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**A comparative study of the productivity,
selected health parameters and
reproductive performance of Holstein
Friesian x Jersey crossbred cows in
Victorian pasture based seasonal calving
herds:**

Dairy Farmer Survey

July 2004

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Executive Summary

Executive Summary

Background and methodology

The Dairy Farmer Survey report aims to offer insight into dairy farmers' experience and perceptions of differences in fertility, production, health and longevity of the Holstein Friesian breed and Holstein Friesian x Jersey crossbred cows. Aspects relating to sustainability, perceived profitability, ease of management, herd flexibility and information requirements are also explored.

A series of three dairy farmer group discussions (which mainly served as a scoping exercise) and 201 random Computer Assisted Telephone Interviews were conducted to provide the qualitative and quantitative data required for the study. The telephone interview sample includes representative proportions of dairy farmers with Holstein Friesian, Jersey and Holstein Friesian x Jersey (HF x J) crossbred herds. Most survey respondents (91%) have had some experience of HF x J crossbred cows.

Definitions

Reference is made to several dairy farmer segments throughout this report. These segments are defined in the Table (i) below:

Table (i)

HERD SIZE	SMALL	Milking herds of less than 150 cows
	MEDIUM	Milking herds of between 150 and 300 cows
	LARGE	Milking herds of greater than 300 cows
CALVING PATTERN	SEASONAL	Herds where cows calve in one distinct group, spread over five months or less
	SPLIT	Herds where cows calve in two or three distinct groups or batches
	YEAR ROUND	Herds where cows calve over ten months or more
HERD COMPOSITION	≥20% CROSSBREDS	Milking herds where Holstein Friesian x Jersey cows currently make up at least 20%
	<20% CROSSBREDS	Milking herds where Holstein Friesian x Jersey cows currently make up less than 20%
	STRAIGHT HF	Milking herds where no Holstein Friesian x Jersey cows are currently in the milking herd
FEEDING REGIME	NO SUPPLEMENTS	No supplements fed to dairy cows in an average rainfall season
	LIGHT SUPPLEMENT FEEDERS	Less than ½ tonne of grain or pellets fed per cow per year in an average rainfall season
	MEDIUM SUPPLEMENT FEEDERS	Between ½ and 1½ tonnes of grain or pellets fed per cow per year in an average rainfall season
	HEAVY SUPPLEMENT FEEDERS	More than 1½ tonnes of grain or pellets fed per cow per year in an average rainfall season

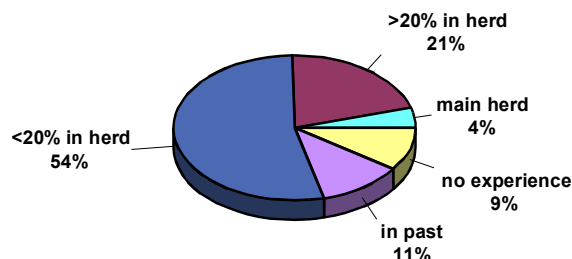
The key findings

Respondents' experience of Holstein Friesian x Jersey crossbred cows

Chart (i)

Eighty percent (80%) of respondents currently have at least some HF x J crossbred cows in their milking herd. In 4% of herds, crossbred cows are the main breed. A further 11% of respondents have had experience of HF x J crossbred cows in the past.

experience of hf x j crossbred cows



base: all respondents (n = 201)

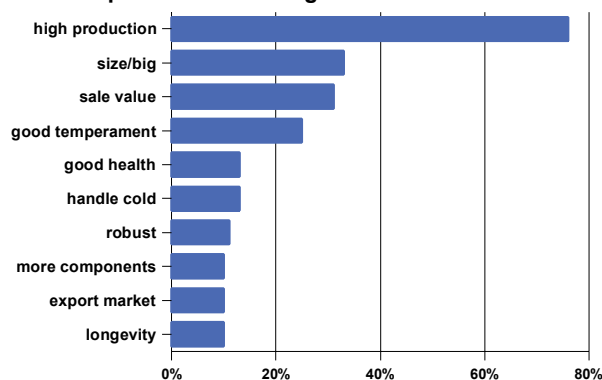
Most respondents have had experience with crossbreds sired by AI (75%) and 46% have come in contact with crossbreds sired by bulls.

