INFO SHEET
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Importance of Income in Cow-calf Management and Productivity

Producers who depend upon their cow-calf herds as their primary source of family income are more likely to use certain management practices and are more productive than producers whose beef cows are a supplemental source of family income.

The USDA's National Animal Health Monitoring System (NAHMS) collected data on management practices and the importance of cow-calf herds as a source of family income from a representative sample of cow-calf producers. These producers were from 23 of the leading cow-calf states[1]. Overall, 2,713 producers with one or more beef cows participated in the NAHMS Beef '97 Study. These producers represented 85.7 percent of the United States beef cows (as of January 1, 1997) and 77.6 percent of U.S. operations with beef cows.

Overall, cow-calf herds were the primary source of family income for 14.0 percent of the producers. Herds provided supplemental income for 68.8 percent of producers, and 17.2 percent of producers had cows for some other reason than providing family income. The purpose of this analysis was to determine if those producers who relied on their cows as their primary income source were more likely to use specific management practices and if they were more productive than producers whose cows were not their primary source of income. For analytical purposes, producers whose herds provided supplemental income or existed for some non-income reason were grouped together. This group is referred to as non-primary income herds in this report.

Average herd size was much larger for primary income herds (138 cows) than for non-primary income herds (33 cows, Table 1). It may be surprising that among herds with 100 or more cows, 46 percent were non-primary income herds, and among herds with 250 or more cows, 29 percent were non-primary income herds. Thus, larger herds are not synonymous with primary income herds.

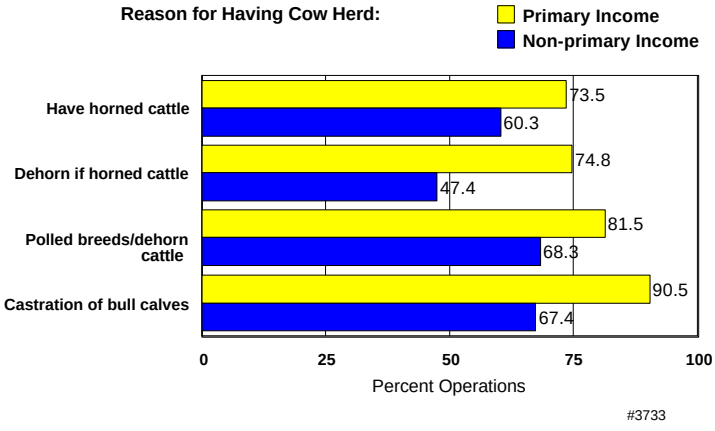
Dehorning and Castration

Primary income herds were more likely to have horned breeds than non-primary income herds. However, if they had horned breeds, primary income herds were more likely to dehorn their cattle. When use of polled breeds were combined with dehorning, primary income herds were more likely to produce cattle without horns than non-primary herds (81.5 percent vs. 68.3 percent, Figure 1).

Castration of bull calves was common in both groups (Figure 1). However, primary income herds were more likely to castrate their bull calves (90.5 percent), while only two-thirds (67.4 percent) of the non-primary income herds castrated their bull calves.

Figure 1

Percent Operations that Dehorned/Castrated Calves by Importance of Cow-calf Enterprise as Family Income Source



[1]Alabama, Arkansas, California, Colorado, Florida, Georgia, Illinois, Iowa, Kansas, Kentucky, Mississippi, Montana, Nebraska, New Mexico, Missouri, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Tennessee, Virginia, and Wyoming.

Table 1. Cow-calf productivity measures by importance of cow-calf herds as a source of family income.

