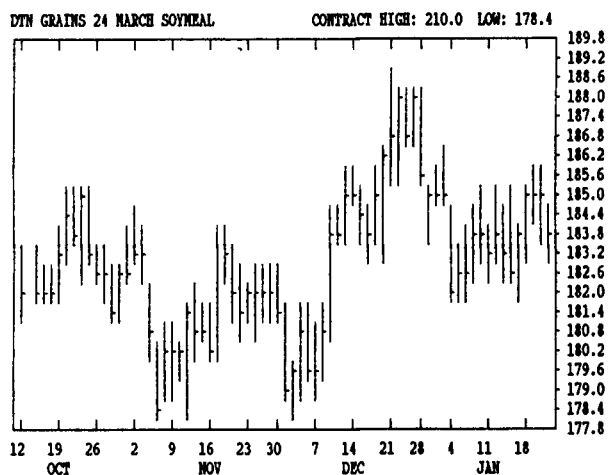
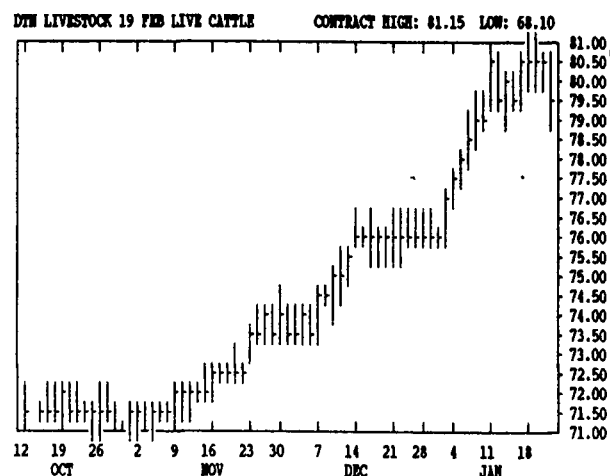
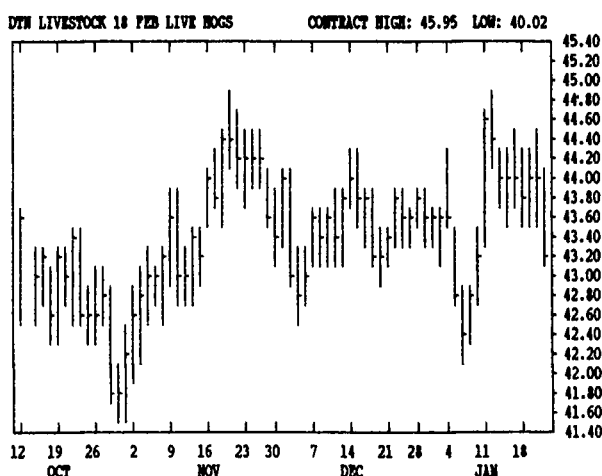


GRAIN, CATTLE AND HOG FUTURES MARKETS

(Closing bids: Thursday, January 21, 1993)

DTN FUTURES	12 01/15/93		DTN WEEKLY TECHNICAL SUMMARY		1/15/93	
	High	Low	Close	High	Low	Support
NEARBY WHEAT	380.5	366.5	380.25	369.75	348.75	351.75
MAY WHEAT	358.5	345.75	356.5	355.25	334.00	337.00
NEARBY CORN	366.00	355.00	363.25	358.00	343.5	339.50
MAY CORN	344.00	335.00	341.5	345.00	325.25	325.25
NEARBY SOYBEANS	351.00	340.5	348.75	347.00	330.5	325.25
MAY SOYBEANS	222.00	216.5	217.00	223.00	216.00	212.00
NEARBY RICE	229.5	224.5	225.00	230.5	223.25	214.50
MAY RICE	236.00	231.25	231.75	236.25	229.00	226.25
NEARBY BEANS	586.00	574.5	583.00	579.00	556.25	557.00
MAY BEANS	586.75	576.5	581.5	584.5	561.00	570.00
NEARBY PDKLS	590.5	580.5	584.00	590.00	567.00	576.00
MAY PDKLS	185.3	182.4	183.8	188.6	178.60	178.50
NEARBY LIVCT	21.98	21.35	21.52	21.00	20.00	20.45
MAY LIVCT	80.75	79.35	80.70	77.185	73.535	76.97
NEARBY PFDCT	79.45	78.20	79.075	76.70	73.885	76.55
MAY PFDCT	88.95	87.975	88.175	86.75	83.55	84.20
NEARBY LIVRG	44.90	43.35	44.025	44.20	42.60	41.25
MAY LIVRG	44.50	42.95	43.50	42.55	40.65	41.95
NEARBY PKBLS	40.15	37.25	37.50	39.85	36.85	35.90
MAY PKBLS						40.875



Bovine Genetics: Beyond A.I.

VERNON ACHENBACH JR.
Lancaster Farming Staff

OXFORD (Chester Co.) — One of the leading authorities on bovine genetics Thursday had some good news and bad news for dairymen interested in laboratory techniques for genetic improvement.