Perceived advantages of Holstein Friesian dairy cows (unprompted)

Chart (ii)

As expected, the majority of respondents (78%) nominate the Holstein Friesian's ability to produce high volumes of milk as an advantage of the breed. Their size (mentioned by 33%), chopper or sale value (31%) and temperament (25%) are also perceived to be advantages.

main perceived advantages of holstein friesians



base: all respondents (n = 201)

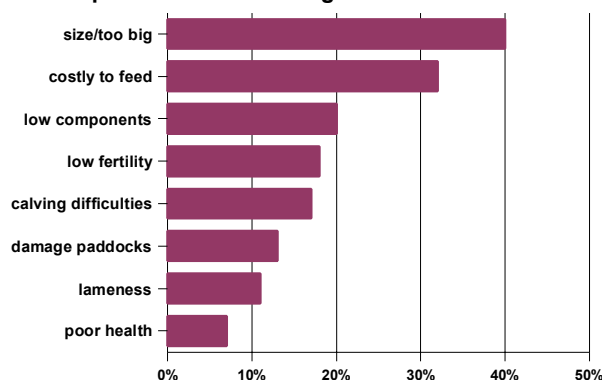
Good health, ability to handle cold conditions and robustness are secondary advantages, identified by approximately one in eight respondents.

Perceived disadvantages of Holstein Friesian dairy cows (unprompted)

Chart (iii)

While the size of Holstein Friesian cows is perceived by some respondents to be an advantage, 40% believe it is actually a disadvantage. The subsequent cost of feeding large cows is also mentioned by 32% as a disadvantage of the breed.

main perceived disadvantages of holstein friesians



base: all respondents (n = 201)

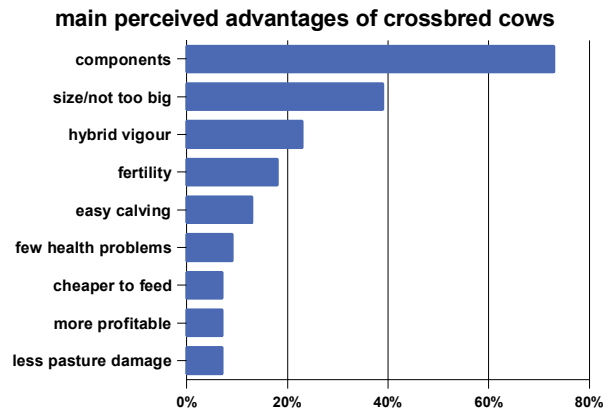
The low proportion of components produced by Holstein Friesians is mentioned by 20%, while less than one in five mention fertility (18%) and calving difficulties (17%) – suggesting these two issues are perceived to be only secondary disadvantages.

Perceived advantages of Holstein Friesian x Jersey crossbred cows (unprompted)

Chart (iv)

For a sizeable proportion of respondents (73%), the high level of components produced by HF x J crossbred cows is perceived to be an advantage of the breed.

Their size (mentioned by 39%), hybrid vigour (23%), fertility (18%) and ease of calving (13%) are also factors nominated as advantages.



base: all respondents (n = 201)

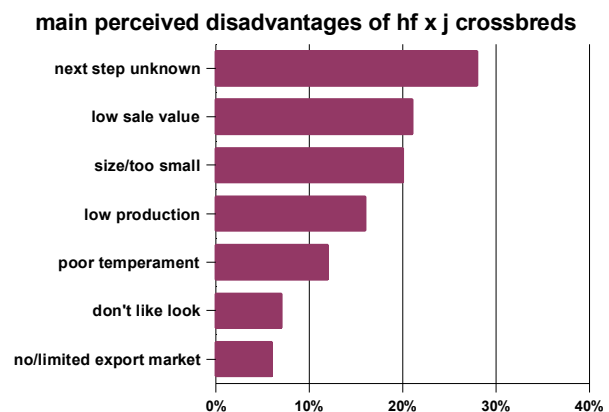
Gippsland respondents also tend to suggest that HF x J crossbred cows have less of a problem with lameness (16% mentioning).

