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For many years, Kentucky has promoted its CPH-45 (Certified Pre-conditioned for Health) program to producers as a way to add value to their feeder calves. Many studies have shown considerable increases in producers' income resulting from weight gain during the pre-conditioning period and price premiums at the time of sale. However, most of these studies have used state average prices as the baseline and made assumptions about rates of gain, feed and medical costs, and length of time in the pre-conditioning program. The intent of this article is to profile a single producer who participated in the Kentucky CPH-45 program for the first time in the spring of 2003. Actual cost and return data were made available by him and used in this analysis. Actual production data were collected on calves at multiple points throughout the period. Although he remains anonymous, his cooperation and willingness to share information is deeply appreciated.

This case study is of a commercial partnership, consisting of 130 cows, located in central Kentucky. The cowherd is primarily Angus-Simmental cross, bred to registered Angus bulls. Until this year, calves were usually sold at weaning at the stockyards. Management practices before weaning were the same this year as in previous years.

Current requirements for managing and marketing calves under Kentucky's CPH-45 program are: 1) owned by the seller for a minimum of 60 days, 2) weaned a minimum of 45 days, 3) trained to eat feed from a bunk and drink water from a trough, 4) dehorned and healed, 5) males castrated and healed, 6) treated for grubs and lice according to label directions for the time of year, 7) dewormed with an endectocide no more than 60 days prior to sale, 8) vaccinated for Clostridia (7 way) subcutaneously in the neck according to product label, 9) vaccinated and boostered for IBR, PI_3, BVD and BRSV with the booster vaccine required to be a modified live product, 10) a free choice mineral containing a minimum of 1,000 ppm of copper with no copper oxide, 26 ppm selenium, 2,000 ppm zinc, 1,000 ppm manganese and a salt content of 18 to 25%. In addition, all females come with a $100 guarantee of being open and all males come with the same guarantee that they are steers.

During the spring and early summer of 2003, this central Kentucky producer preconditioned 124 fall born calves. Following the 81 day pre-conditioning period, 58 steers and 45 heifers were sold in the June 27th CPH sale at Bluegrass Stockyards. Twenty one heifers were retained for herd replacements. For the purposes of this case study, all associated costs are allocated across all calves in the group. Profitability analysis is only included for the 103 calves that were sold in the CPH sale. Every effort has been made to make this analysis as realistic as possible.

To understand the value that was added to these calves through the CPH-45 program, the returns after pre-conditioning are compared to returns that would have been received had the animals been sold at weaning. This is the point where the cow-calf enterprise ends and the pre-conditioning enterprise begins.

The average weaning weight of the heifers was 413 pounds, while the average weaning weight of the steers was 462 pounds. A 5% shrink is assigned to both these weights in order to value them as if they had been sent to the stockyards at weaning. This would make pay weight on the heifers 392.4 pounds and our pay weight on the steers 438.9 pounds.

To determine what price would have been received for these weanlings, market price reports for Bluegrass Stockyards for the week including April 1st were used. During this week, 3-4 wt. heifers sold between $94 and $104 per hundredweight and 4-5 wt. steers sold between $90 and $107 per hundredweight. Adjusting prices to reflect the actual sale weight of the cattle gives us a sale price of $94.67 for the heifers and $100.39 for the steers. Therefore, value at weaning would have been $371.49 for the heifers and $440.61 for the steers.

The pre-conditioning period began on April 8th. Calves were fed a ration consisting of distillers' grain and soy hulls during this time. The ration was roughly 40% distillers' grain and 60% soy hulls. Calves were fed 9.25 pounds per head per day, in addition to being on good pasture throughout the entire period. Feed costs were $76.60 per ton or roughly $43.91 per day for the entire group. This equates to around $28.68 per head for the period. One ton of high magnesium mineral was purchased for the period; the cost of this mineral was $436 per ton or $3.52 per head.

In addition to feed and mineral, medicine represents a substantial cost in a preconditioning enterprise. Initial viral and bacterial vaccines were administered one week after weaning and cost $1.59 per head. Calves were also dewormed and implanted at this time. Dewormer cost $2.18 per head, while implants cost $0.37 per head. A modified live booster vaccine was given on April 24th and cost $2.27 per head. Other miscellaneous costs included ear tagger pins, syringes, and needles and amounted to just under seven cents per head.

Total labor, which included feeding and working calves during the preconditioning period was 118 hours. Calves were worked four times after weaning in order to collect data on gain. Under ordinary circumstances, calves would be worked only twice; once to administer initial vaccines and then again to administer booster vaccines and apply Electronic Identification and CPH ear tags. Therefore, labor used during the last two workings (21 hours) has been excluded from the analysis. Most of these hours were from a laborer hired at $7.00 per hour. Some operator labor is also included and valued at the same rate for simplicity purposes. Therefore, total labor costs are assumed to be $679 or $5.48 per head.

A pasture rental rate is included in the analysis although it was not actually paid by the producer. This cost is included in order to cover the opportunity cost of grazing pasture. In other words, if the producer had decided not to precondition his feeder calves during 2003, he could have rented pasture out to a backgrounder. The rate used in our analysis is $0.20 per head per day or $16.20 per head for the 81 day preconditioning period. Table 1 summarizes all cash costs associated with the pre-conditioning enterprise.

