

Last third of gestation as a rule for all dairy replacements

Economic opportunity for existing dairies and new heifer replacements operations

Comments supplied by NODPA, August 2006

1. Question: How long will it take to ramp up production of replacement heifers so as not to impede organic production and expansion?

Answer: Assuming the rule becomes law in June 2007 with a grace period of one year (June 2008) for existing operations, there will be enough of a supply of certified heifer calves to supply existing operations and those that will want to expand at a measured rate to meet increased demand.

The answer is based on the following assumptions:

- a. **Table 1** shows the estimated growth of cow numbers and its corresponding effect on supply of milk with the following assumptions:
 - i. Number of cows:
 1. 2001 and 2003 are actual numbers from USDA.
 2. 2006 assumes the same growth in numbers as between 2001-2003 because of low pay prices and moderate demand.
 3. 2007 is a doubling of cow numbers from 2006 which is high but allows for the bulge of farms that rushed to transition under the 80/20 rule.
 4. 2008 to 2010 shows a growth of 20% a year.
 - ii. Lbs of milk produced assumed an average annual production of 15,000 lb per cow per year. This is slightly higher than survey results from NODPA members¹ but takes into account higher yields from large commercial operations.
 - iii. 2001 is taken as a base point for demand equaling supply, when pay price was lower and transitioning farmers had to wait to have their milk accepted. 2003 assumes a 20% growth. Supply figures from handlers in the northeast show that for supply to satisfy existing demand they would need 150% of existing supply plus an additional anticipated annual 20% for growth. The demand figure for 2007 illustrates that figure with a 20% increase per year after that. This growth does not take into account new product lines that may come on the market with increased supply.
 - iv. NODPA's survey¹ indicated a 17% cull rate, and in Table 1 we have assumed an annual cull rate of 20% to take into account larger commercial operations (Aurora has a 24% cull rate). The column "annual replacement for culls" shows the number of replacements needed per year for cows that have been culled from the herd.
 - v. Organically certified heifers will also be needed for herds that are expanding. In Table 1 column "Heifers for expansion," we have added half of the increase to the total number of cows per year to reflect the total number of new replacements needed each year from operations that are expanding. The other half of the increase in cow numbers will come from new operations that are transitioning with conventional cows. For example an existing herd of 200 milking cows will produce 100 female calves of which we have assumed 90 will be reared to calve at 2 years. Forty of those calves will be used to replace cows that have been

¹ Survey of NODPA members conducted in July/August 2006

culled from the herd and the other fifty will be used to expand the herd or sold to other farms that are expanding.

- vi. Viable heifer calves reflect 45% of total cow numbers for the preceding year to reflect a 2-year birth to first calving schedule with the 5% allowances for heifer calves that die or are found to not be suitable for breeding (assumes a 50% split in sex of calves born).

Table 1

Year	# of cows	lbs of milk produced	Gallons	Demand	Demand vs Supply	Annual replacements for culled cows	Heifers needed for expansion	Viable H calves per yr
2001	41,851	627,765,000	52,313,750	-		8,370		
2003	75,000	1,125,000,000	93,750,000	78,470,625	15,279,375	15,000		18,833
2006 (est.)	108,149	1,622,235,000	135,186,250	229,816,625	(94,630,375)	21,630		33,750
2007 (est.)	216,298	3,244,470,000	270,372,500	275,779,950	(5,407,450)	43,260		48,667
2008 (est.)	270,373	4,055,587,500	337,965,625	330,935,940	7,029,685	54,075	27,037	97,334
2009 (est.)	337,966	5,069,484,375	422,457,031	397,123,128	25,333,903	67,593	33,797	121,668
2010 (est.)	422,457	6,336,855,469	528,071,289	456,691,597	71,379,692	84,491	42,246	152,085

Based on the assumptions in Table 1, there are an adequate number of available calves for culling and expansion. For example, in 2009 there will be a need for a total of 125,186 replacement heifers to meet the demand to replace culled cows and continued expansion. There will be 121,668 heifers available which will leave only 4,000 (3.5%) cows to be transitioned to meet the anticipated demand.

2. **Question:** Is rearing certified organic heifer profitable?

Answer: Yes, if there is one rule for replacements, there will be sufficient income per calf to cover overhead and profit and an ability to project profitability into the future.

This is based on the following assumptions:

- a. With the knowledge that there will be one rule for all replacements, new operations catering to this need will have the security to start custom rearing organically-certified heifers.
- b. Existing operations may retain more heifer calves since they will have a secure organic market to sell for a premium price.
- c. The NODPA survey showed that producers who sold certified organic springing (near to calving) or lactating animals to organic producers were able to receive a price premium averaging \$574 over what they would have received in the conventional market.
- d. **Table 2** shows the income per calf for rearing heifer calves based on the NODPA survey and anecdotal information from farmers in other parts of the country.

- e. Profitability of custom rearing of conventional replacements, with expenses averaging \$1,250 each², is dependent on the cyclical changes in milk prices and replacement heifer sale prices can vary from \$900 to \$2,500. Organically certified heifers will have a steady and predictable growth with a self-limiting factor that the calves will need to be born from a limited number of organic cows.

Table 2: Projected income for custom rearing of organic replacements

Average cost of week old calf	\$ 430.00
Average cost of raising a heifer	\$ 1,660.00
10% for overhead and labor	\$ 209.00
Total cost of raising replacement	\$ 2,299.00
Average sale price of a springing heifer	\$ 2,500.00
Income per calf	\$ 201.00

3. **Question:** What is the size of the demand for purchased replacements?

Answer: The size of the demand for purchased replacements is difficult to predict in such a young and growing industry but there is the potential for generating a value added sector of organic livestock for rearing replacements valued at \$150 million dollars in the dairy sector. This demand will encourage the development of custom rearing operations to supply an expanding and secure market.

The demand for replacements will also benefit established organic dairies. The NODPA survey showed that almost half of those surveyed sold organically certified calves, heifers and cows into the conventional market because there was no demand from organically certified operations. By clarifying the replacement rule to exclude any ambiguity and setting the standard at last third of gestation, the smaller family farm who does not want to expand can benefit from this new market. The farm that has 70 milking cows with a cull/replacement rate of only 10% will be able to sell replacements into the commercial organic market to supplement their income. A 70 cow herd will produce 35 heifers annually but only need 7 for replacements. With 5% not selected for breeding that will leave 25 for the farm to sell in order to generate additional gross income of \$62,500.

With little information on the number of organic cows and farm production practices, we have used data from the NODPA survey plus anecdotal information to assess the demand for purchased replacements:

- a. NODPA's survey indicated that only 5% of producers would need to buy replacements to replace culls and 10% would need to buy them for expansion. As these producers were generally well established organic herds, the percentage for the whole industry will be higher with the large number of new entrants.
- b. Table 3 below shows the estimated demand for purchasing replacements using the information generated in Table 1 for the number of replacement heifers needed, and has the following assumptions:

² Publication Number 404-287, posted June 1999 Virginia Tech and Virginia Cooperative Extension

- i. 30% of the total replacements for culled cows will be purchased as some operations will continue to purchase all replacements while others will not have the facilities or organically certified land base to rear all their replacements.
- ii. 50% of heifers for expansion will be purchased by existing operations that expand without enough home reared replacements or the land base to rear them.
- iii. An average sale price of \$2,500 will remain constant with steady demand predicted if standards are enforced.

Table 3

Year	Number of heifers custom raised	Total sales
2007	13,032	\$ 32,580,313
2008	43,260	\$ 108,149,000
2009	54,075	\$ 135,186,250
2010	67,593	\$ 168,982,813