Perceived disadvantages of Holstein Friesian x Jersey crossbred cows (unprompted)

Chart (v)

Not knowing where to go with the breeding program after the first cross is nominated by 28% of respondents as a disadvantage of HF x J crossbred cows. This result is substantially influenced by the 45% of respondents who have straight Holstein Friesian herds mentioning this factor.

Other perceived disadvantages of HF x J crossbred cows include low chopper value (21% mentioning), small size (20%), lower milk production (16%) and poor temperament (12%).



base: all respondents (n = 201)

An interesting comment about the size of crossbreds which may shed some light on survey results was made by a group participant with a crossbred herd. His comment reveals an underlying stigma attached to having an HF x J crossbred herd:

“I can’t go anywhere – I can’t even have a beer in the pub without someone having a go at me for having fieldmice.”

Glenormiston group

Perceived effects of increasing proportion of Holstein Friesian x Jersey crossbred cows in herd

There is strong evidence in the survey results to suggest that many dairy farmers believe HF x J crossbred cows can improve profitability, herd conception rates and overall production (possibly due

to higher conception rates and fewer cows empty). Most would anticipate little or no impact on dairy farmer lifestyle, herd health, ease of herd or farm management or the number of cows culled.

Relatively few dairy farmers believe crossbred cows have a negative effect on these factors, as shown in Table (ii) below:

Table (ii)

FACTOR	BASE: ALL RESPONDENTS				
	POSITIVE EFFECT	NEGATIVE EFFECT	NEITHER POSITIVE OR NEGATIVE	BOTH	DON'T KNOW
Physical aspects of the farm, like pugging of paddocks, erosion, etc.	48%	6%	44%	0%	1%
Profitability of the herd	47%	17%	34%	1%	1%
Conception rate of the herd	43%	4%	41%	2%	9%
Overall production of the herd	42%	19%	30%	5%	4%
Overall health of the herd	38%	6%	53%	1%	2%
Ease of herd management	33%	16%	50%	1%	0%
Ease of farm management	32%	9%	56%	2%	0%
Number of cows culled	30%	15%	52%	0%	1%
Dairy farmer lifestyle	16%	10%	72%	0%	1%

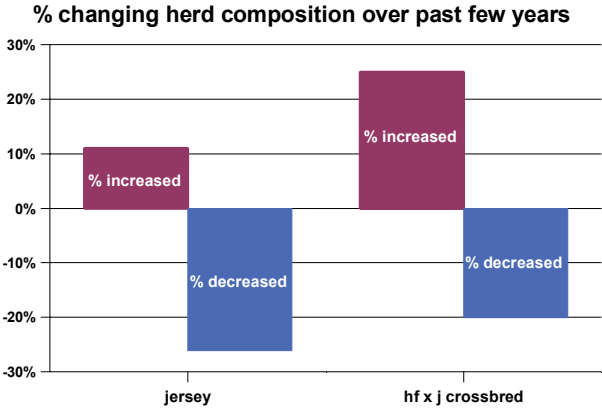
These findings are interesting in light of proportions which nominated individual factors as advantages or disadvantages, suggesting that many dairy farmers are aware of benefits which are possible by milking HF x J crossbred cows, but the benefits are not enough to influence the composition of their herd. Other survey results suggest that the overall value of the herd is a significant factor in the decision to milk Holstein Friesians as is a lack of understanding of effective crossbred breeding programs, but perhaps the stigma attached to crossbred cows is also an influencing factor.

Drivers for changing herd composition in past and future

Chart (vi)

Over the past few years, 61% of respondents have changed the composition of their dairy herd. Twenty-five percent (25%) have increased the proportion of HF x J crossbred cows in their herd while 20% have decreased the proportion.

During the same period, 11% of respondents increased Jersey numbers compared to 26% who decreased them.



base: all respondents (n = 201)

While these figures may initially appear to suggest the increase in HF x J crossbred cows is due to the interim stage of changing herd composition from Jersey to Holstein Friesian, closer examination of the data reveals that for most respondents, this is not the case. The drivers to increase the proportion of HF x J crossbred cows are varied but are mainly associated with the proportion of components produced by these cows, ease of calving and greater fertility.

An undetermined preference for the Holstein Friesian breed, perceived low production and low chopper value have been the three main factors influencing respondents' decisions to decrease the number of HF x J crossbred cows in the herd.

