

Abstract T321: ADSA – CSAS - ASAS

Differences Between Expanding and Non-Expanding Wisconsin Dairy Farms

INTRODUCTION

The diversity within Wisconsin's dairy industry contributes a wide variety of viewpoints regarding dairy operation, modernization, and growth. As a result, vast differences in information and outreach needs exist among dairy producers. To fully accommodate the needs of those they serve, members of both research and extension communities must have a thorough understanding of current demographics and trends within their specific discipline. Results from the Wisconsin Dairy Business and Production Survey provide valuable insight on the differences in information and outreach needs of dairy producers planning to expand and those not planning to expand their operations.

A Dairy Expansion Decision Support System (DE-DSS) tool was created in response to the informational needs of dairy producers. The DE-DSS represents a powerful risk management tool used to simulate "what-if" scenarios regarding production, management, and expansion. A case study represents the application of this tool to a situation in which questions surrounding dairy expansion are explored.

OBJECTIVES

- Facilitate all aspects of the Wisconsin Dairy Business and Production Survey.
- Identify and contrast differences in information and outreach needs between dairy producers planning to expand and those not planning to expand.
- Showcase application of the DE-DSS through a case study.

MATERIALS AND METHODS

- The Wisconsin Dairy Business and Production Survey was administered to a sample of 1,000 randomly selected Wisconsin dairy producers.
- Two separate mailings (September 2009 & January 2010) were employed to achieve a combined 30% response rate.
- Results were categorized into two groups: dairy producers planning to expand their operations and those not planning to expand their operations.
- Using the DE-DSS, simulations were conducted and outcomes compared for exploring aggressive dairy expansion vs. growing a herd naturally from within under identical market conditions over a period of 55 months.

RESULTS

Table 1. General demographics of survey respondents.

Planning to Expand (N=78)	Not Planning to Expand (N=222)
47.1 (SD 10.7)	51.2 (SD 10.7)
94.8	95.5
5.2	4.5
25.1 (SD 13.0)	29.1 (SD 12.1)
12.8 (SD 2.2)	12.4 (SD 2.1)
0	0.5
1.3	0
18.7	5.5
1.3	2.3
20.0	19.7
42.7	53.2
9.3	10.1
5.3	3.2
0	1.8
1.3	3.7
33.1	66.5
	Planning to Expand to Expand (N=78) 47.1 (SD 10.7) 94.8 94.8 5.2 25.1 (SD 13.0) 12.8 (SD 2.2) 0 1.3 18.7 1.3 20.0 42.7 9.3 5.3 0 1.3 33.1

* Denotes significant difference between means at (P<0.05) for t-test (NS) Denotes no significant difference between means at (P<0.05) for t-test (SD) Denotes standard deviation from the mean

Figure 1. Top three reasons for and against expansion.



Figure 2. Three most limiting factors to improve or grow an operation. Low profits Planning nning to Expand Land costs SD 10.7) rofits 🗸 🖌 Not Planning to Expand 18.5 % Labor Availability Table 2. General farm characteristics related to dairy production. Planning to Expand Farm Enterprise (N=78) airy: Milking Herd # of Cows* 247.4 (SD 363.0) Rolling Herd Avg. (RHA, kg/cow/yr) 9,864 (SD 2,243) Milkings per Day (%) 72.0 28.0 Dairy: Recordkeeping Actively Keep Records (%) 94.8 Yes 5.2 No Own A Computer (%) 60.5 Yes 39.5 No Records Program Used (%) 41.7 DairyCOMP 305 6.3 Scout PC Dart 2.1 AgSource DM 12.5)ther (%) 6.5 QuickBooks Quicken Ag Manager 1.3 Excel Other 14.3 airy: Milking System (%) 51.9 Stall barn w/pipeline

Flat Parlor in Existing Building (%)

Walk-through

Back-out

Satisfied with

current size

Not Planning

to Expand

(N=222)

82.1 (SD 117.0)

9,363 (SD 1,746)

