

2007 Beef Improvement Federation 39th Annual Meeting

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Forty Years of Beef AI

by Eric Grant

FORT COLLINS, COLO. (June 6, 2007) —Back in the 1950s and 1960s, three things hindered the widespread use of beef artificial insemination (AI), said Robert Walton, past president of ABS and keynote speaker at the National Association of Animal Breeders (NAAB) symposium kicking off Beef Improvement Federation (BIF) meetings this week.

The first was too much dependence on AI technicians, and not enough hands-on knowledge about AI among beef producers themselves. That was overcome by aggressive AI schools launched by both semen companies and universities.

“By the time I retired in 1991,” Walton said, ABS had “trained 125,000 cattlemen and dairymen in these schools.”

The second was the lack of adequate liquid nitrogen tanks, which enabled the storage of semen on location at farms and ranches. Once improved tanks became available, “we would buy as many as 4,000 of these tanks at the beginning of each season and resell them after they returned as ‘field tested’ to producers the rest of the year,” Walton said.



▶ The use of AI in U.S. beef herds has a storied past. Robert Walton, former president of ABS, took a look back at the events and people shaping the AI industry during the last 40 years, sharing his experiences with participants at the NAAB symposium Wednesday evening.

“I’m still using one of those tanks on my farm that is nearly 35 years old.”

The third was the need for reliable estrus synchronization systems to minimize labor, costs and time associated with AIing beef cows.

“That was one tough nut to crack, and it’s gone through many systems, but today probably 90% or more of beef AI is done using these protocols,” Walton said.

The industry now has developed “magnificent tools

and management systems for beef AI in commercial production, but we have to keep moving ahead as markets and conditions change,” he continued. “We have to keep our genetic tools sharpened and aimed in the right direction, because yesterday’s solutions are soon out of date.”

A “beef improvement” timeline

Walton also highlighted significant events in animal breeding during the last 60 years:

1946 – Formation of NAAB, an organization representing the AI industry.

1951 – First beef bulls in the ABS lineup.

1961 – ABS initiates large-scale progeny test program, including multi-herd contemporary group comparisons and performance and carcass traits.

Mid-1960s – Advent of structured progeny tests, evaluating birth weights, weaning weights, feedlot gains, quality grade, ribeye area and fat cover.

1965 and 1966 –

- ▶ First Progesterone-based synchronization programs, but without the use of prostaglandins and an understanding of follicular development, these systems yield sub-par results.
- ▶ Beginning of the “exotic era.”
- ▶ First Charolais bulls imported from France.
- ▶ First Simmental bull imported from Switzerland.
- ▶ AI management schools train ranchers about the use of AI.

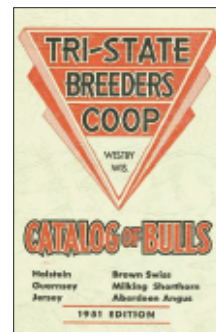
1967 – BIF formed.

1971 – First Simmental sire summary.

Early 1970s – Development of longer “holding time” semen tanks, which improve on-farm storage of frozen semen.

1971 – First progeny-tested Simmental sells in North America.

1972 – American Angus Association



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adopts open AI policy, encouraging widespread use of highly proven sires. This, combined with improved computer technology, provides the foundation for today's genetic evaluation systems.

1973 – ABS publishes in-house EPDs.

1974 – Cattle market and “exotic era” reach their peaks.

1974 – First Angus sire evaluation.

1975 – Certified Semen Services (CSS), which established protocols for and regulation of semen collection and sire health and identification, established by NAAB.

1975 – Angus sires account for 30% of semen sales; Simmental, 23%; Polled Hereford, 8%; Maine Anjou, 5%; and Charolais, 5%.

1975 – Domestic semen sales reach their historic highs, with nearly 3 million units sold this year.

1980 – Introduction of prostaglandins improve synchronization programs for beef cattle.

1983 – Introduction of Synchromate-B improves synchronization programs.

Mid-1980s – Introduction of dry shippers revolutionizes semen distribution.

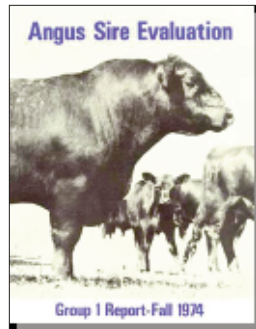
Late 1980s – MGA and prostaglandin programs provide an inexpensive and reliable means to synchronize heifers. Heifer AI fuels a “push-back” against the bigger birth weight genetics of the 1970s and 1980s and encourages strong growth of heifer AI. This results in a rebound of U.S. semen sales.

1985 – Angus accounts for 39% of U.S. semen sales; Simmental, 18%; Polled Hereford, 16%; and Limousin, 3%.

1995 – Angus accounts for 60% of U.S. semen sales; Simmental, 10%; Polled Hereford, 8%; and Red Angus, 5%.

1998 – Introduction of the first gonadotropin-releasing hormone (GnRH)-based synchronization system, “Select Synch.”

1998 – First ultrasound genetic evaluation rolled out by American Angus Association.



1999 – First beef industry selection indexes introduced by American Angus Association.

2003 – Introduction of CIDR®s for synchronization of beef cattle.

2006 – Angus accounts for 76% of U.S. semen sales; Simmental, 7%; Red Angus, 6%; and Polled Hereford, 3%.

Mid-2000s –

- ▶ The “information era” takes hold, with many individual AI sires now having potentially thousands of progeny performance records, thousands of daughters in production and thousands of ultrasound records to evaluate their genetic merit.
- ▶ Producers adopt widespread use of a wide array of synchronization programs for both heifers and cows.
- ▶ Industry shifts from commodity orientation to value-driven systems. Now, 40% of cattle are sold on a grid.

Today –

- ▶ Availability of highly proven sires evaluated for 20-plus traits.
- ▶ Effective time-synchronization systems for heifers and cows.
- ▶ Overnight shipping of semen across the country.
- ▶ Availability of sexed semen.
- ▶ Custom collection of semen now at historic all-time highs.
- ▶ 50% of all registered Angus calves now sired from AI matings.



The PowerPoint for this presentation is available in the newsroom. Visit the “Symposium Papers” page for the proceedings paper.



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