	Reason for Having Cow-calf Herd		
	Primary Income	Non-Primary Income	
	Percent Operations[1]		Number Herds
Breeding and Calving Management			
Artificial insemination	14.3	5.8***	2,713
Purchase any breeding cows or heifers	60.4	68.5**	1,887
Special calving area for heifers	78.3	42.2***	1,212
Special calving area for cows	45.3	28.8***	2,692
Any births assisted by veterinarian	22.5	11.8***	2,713
Three or more observations per 24 hours during calving seasons			
- replacement heifers	67.5	41.1***	1,141
- cows	45	27.1***	2,468
Offered assistance 2 hours or less in labor			
- replacement heifers	77.3	55.7***	1,208
- cows	66.8	41.8***	2,457
Animal Health Management			
Respiratory vaccinations			
- calves	45.1	26.1***	1,189
Reproductive vaccinations			
- calves	15.3	17.1	1,189
- breeding stock	65.5	43.2***	1,189
Clostridial vaccinations			
- calves	77.2	61.0**	1,189
- cows	43.1	30.8**	1,189
Implant any calves with growth promotant	31.9	11.4***	2,710
Intramuscular injections into the neck	41.9	33.6*	1,590
Deworm any cattle	72.1	73.0	2,712
Information Sources			
Veterinarians as very important source of cow-calf information	70.5	59.2***	2,713
Veterinarians as most important source of nutrition	31.8	36.1	2,713
Feeding Management			
Balance feed ration	30.7	20.6***	2,711
Test feedstuffs	18.9	7.4***	2,709
Marketing Management			
Most important factor for determining when to wean calves			
- calf age or weight	37.8	51.9***	2,713
- market price or contract	6.3	6.5	2,713
Sell calves by auction	77.1	69.5**	2,713
Record Keeping			
Any record keeping system	90.7	79.7***	2,711
Computer record keeping system	22.1	11.5***	2,703
Individual calf identification	69.8	46.7***	2,713
Individual cow identification	76.9	51.0***	2,713
Productivity Management			
	Measures		Number Herds
Herd size (number beef cows)	138.2	33.3***	2,713
Calving percentage (number calved/number exposed cows)	94.9	90.9***	1,306
Weaning percentage (number weaned/number exposed cows)	84.1	75.4***	2,703
Calf mortality (percentage born)			
- total (including stillborn)	5.7	6.5	2,698
- stillborn and 1st 24 hours	4.1	5.9*	1,659
Weaning weight (lbs.)	515.6	491.7***	2,610
Weaning age (days)	220.3	214.1***	2,706
Average weight per day of age	2.4	2.4	1,119
Weaned weight per exposed cow (lbs.)	439.6	399.6***	2,609

[1] Percentages based on number of operations answering each particular question.
* Differences statistically significant at p<=0.10
** Differences statistically significant at p<=0.05
*** Differences statistically significant at p<=0.01

Breeding and Calving Management

Most producers did not artificially inseminate their cows, but the proportion of primary income herds doing so (14.3 percent) was twice that of non-primary income herds (5.8 percent). The majority of herds in both groups purchased replacement breeding cows or heifers, however slightly more non-primary income herds did so than primary income herds (68.5 percent vs. 60.4 percent).

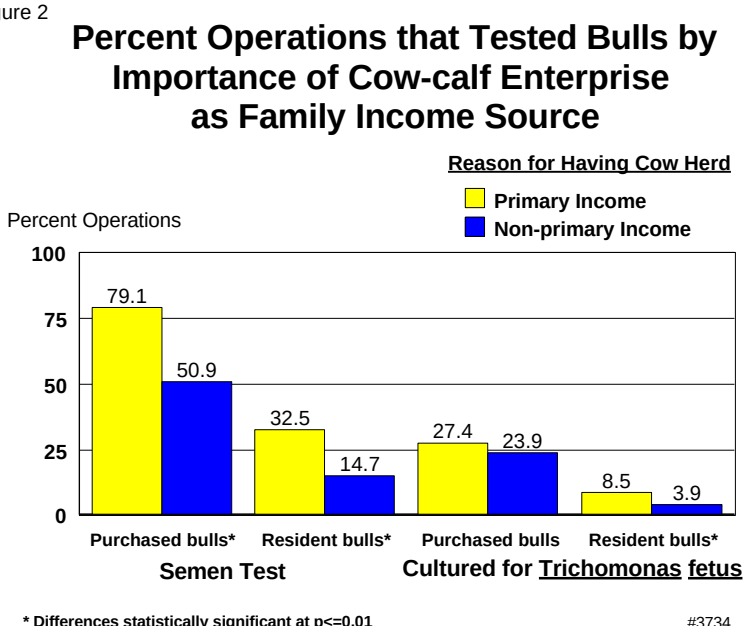
Producers use different management techniques at calving time to try to improve the number of calves born alive and surviving the first 24 hours. Such practices include having special calving areas, observation of their cows and heifers for calving problems, and assisting when such problems occur. Having a special calving area, such as barns, calving lots, or calving pastures, was more common for primary income producers than for non-primary income producers. Both types of producers were more likely to provide a special calving area to their replacement heifers than for mature cows.

Special calving areas make it more convenient to observe the calving process. For example, 80 percent of those with special calving areas for replacement heifers observed their calving heifers at least three times during a 24-hour period. A comparison of primary income producers and non-primary income producers shows that primary income producers were more likely to observe calving females at least three times per 24 hours than non-primary income producers. Both groups of producers were more likely to observe their calving replacement heifers three or more times per day than their calving cows.

More than three out of four (77.3 percent) of the primary income producers provided their replacement heifers with assistance within 2 hours of onset of labor, while only 55.7 percent of the non-primary income producers did so for their replacement heifers. Both groups of producers were somewhat less likely to offer mature cows assistance within 2 hours of labor.

Primary income producers were twice as likely to call on a veterinarian for assistance with calvings.