94.5

5.5

90.2

9.8

45.0

55.0

10.7

3.6

3.6

8.3

5.6

1.9 0.9

1.4

19.1

69.1

0.9

0.5

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Table 2 (Cont'd). General farm ch	naracteristics related t	o dairy production.	Table 4. Description of cropping	systems on WI dairy farm	S.
Farm Enterprise	Planning to Expand (N=78)	Not Planning to Expand (N=222)	Farm Enterprise	Planning to Expand (N=78)	Not Planning to Expand (N=222)
Pit Parlor in Existing Building (%	(6)		Crops: Hectares (Mean)		
Auto-tandem	0	0	Hectares Owned (NS)	124.3 (SD 155.5)	106.0 (SD 111.2
Herringbone	8.9	3.2	Hectares Rented *	127.2 (SD 198.7)	46.7 (SD 67.6)
Parallel	6.3	3.6			
Rotary	0	0	Crops: Nutrient Management F	Plan? (%)	
Swing	51	23	Ves	85.9	59.0
Owing	5.1	2.5	No	1/ 1	41 O
Dit Darlar in Now Puilding (%)			NO	14.1	41.0
Pit Parlor in New Building (%)	0	0.5			
Auto-tandem	0	0.5	Crops: Hectares (Mean)		
Herringbone	6.3	3.2	Corn Grain	46.0 (SD 62.5)	30.9 (SD 44.5)
Parallel	15.2	3.7	Corn Silage	70.1 (SD 116.6)	20.7 (SD 33.6)
Rotary	1.3	0	Soybeans	17.2 (SD 54.0)	12.9 (SD 26.1)
Swing	0	2.3	Alfalfa	88.7 (SD 97.0)	43.3 (SD 40.6
C			Pasture/Grazing	12.1 (SD 18.3)	14.9 (SD 23.5)
Other (%)			·		
By hand	1 3	32			
Stall harn w/huskata	1.0	5.2 A E	Other (Mean)		
	1.3	4.0	Wheat	17.5 (SD 10.0)	14.5 (SD 13.9)
Kodots	1.3	0.9	Winter Wheat	27.0 (SD 12.4)	27.9 (SD 14.5
			Oats	93 (SD 1/ 0)	85 (SD / 6)
* Denotes significant differe	ence between means	at (P<0.05) for t-test	Barlov		
(SD) Denotes standard dovicti	on from the moon			19.3 (30 21.1)	9.4 (SU 12.4)
			Grassy Hay	10.7 (SD 6.6)	35.1 (SD 23.6)
			Peas	14.2 (SD 0)	15.7 (SD 12.6)
			Snap Beans	0 (SD 0)	60.7 (SD 24.0)
			Other	8.1 (SD 0)	12.4 (SD 12.0)
	(N=78)	(N=222)	Table 5. Areas of interest among	g dairy producers.	
Dairy: Primary Bedding Type (%)	20.8	15.0		Planning	Not Planning
Sand	30.8	15.2	Information Needs	to Expand	to Expand
Straw/Cornstalks	52.6	74.0		(N=78)	(N=222)
Compost	0	0		. ,	\ /
Manure Solids	2.6	0.5	Doin, Broduction/Monogoment	(0/)	
Other	0	0	Dairy Production/Management	(%)	
			Genetics	15.2	15.5
Dairy: Manure Handling System	(%)		Reproduction	30.3	36.0
Skid Stoor/Tractor Scrapo	55.3	35 5	Heifers	16.7	16.1
Automatia Saranara	10.7	0.7	Calves	34.8	23.6
	19.7	2.7	Herd Management	45.5	26.1
Flush	0	0.3		25.8	10.6
				23.0	10.0
Other (%)					17.4
Gutter w/barn cleaner	19.7	25.6	i ransition Cows	25.8	20.5
By Hand	2.7	4.1	Expansion	42.4	4.3
Other	26	1 0	Financial Planning	48.5	30.4
	2.0	1.0	Other	10.6	23.6
Dairy: Manura Starana Langth (1	()				
	<i>(</i> 0)		Financial Information (%)		
Dally Haul	28.2	44.7	Liquidity Measures	33.3	21 3
Short-term (0-60 Days)	14.1	11.2	Solvopov Mosouros	11 7	400
Long-term (60+ Days)	57.7	44.2		41./	12.0
			Profitability Measures	54.2	34.0
Dairy: Manure Storage Size (Mea	an)		Repayment Capacity	41.7	20.2
Cubic Motors	••• / 1 18/ 7 (QD 1600 E)		Financial Efficiency	54.2	40.4
	1,104.7 (SU 1030.5)	403.3 (30711.4)	Other	1.4	3.2
Liters 13,941,2	241 (50 17,867,043)	4,338,951 (SD 7,817,482)	None	15.3	38.8
Storage Liner Type (%)					
Concrete	41.8	49.6	Iable 6. Likelihood of improvem	ients on expanding dairy fa	irms.
Farth/Clay	<u>47</u> 3	<i>A</i> 1 0			
Synthetic	0.1 0.1	דו.ט ד ד	Likelihood to Make	Somewhat Likelv (%)	Verv Likelv (%)
	9.1	1.1	Changes/Improvements	(N=78)	(N=78)
Other	1.8	0.9		((1-10)
(SD) Denotes standard deviat	tion from the mean		Increase Herd Size by more than	n 20% 41 0	25.6
			Improve Milking Facilities	32.1	20.0
			Improve Manure Storage	167	10.0
				10.7	19.2
			Improve Calf/Helter Facilities	41.0	26.9

