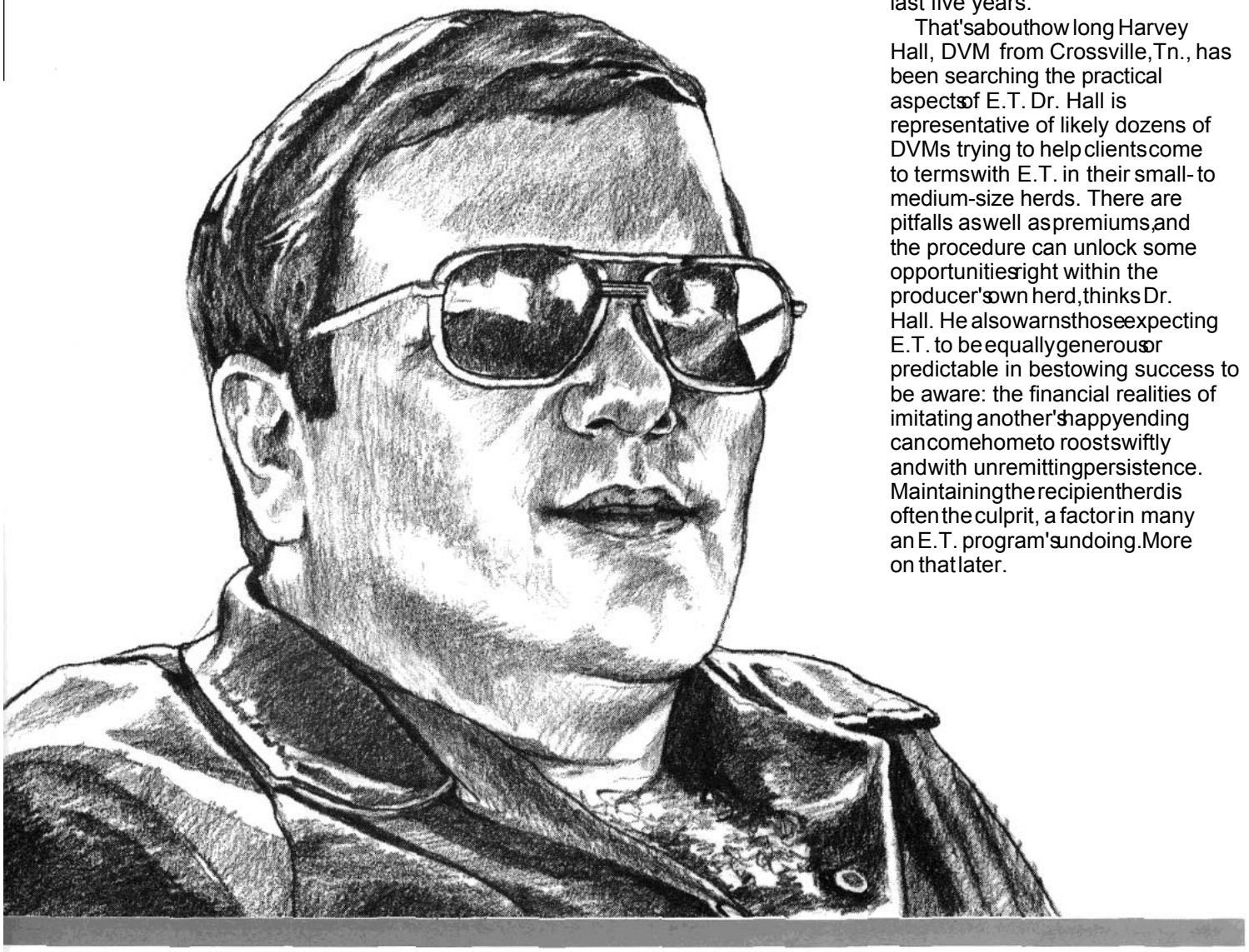
E.T.: A DECISION

STAYING ABREAST

THAT WON'T GO AWAY

by Jim Cotton, Editor
Interview... Dr. Harvey Hall, Crossville, Tn.



Embryo transfer as a tool, not a temptation, is the thing to remember, the story emerging.

It's also becoming pretty undeniable E.T. has worked some distress on the solid, middle-range, otherwise desirable purebred cow and her value. Without the charisma of E.T., she's blighted, a victim of fame and bigger bucks gravitating to more glamorous E.T. starlets. Consequently, non E.T. breeders must decide: do they stay comfortable without it and risk dwindling activity and lower returns, or do they gird themselves for a breathtaking leap off into the dizzying realms of technology where an ill-advised or poorly executed program becomes a smoking wreck?

Lower prices for good cows is just one graphic effect the procedure has exerted on the seed stock industry, particularly in the last five years.