Survey results suggest that while over the next five years, the majority of respondents (61%) will retain the current composition of their dairy herd, there is likely to be a slight rise in the proportion of dairy farmers increasing the number of HF x J crossbred cows in their herd (5%).

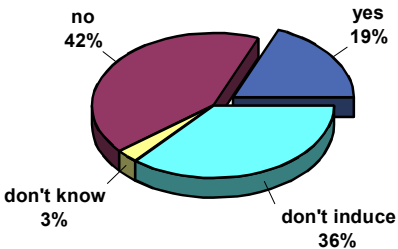
Potential impact of inability to induce

If induction was no longer available to the dairy industry, it is likely that almost one in five dairy farmers would consider increasing the number of crossbred cows in their herds. As expected, this result is reflected more so in seasonally calving herds (74%) than other systems and among those who already have at least 20% of their herd consisting of HF x J crossbred cows (30%).

It is possible these proportions would increase if the economic evaluation being prepared for the project reveals gains in profitability by increasing the number of crossbred cows.

Chart (vii)

whether increase crossbreds if unable to induce



base: all respondents (n = 201)

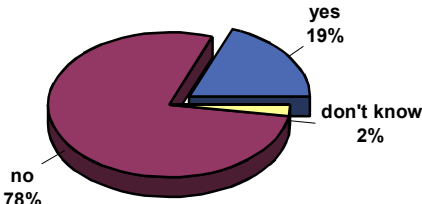
Potential impact of feed price rises

A similar proportion of respondents (19%) suggest they would introduce or increase the number of crossbred cows in their herd if the cost of grain continues to rise in future.

This question was added as an afterthought and consequently only 130 respondents are included in this measure. It is notable that although the sample size of heavy feeders is

Chart (viii)

whether increase crossbreds if grain costs increase



base: n = 130

too small to draw definite conclusions (n = 11), they all claim they would not consider introducing or increasing the number of crossbreds if grain prices continue to rise.

Information requirements (unprompted)

Fifty-eight percent (58%) of respondents could nominate at least one type of information required to assist the industry in making decisions about the number of HF x J crossbred cows to include in their herd.

Unbiased, scientific information focussing on production, economics, health and fertility comparisons between Holstein Friesians and HF x J crossbred cows would be well received by dairy farmers interested in additional information.

Level of interest in economic data (prompted)

In the unprompted measure comparatively few respondents (23%) suggested the industry would need economic data. Once prompted on this issue however, 61% claimed they would be interested in learning more about economic comparisons between straight Holstein Friesian herds and HF x J crossbred herds, with 26% *very interested*.

Clearly many dairy farmers will take notice of Bill Malcolm’s economic comparison when it is released and will potentially be used to help dairy farmers make informed decisions about the composition of their herd.

The economic comparison is more likely to appeal to dairy farmers younger than 40 and/or those with medium to large sized herds, particularly if those herds already include some HF x J crossbreds.

Chart (ix)

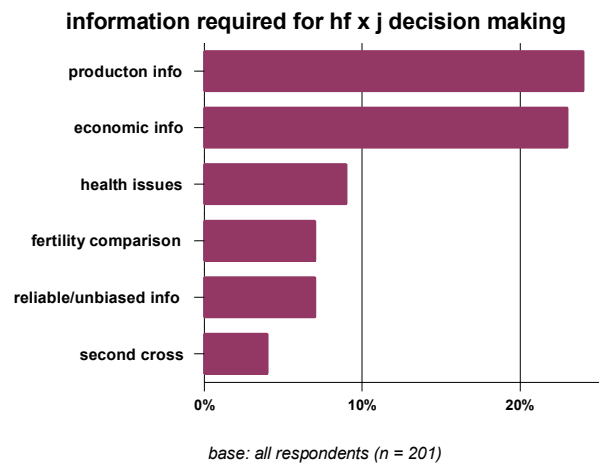
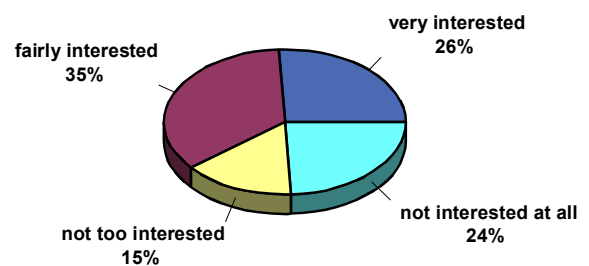


Chart (x)

interest in economic comparison of hf vs hf x j herd



base: all respondents (n = 201)

Conclusions and recommendations.