Figure 2



Bull Testing

Semen testing to gauge a breeding bull's ability to impregnate cows is a common procedure. Four-fifths of primary income producers who purchased, leased, or borrowed bulls had the bulls semen tested, while just half of the non-primary producers did so (Figure 2). Semen testing on resident bulls (those bulls already on the operation) greatly declined for both groups, but primary income producers were twice as likely to test resident bulls than non-primary income producers (32.5 percent vs. 14.7 percent).

Trichomonas fetus which is a protozoan parasite that causes infertility in cattle. Among producers who purchased, leased, or borrowed bulls, approximately a quarter of each group had these bulls tested for *Trichomonas fetus*. A much lower percentage of producers tested their resident bulls for *Trichomonas fetus* with primary income producers more likely to test than non-primary income producers (8.5 percent vs. 3.9 percent).

Animal Health Management

Animal health management includes vaccinations, deworming, and use of veterinarians as resources. Vaccines can be grouped as respiratory[1], reproductive[2], or clostridial[3].

[1]Respiratory vaccinations for preweaned calves included IBR, BVD, PI3, BRSV, and Hemophilus somnus.

[2]Reproductive vaccinations for preweaned calves included leptospira and Brucella abortus.
Reproductive vaccinations for breeding stock included IBR, BVD, Brucella abortus, camplyobacter, trichomoniasis, and Hemophilus somnus.

[3]Clostridial vaccinations for both preweaned calves and breeding stock included C. chauvoei, C. septicum, C. perfringens C and D, and other clostridial vaccinations.

Clostridial vaccines were the most commonly used vaccines for preweaned calves. Three-quarters of primary income producers administered clostridial vaccines compared to two-fifths of the non-primary income producers. For breeding stock (weaned replacement heifers, bred replacement heifers, cows, and bulls), reproductive vaccines were more commonly used by primary income producers (65.5 percent) than non-primary income producers (43.2 percent). Almost half of the primary income producers administered respiratory vaccinations for preweaned calves, greater than the one-quarter of non-primary income producers who adminstered them.

Placement of intramusclar injections impacts the quality of meat. To improve meat quality, the beef industry promotes the neck as the preferred site for intramusclar injections. Less than half of producers administrating intramusclar injections usually placed them in the neck with primary income producers more likely to use this site than non-primary income producers.

Almost three-quarters of producers dewormed their cattle. There was little difference between primary and non-primary income producers in this practice.

Information Sources

Among professional sources of cow-calf information, veterinarians were rated as very important more often (60 percent) than any other source with a greater percentage of primary income producers having this opinion than non-primary income producers (70.5 percent vs. 59.2 percent). The Extension Service was a distant second with 24 percent producers rating them as a very important source.

When asked to rate their most important source of animal nutrition information, veterinarians were the top choice with 36 percent of producers, followed by feed sellers at 27 percent. There was no statistical difference between primary and non-primary income producers in rating veterinarians as the most important source of animal nutrition.

Feeding Management

Feed, including pasture, is usually the largest expense on a cow-calf operation which makes optimal use of feed resources key to profitable cow-calf production. Though the majority of producers did not balance their feed rations, primary income producers were more likely to do so than non-primary income producers. However, one must question the effectiveness of balancing their feed rations as approximately half of those producers who balanced feed rations, did not test their feedstuffs for nutritional quality.

Marketing Management

Using market price as a determining factor as to when to wean and sell calves separated profitable from non-profitable operations (see NAHMS' Info Sheet, "Management Practices Associated with Profitable Cow-Calf Herds", #N197.796). Most producers chose some reason other than price to determine when to wean their calves with no difference between primary and non-primary income producers.

For both types of producers, the most popular method for marketing calves was through an auction with primary income producers more likely to use auctions than non-primary income producers.

Record Keeping

Almost all primary income producers kept production and/or financial records in some form - from simple pocket diaries to sophisticated computerized record keeping systems. Though the majority of non-primary income producers kept some type of records, the percentage was less than that of primary income producers (90.7 percent vs. 79.7 percent). Primary income producers were more likely to use a computer record keeping system and keep track of individual cows and calves than non-primary income producers.

Productivity Measures

With their livelihood dependent on what their cows produce, it is not surprising that primary income producers had greater productivity. They produced more pounds of weaned calf per exposed cow than non-primary income producers (440 vs. 400 pounds). This 40-pound difference was due to greater weaning weights (516 vs. 492 pounds) and a higher weaning percentage (84 vs. 75 percent). The higher weaning percentage for primary income producers was a function of higher calving percentage and a lower death loss among calves born.

The next logical question to answer is, "Were the primary income herds more profitable per cow than the non-primary income herds?" Unfortunately, cost and revenue data were not collected during the NAHMS Beef '97 Study which makes such a comparison impossible.

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