ble 7. Future plans of	expandin	g dairie	es.		
ans Relating to Expansion		% (N=78)			
netable to Commence	e Expans	ion			
0-1 Years	•			44	4.7
1-2 Years			14.5		4.5
2-3 Years				15	5.8
3-4 Years				6	5.6
4-5 Years				5	5.3
Not Sure				1:	3.2
thad of Expansion					
Grow from Within				8	97
Purchase Youngstock				09.1 11 5	
Purchase Bred Heifer				3' '	3 3
Purchase Cows	5			1	7 9
Not Sure					88
ure 3. Defining criteria Dairy Exp Syste	a for DE-D Dansio em (D	DSS sin ON – E-D	nulatior - Dec SS)	cision Simula	Support ation
Г	Beginni	na Her	d Strue	cture	
	Cows Mi	ilkina [.] 1	71		
	Total Co	y. 23 ws [.] 20(r		
	Hoifors ($1_2/1$ m) () () () () () () () () () () () () () (1	
L		1-24111		1	
Scenario #1 Aggressively expand to 400 cows in 55 m by using sexed sem heifers.	: d herd nonths nen in all		\frown	So Allow her from with aggressiv	cenario #2: d to grow naturally in (Do not vely expand).
Scenario #1 Aggressively expand to 400 cows in 55 m by using sexed sem heifers.	: d herd nonths nen in all			So Allow her from with aggressiv	cenario #2: d to grow naturally in (Do not vely expand).
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Scenario #1 Aggressively expand to 400 cows in 55 m by using sexed sem heifers. Month #4: Milk price increase f \$0.336/kg to \$0.342	: d herd nonths nen in all from 2/kg.			So Allow her from with aggressiv Milk price \$0.336/kg	cenario #2: d to grow naturally in (Do not vely expand). Month #4: e increase from g to \$0.342/kg.
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 Table 8.
 Comparison of total net present values (US \$) over 55 months.

Scenario	Present Value of Cash Flows	% Difference
1 2	\$528,391 \$480,986	9.0%

CONCLUSIONS

- The characteristics of dairy producers planning to expand are often different from those not planning to expand:
 - Producers planning to expand are younger and have less farming experience than producers not planning to expand.
 - Producers planning to expand have larger herd sizes and rent more hectares than producers not planning to expand.
- A great deal of information needs to be processed before, during, and after an aggressive herd expansion – this provides several opportunities for application of risk management tools, such as the Dairy Expansion Decision Support System created by the UW Dairy Management Team.
- Through simulation of two scenarios, viable growth strategies were explored for a 200-cow dairy using the DE-DSS
- Aggressive herd expansion using sexed semen for heifers produced a 9.0% higher net present value over the course of 55 months compared to natural herd growth under identical market conditions
- Dairy producers need more information regarding finances and businessrelated topics.

A detailed user guide, instructional video, and free download of the DE-DSS are available in the "Tools" section of the UW-Dairy Management website: DairyMGT.info.