That's about how long Harvey Hall, DVM from Crossville, Tn., has been searching the practical aspects of E.T. Dr. Hall is representative of likely dozens of DVMs trying to help clients come to terms with E.T. in their small- to medium-size herds. There are pitfalls as well as premiums, and the procedure can unlock some opportunities right within the producer's own herd, thinks Dr. Hall. He also warns those expecting E.T. to be equally generous or predictable in bestowing success to be aware: the financial realities of imitating another's happy ending can come home to roost swiftly and with unremitting persistence. Maintaining the recipient herd is often the culprit, a factor in many an E.T. program's undoing. More on that later.

The question of greatest importance to the small breeder is: Do I need it, or conversely, why can't I have it right now and make it work for me as well as it seemingly does for others?

"E.T. has a wonderful advantage for a breeder building his herd," says Dr. Hall. "If he's going out and purchasing quality that's going to cost $3,000-$5,000 per head, he's probably farther ahead to buy a $5,000 to $10,000 cow and reproduce her via E.T. than to spend his time and money running the roads trying to put together a whole herd from purchases."

Well, an alternative then for the new breeder in a building phase. What of the established breeder testing the waters of E.T.? Again, should the goals be to market something superior or capitalize on what's already in place? There are some cows in some herds, Dr. Hall is convinced, that should be reproduced by E.T.

"It seems there's always one or two cows at the top end of any number of herds that deserve being reproduced in numbers. If the producer can't market them, that doesn't need to be his only objective. It's still worth it to him genetically to take that top individual to transfer. Prices for E.T. are decreasing across the country, and almost everyone that's serious about staying in the business has access to facilities where they can put one percent of their herd into a program. You can always take the lowest two or three percent to the sale barn to finance the procedure."

Dissecting the cow's track record and just the intestinal impression of that cow should be paramount, the veterinarian believes. Selecting a donor on phenotypic merits alone may pale when compared to the "known" performance of a cow with a history. An intimate history-one including the bulls and bloodlines where she's worked well and those she hasn't-can be powerfully convincing. If one is committed to purchasing a donor, Dr. Hall stressed a thorough background investigation of the cow, its productive history, the maternal genetics one can predict. "It's really important those animals have saleability," he adds.

And most observers agree. The long-term marketing of her progeny and eventually the cow herself must be entered into the computation. That formula gets complex quickly when one's trying to make a decision on a purchase, especially under pressure at a sale. Performance and genetic merit may not play the dominant role, but both ultimately affect marketing when the hoopla becomes tarnished as things settle down and the grind settles in.

In that vein, one of the tactics both Dr. Hall and cattlefolks at large often witness is buying a full sister to some great and proven donor dam. A wise practice?

But with limited resources, just what can a small breeder do? Are his horizons confined because of circumstances or dare he gamble on the luck of the draw? Can he venture into diversity or variation, or should he concentrate on one line, family, or approach, and should E.T. be the vehicle to concentrating his gene pool or expanding it?

"I've been there," he allows. "That full sister doesn't always perform like her celebrated sister. A full sister, unless she's an identical twin, may carry one-hundred percent the same genetics or zero, an identical twin or absolutely no kin whatsoever," he points out, citing the haploid-diploid relationship of chromosomes. "Half of the genetics are thrown away from both the egg and the sperm, remember.

"We can see this with the occasional cow whose production is not consistent. She may have one great calf and 14 duds before she has another great calf." Dr. Hall recommends thoroughly researching the maternal line and the sire line looking for consistency. "Those are the ones that work well in E.T. programs and produce cattle with market value."

"I really personally think, if the cow family has been working on the maternal side for several generations I would like to see the major part of the herd built up out of that particular cow family. On the other hand, we all have customers who buy their bulls from us every year. You need diversity to produce some outcross bloodlines. I think everyone needs to keep some outcross genetics to where they can be introduced within their herds to provide some diversity and avoid peddling an inbreeding situation to your buyers."

Dr. Hall considers the day over when an E.T. calf will sell on anything but its own merits. Stacked genetics and a record of the preponderance or absence of "deadheads" will tell the tale rather than some illustrious mating that may be more blue sky than substance. It is demonstrated ability to do something different and well that will keep E.T. interesting. In that regard, the technique of freezing embryos and mating some old genetic material to the very latest could be more than just amusing. Dr. Hall comments:

"I think one of these days someone's going to put some Conan of Wye, just to use an example, in some new hot cow and come up with something explosive."

Some breeders are freezing for this or similar objectives. And, some breed spokesmen have proposed genetic banks for future use. Would a breed's overall genetic base benefit from such a practice?

