Dairy Farm Management Priorities and Implications

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DAIRY FARM MANAGEMENT PRIORITIES & IMPLICATIONS

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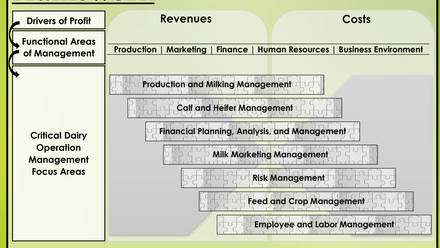
How farmers prioritize managerial areas and grow their operation through seven critical dairy farm management factors in a best-worst choice experiment.

Research Highlights

Problem & Objective

- Dairy managers are unsure how to prioritize managerial capacity.
- The objective of this analysis was to understand how dairy farmers prioritize the seven critical management areas:
  1. Calf and Heifer Management (CHM)
  2. Employee and Labor Management (ELM)
  3. Feed and Crop Management (FCM)
  4. Risk Management (RM)
  5. Production and Milking Management (PMM)
  6. Milk Marketing (MM)
  7. Financial Planning, Analysis, Management (FPA)

Framework



- Coupling functional areas of management with drivers of profit, the critical dairy operation management focused areas can be seen as interconnected puzzle.

Survey

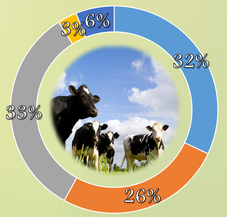
- Data collection: Summer 2015
- US Mail w/ Online Reply Option:
  1. Minnesota
  2. Indiana
  3. Vermont
  4. Wisconsin
  5. California
  6. Michigan
  7. Florida

Overall Response Rate: 29%
Completion Rate: 14%

Methodology

- Choice tasks with best-worst scaling were used to measure tradeoffs among critical management areas.
- Analysis Using:
  Random parameter logit (RPL), and Latent class modeling (LCM)

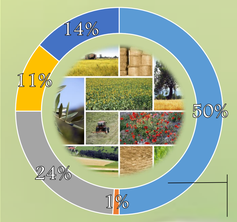
Survey Respondent QuickStats



Herd Size

- <50 cows
- 50-99 cows
- 100-999 cows
- 1,000-2,499 cows
- 2,500+

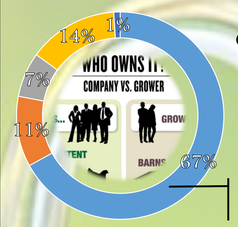
Avg. Total # of Milk Cows: 417
Range of Herd Sizes: 8-9,675



Other Enterprises

- None
- Custom Heifers
- Cash Crop
- Other Livestock
- Other

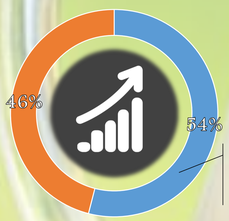
Half of the operations don't engage in other enterprises.



Ownership Structure

- Individual Owner
- Partnership
- Limited Partnership
- Family Corporation
- Non-Family Corp.

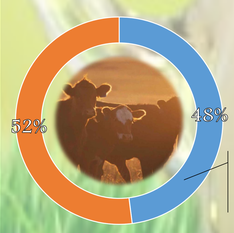
A majority of dairy operations are sole proprietorships.



Growth Expectations by 2020

- Yes
- No

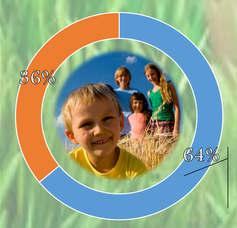
64% of farmers with intentions to grow have made plans to transfer the farm to the next generation.



Operator Retiring In 10 Years

- Yes
- No

55% of operations planning to retire in 10 years still wish to grow herd size by 2020.