Table 1: Cost Summary for the Pre-conditioning Program (81 days)

Expense Item	**Herd Cost**	**Cost per Head**
Feed	$3556.80	$28.68
Pasture Rental	$2008.80	$16.20
Labor	$679.00	$5.48
Mineral	$436.00	$3.52
Initial Vaccine	$196.73	$1.59
Booster Vaccine	$281.87	$2.27
Dewormer	$270.39	$2.18
Implants	$45.98	$0.37
Miscellaneous	$8.17	$0.07
Total	**$7,483.74**	**$60.36**

On June 27th, 58 steers and 45 heifers were delivered to Bluegrass Stockyards to be included in their CPH sale. These calves were weighed on arrival and co-mingled into pens with other cattle of similar genetics, frame, and weight. Sale weight was the in-weight reduced by a 2% pencil shrink. Pens were broken into 100 pound increments.

The vast majority of this producer's calves were grouped into five pens of predominantly Angus cattle: steers 450-550 pounds, 550-650 pounds, and 650-750 pounds and heifers 450-550 pounds and 550-650 pounds. Prices for these five groups are reported in the table below.

Table 2: CPH Sale Results

Group Specification	**Sale Price in $ / cwt.**
Angus Steers 450-550 lbs.	$105.90
Angus Steers 550-650 lbs.	$96.70
Angus Steers 650-750 lbs.	$90.90
Angus Heifers 450-550 lbs.	$94.20
Angus Heifers 550-650 lbs.	$93.00

The average weight of the 58 steers at the stockyards, after the 2% pencil shrink, was 634 pounds. On average they brought $94.94 in the CPH sale or $601.92 per head. The heifers averaged 556 pounds and brought $92.92 per cwt. for a per head value of $512.91. Table 2 provides a profitability analysis of the pre-conditioning program. A weighted average of steers and heifers is used to simplify the analysis. Marketing and transportation costs are not included because they would have been the same regardless

of marketing method. Calves sold in this CPH sale were required to have both an electronic identification tag and a CPH visual tag. The cost of these tags has been included in the budget below. Also included in the budget is interest expense during the pre-conditioning period. Interest is charged on the value of the weaned calves and the cash expenses during the period.

Table 3: Profitability Analysis (using weighted average of steers and heifers) on a Per-head Basis

Revenues	
Sale of CPH-45 Calves	$563.04
Expenses	
Purchase of Weaned Calves from Cow-calf Enterprise	($410.40)
Feed Costs	($28.68)
Pasture Rental	($16.20)
Labor	($5.48)
Mineral	($3.52)
Initial Vaccine	($1.59)
Calf Dewormer	($2.18)
Implants	($0.37)
Booster Vaccine	($2.27)
Electronic ID and CPH Tags	($3.00)
Interest Expense	($8.32)
Miscellaneous	($0.07)
Net Return per Head	**$80.96**

The profitability of the CPH-45 program comes from two sources. The first source is the weight gain of the calves during the pre-conditioning period. In this case study, calves gained 1.97 lbs per day from weaning to pay weight (including hauling and pencil shrink). This weight gain was achieved through an economical feeding program and forage utilization. The revenues associated with these additional pounds exceeded the cost of adding them. The producer would have made some profit even without selling in a CPH-45 feeder calf sale.

To illustrate this point, we will continue with the weighted average analysis used in Table 3. Using the same pay weight, we value the calves at market price for the same week of the CPH sale at Bluegrass Stockyards. The steers would have brought $89.91 per cwt. for a total of $570.03 per head. The heifers would have sold for $86.47 per cwt. for a total of $480.77 per head. The weighted average of steers and heifers would have been $531.03 per head. Therefore, the program would have been profitable even if the calves had been sold at the regular weekly auction, rather than in the CPH sale (see Table 4).

The second source of income for producers participating in CPH-45 is the premium received, above market prices, for their calves. There are generally premiums associated

with participating in a CPH-45 sale and this was no exception. On average, the CPH calves brought $5.34 cents above the Lexington market for that week. This premium totaled $32.01 per head. So, although the majority of the net returns to CPH-45 came from weight gain of the calves, more than one-third came from premiums associated with the CPH-45 program (See Table 4).

Table 4. Examination of CPH Profitability (Weight Gain vs. CPH Premium)

Revenues	
Sale of Calves at regular weekly sale (no CPH premium)	$531.03
Expenses	
Purchase of weaned calves from cow-calf enterprise	($410.40)
Other expenses (feed, labor, medical, interest, etc.)	($71.68)
Net Return per Head (no CPH Premium)	**$48.95**
Plus CPH-45 premium	$32.01
Net Return to CPH-45 program	**$80.96**

This producer was able to add an additional $80.96 to each calf above their value at weaning time. This is an example of how Kentucky's CPH-45 program can add value to feeder cattle and put more money in the pockets of livestock producers. The CPH-45 program is designed to allow producers who are unable to market uniform load lots of cattle to receive the benefits that come from marketing in larger groups. The program can be profitable for any producer, regardless of the size of his operation. Kentucky's average herd size is 40 head of cows. If the average herd weans and pre-conditions 36 calves each year, and experiences net returns similar to what was seen in this example, the average producer would be making an additional return of more than $2,900 per year. This represents a real opportunity to increase farm income. If you would like more information about the program, please contact your local county extension agent for agriculture.