"In the Angus breed, we've got a diverse gene pool, and I don't see it narrowing that much. In the show end of the breed, it appears there are certain cow families that are going to dominate. We only need to be cognizant that concentrating on 3.4 families could narrow this genetic base and those mothers will become the mothers of our most prominent bulls, more than likely. I think it's wise for people to keep and develop outcross lines. We'll always need diversity. In the Angus breed, I

don't see any problem overall from a narrow base. The numbers are too great, and we've always got some outcross sires."

Dr. Hall looks for improved freezing techniques with every present-day advancement and predicts the success rate to go up continually. Any problems with freezing can often be traced to the donor, just as some bulls' semen won't freeze well for A.l.

"It's becoming more dependable, but before we develop a large world market, the techniques have to improve and training of people around the world must be undertaken. Cutting down on the cost of shipping genetic material internationally is essential to developing a good world market. If we insist on every embryo pregnancy costing the customer a tremendous amount of money, they may go around once but what needs to happen is to get it where we can develop ongoing sales at a reasonable price both ends can live with."

Dr. Hall finds more appreciation for the nutritional constraints in assembling a successful E.T. program. "She can't make proteinacious hormones to control the cycle," he says of those cows not on an adequate nutritional plane. "Nutrition is an integral part of success both for the donor and recipient. People are becoming more aware.

"I see fewer folks too, wanting to superovulate the old fat cow that didn't breed. We used to see some effort trying to get some calves out of a non-breeder by E.T. Now, there's more emphasis on cows with proven records and saleability."

What of sexed embryos or semen?

"It's coming, but it's not going to happen tomorrow on a commercial basis. There are too many people working on it for it not to happen, however."

But, getting back to the practical, those making a modest E.T. effort work on a small herd must still wrestle with recipients as the key or the kiss of death to the eventual outcome.

"If you don't get them all filled

up," Dr. Hall says of implanting the recip herd, "they're a dead expense, one you have to charge off against the E.T, calves you do produce."

In his practice, he reports "working" a lot of Holsteins for this duty. "A black animal, dairy cross with the capability to have a large calf and milk. Angus breeders usually prefer a half or quarter Holstein if I can get them."

Some enterpriser specializing in recipient cattle of that stripe might have a lively market, he thinks. "There's some desirability from aesthetics of having a uniform group of black cows. Some producers want their recipient herd to rival their production herd in consistency and quality."

It's been his observation also that the size of the recipient can influence the calf size. "Further research may prove me wrong," he cautions.

As to splitting, the other exotic technique of the industry, Dr. Hall hasn't had much reason to employ or rely on it. "Our problem is not having enough recipients ready most of the time. We have enough cows that produce 20-30 eggs that we have little need for splitting at this time. There are still problems with splitting though I see it as an extremely valuable research tool, particularly when you can nullify the genetic effects and perform tests with a much smaller group of experimental animals."

Less indiscriminate use of E.T. is the trend Dr. Hall is witnessing presently, and he approves. Choosing donors on vast and predictable maternal strengths seems to be the healthiest development, one that keeps both seasoned hands and the experimenters encouraged, even excited about its potential. There are those that put heifers into E.T. production, sure, and turning the generational interval to one's advantage is reason enough in those exceptional cases. The demands of economics and a market beckoning can simply be irresistible. But if E.T. is going to be a permanent program of many small operations, it's likely because it opens doors to better, faster, more predictable methods. Time and improved technology holds that exciting promise.

Today, assigning E.T. the role of mortgage lifter or catapult into stardom is probably unrealistic and even injurious to an otherwise sound program. And proving that cow first seems the surest, most reliable first step. As Dr. Hall concludes:

"If she's the daughter, the granddaughter, the great-granddaughter of that great cow that's been at the top of the herd, it might be worth putting her into production without prior proof. You'd better be cautious if she doesn't have three or four generations behind her."

AJ

Has E. T. lost its luster?

Can today's small operator survive with(out) embryo transfer?

It's a question many wrestle with today and will likely confront in the future. We surveyed experts from the ET industry, the university position, the rancher-farmer segment, sale management services, plus we tapped opinions from beef industry observers. Our respondents considered six case studies, situations that may not represent all the options out there but may cover many of the variations.

Our panel members are:

Dr. Robert Baker
Select Embryos, Inc.
Plain City, Ohio

Dr. Dave Faber
Trans-Ova Genetics
Sioux Center, Iowa

Steve Hammack
Extension Beef Cattle Specialist
Stephenville, Texas

Dr. Ronald W. Nida
Bovine Embryo Transfer Center

Dr. Harlan Ritchie
with Dave Hawkins
& Pete Sweeney
Michigan State University
East Lansing, Michigan

Keith "Sundance" Ruff
Sundance American Genes
Dwight, Illinois

Bernie Scheer
Rattle & Snap Farms
Columbia, Tennessee

Doug Slattery
Rolling Oaks Ranch
Burkett, Texas

John B. Tyner
Tyner Sales Management
Randolph, Iowa