Dr. George Seidel, researcher at Colorado State University, and world-renowned for his knowledge in reproductive physiology in cattle, was one of several speakers to address this year's Penn-Jersey Dairy Expo, an annual educational forum for dairymen jointly sponsored by extension services in Pennsylvania and New Jersey.

On Thursday, at the first location, Union Fire Co. No. 1, in Oxford, Seidel talked about a number of high-tech genetic issues and frequently presented the advantages and disadvantages of each, as is currently understood.

The Penn-Jersey program is held in two different locations over two days, but it is the same program both days so that dairymen from both states can get the opportunity to hear the same speakers. The second program was held yesterday in Easton.

The joint venture budget also allows the program to sponsor top-level experts on issues of interest to dairymen.

For example, Seidel said that while embryo transfer is successful and improvements are currently being worked on for better pregnancy rates and embryo viability, the downside is that the cost of using the technique for herd genetic improvement isn't justified by the return in the milk check.

He said that using E.T. on any but the best cows, and unless a calf can be sold for more than \$1,000 at six months of age, the use of embryo transfer techniques in breeding programs is probably not justified.

"But money isn't everything. Think of it (using leading edge genetic techniques) as entertainment value," he said, offering that most people who breed cattle do so

because of their interest in the animal, not merely for bottom line profits.

Seidel, while not knocking the embryo transfer businesses which are in existence, said that for the average dairyman, using regular artificial insemination and good mating techniques will improve the herd genetic pool profitably, if not as quickly as can embryo transfer.

He did note that about half the bulls in A.I. are the result of embryo transfer work, but he said that reflects more the interest of those with the best cows, not necessarily because the bulls are better.

Seidel is a regular contributor to *Hoard's Dairyman*, received a bachelor's of science degree from Penn State University, a masters and doctorate from Cornell, has been a research fellow at Harvard Medical School and did a sabbatical at Yale to learn microsurgical techniques for embryos. He has been at Colorado State University since 1971 and has been deeply involved in cattle reproduction.

Other speakers at the exposition included Jim Putnam, of Springfield Farm Credit, Mass., who talked on financial management in an unstable milk market; a panel of farmers — Dr. Robert Graves, Don Quick, John St. John, and Gordon Wood — with different experiences with environmental problems; and Dan McFarland, multi-county extension agricultural engineer, who talked about cow comfort.

There were also a number of commercial exhibits at the fire hall auditorium for the more than 90 people who attended.

Seidel explained that the genetics program at Colorado started with the college retaining a bull stud that was created for research into A.I. The college retained and marketed the semen in a semi-commercial enterprise.

He said it expanded into a semi-commercial embryo transfer program, which was later dropped. Over time, the college collected

about 6,000 embryos and used many for research and for teaching. Many people who now practice embryo transfer techniques gained their first experience at the Denver college, he said.

He said that work started off in beef cattle primarily with the Simmental and Limousin breeds which were a rarity at that time.

Since then, with the advent of embryo freezing techniques in 1979 and later sexing and cloning and improved handling techniques, the research has steadily been revealing more and more about the complex nature of reproduction and the effects of genetic manipulation.

Cloning, for example, though not commercially ready, is being done to produce pregnancies every year.

Embryo transfer work is estimated at about 160,000 pregnancies in 1992 in North America, about 80 percent in the U.S., 20 percent in Canada. He said Europe is catching up. About 30 percent to 50 percent of embryos are frozen.

The biggest fringe benefit to using embryo transfer is the ability to prevent the spread of communicable diseases from female to offspring. This is possible because of the effect of an embryo's outer wall, a gelatinous capsule that surrounds the one-seventh-inch diameter embryo, he said.

The drawbacks to using embryo transfer is cost, difficulty of predicting how many embryos will be collected by flushing any specific cow, and it's more difficult to predict pregnancies.

He said a study of cows and the number of embryos harvested showed that 20 percent of the cows give almost half the embryos, while almost half of the cows give only 11 percent.

A lot of research remains, he said, and he briefly discussed the wave-cycling of bovines that was recently discovered.

Michael O'Conner, PSU dairy specialist, has also spoken at recent, local seminars about the wave-phenomena of follicular development in cattle and its

implications on breeding cattle and heat detection.

Similarly, the wave effect may have an affect on success with flushing.

Other drawbacks to the application of leading edge techniques include a reduced pregnancy rate with frozen embryos that is still being worked out. He said that frozen embryos are only 75 percent to 85 percent as successful as non-frozen embryos, which aren't 100 percent successful.

Sexing eggs and sperm has been a topic of interest, but until recently predictions were not given much credibility because of a lack of a quick enough technique for separation between the two different sexes.

The technique used most successfully, though there are others, consists of shooting a very fine stream of fluid containing the sperm out through the end of a very small, vibrating needle which causes small droplets, each carrying a sperm.

(Turn to Page A28)



Dr. George Seidel, of Colorado State University, talks with Dr. Lawrence Specht, from Penn State University, about bovine genetics, during the Penn-Jersey Dairy Expo. An interested member of the audience listens to the two.