Farm Transfer Plans in Place

- Yes
- No

55% of sole proprietorships have a transfer plan to the next generation

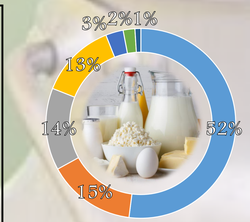
Analysis and Results

Random Parameter Logit Model Assumes Heterogeneity

Relative Rank	Managerial Area	Coef. $\tilde{\beta}$	Std. Err.	Preference Shares, m
1	PMM	2.9014	-0.1343	52%
2	CHM	1.6698	-0.1171	15%
3	FCM	1.6003	-0.1119	14%
4	FPA	1.5162	-0.1268	13%
5	ELM	0.0000	----	3%
6	RM	-0.4755	-0.1086	2%
7	MM	-0.6486	-0.1254	1%

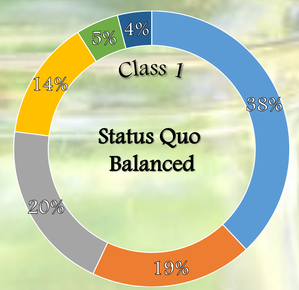
Share of Preference for Management Area

$$m = \frac{(e^{\tilde{\beta}m})}{\sum_{h=1}^{M} e^{\tilde{\beta}m}}$$



- Managers prioritized production/milking management highest.
- Milk Marketing is ranked as the lowest priority.
- The top 4 areas account for about 94% of preference shares.

Latent Class Modeling Groups Similar Dairy Farm Managers Into Four Different Segments

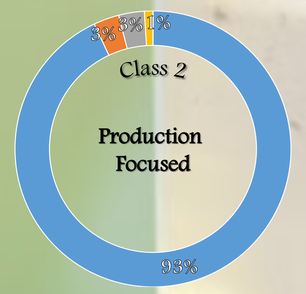


Production/Milking Mgmt. is 2X more important than Feed/Crop Mgmt.

Risk/Milk Marketing are low priority

Are smaller operations with less than 1000 head herds.

Only about 49% expect to grow their operation by 2020.

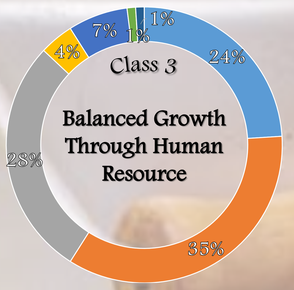


Production/Milking Mgmt. is the highest priority.

Other mgmt. areas have a cumulative share of only approximately 7%.

Herd sizes for these farms tended to be slightly larger than Class 1.

About 60% of managers intended to grow their herds.

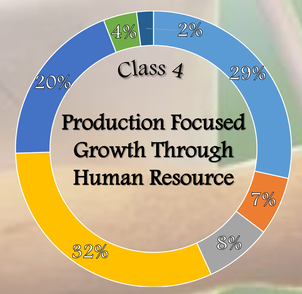


Calf/Heifer Mgmt. and Feed/Crop Mgmt. rank highest across all classes.

7% allocation of preference share to Employee/Labor.

Herd sizes were similar to those found in Class 2

42% of these managers expected to grow herds by the year 2020.



Financial Planning/Analysis/Management and Employee/Labor Mgmt. are the highest rank across all classes.

Operations were larger – about 77% w/ over 1K head herds.

65% of managers report intentions to grow, the highest.

Farm managers of operations likely to be well depicted by the above classes:

Conclusions and Implications

- Farmers make important allocations among seven critical dairy farm management areas (production/milking, calf/heifer, feed/crop, financial planning/analysis/mgmt., risk, milk marketing, and employee/labor mgmt.)
- Production and milking management was found to be approximately 3.5X more important than calf/heifer management.
- Four classes of dairy producers with distinctly different agribusiness management strategies and priorities were identified.
- Larger farms already placing more emphasis on employees/labor mgmt. indicated prioritization of financial mgmt. for their success.
- Smaller farms stating growth intentions largely lacked emphasis on management areas aside from production and milking management.
  → This highlights opportunities to facilitate success through a more holistic management approach.
- Dairy farmers can continuously evaluate management practices for the adoption (or dis-adoption) given market conditions.