- Many respondents believe there are potential gains to be had in the areas of the physical aspects of the farm (pugging, erosion, etc.), herd profitability, conception rates and higher components by milking HF x J crossbred cows.
- Few however, claim they are likely to be milking a higher proportion of HF x J crossbred cows in future. This is primarily due to their lower chopper and sale value as well as many dairy farmers having little or no understanding of effective crossbred breeding programs. There is also some evidence to suggest there is some stigma attached to milking the smaller crossbred cows.
- Should other factors change, such as induction being no longer available to the industry, or if grain prices continue to rise, the proportion of HF x J crossbred cows is likely to increase on approximately one in five Victorian and Tasmanian dairy farms.
- Despite extensive reluctance to increase the number of including more crossbred cows in milking herds (particularly among those with straight Holstein Friesian herds), there is likely to be widespread interest in reliable, scientific information which provides an economic comparison of the performance of HF x J crossbred cows and straight Holstein Friesians.
- Information relating to proven and effective breeding programs may also assist some dairy farmers to make decisions about their herd composition.

Main Report

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Appendix 1: Dairy farmer group topic guideline

Appendix 2: CATI questionnaire

Section 1:
Introduction and objectives

1. Introduction and objectives

This survey has been commissioned as an element of the project “*A comparative study of the productivity, selected health parameters and reproductive performance of Holstein Friesian x Jersey crossbred cows in Victorian pasture based seasonal calving herds*” being conducted by Michael Pyman, University of Melbourne.

The primary aim of the survey is to provide insight into dairy farmers’ experience and perceptions of issues relating to fertility, production, health and longevity of their milking herd, specifically identifying differences between the Holstein Friesian breed and Holstein Friesian x Jersey crossbreds.

Aspects relating to sustainability, perceived profitability, ease of management and herd flexibility are also explored, as is the type of information required to assist dairy farmers make suitable choices relating to the most appropriate breed for their enterprise.

Specifically, the survey examines and measures the following issues:

- level of experience with Holstein Friesian x Jersey (HF x J) crossbred cows
- perceived advantages and disadvantages inherent in Holstein Friesian and HF x J crossbred dairy cows
- perceived impact of HF x J crossbred cows on the overall farm, particularly:
 - herd health
 - herd fertility
 - herd and farm management
 - herd profitability
 - farmer lifestyle
- potential impact on herd breed selection if industry prohibited from using induction
- potential impact on herd breed selection if grain prices continue to increase
- type of information required to assist herd breed selection decision-making

Data collected via the survey will assist the industry generally to provide the type and level of support required by dairy farmers in their decision-making processes.

Section 2:

Research methodology

2. Research methodology

To obtain data for the project, both qualitative and quantitative information was gathered via three group discussions and 201 Computer Assisted Telephone Interviews (CATI) with dairy farmers from Victoria and Tasmania.

Qualitative data collection:

Group discussions were conducted between Wednesday 12 May and Friday 28 May 2004. Table **Error! Not a valid link.** below outlines the group locations and dates:

Table 1

GROUP	LOCATION	DATE CONDUCTED
1	Tongala	Wednesday 12 May 2004
2	Glenormiston	Wednesday 26 May 2004
3	Warragul	Friday 28 May 2004

The group discussions were conducted mainly as a scoping exercise to determine which issues were important to include in the quantitative component of the survey. Where the findings from the groups enrich or expand upon the quantitative data, quotations and perceptions have been included in the report.

Group participants were selected from lists provided by veterinarians local to the area of the group location. The lists included dairy farmers with either pure Holstein Friesian herds or herds with at least 20% HF x J crossbreds. Those included on the lists represented a range of herd sizes, feeding regimes, land types (dryland or irrigation) and calving patterns (although those with year round calving herds were excluded).

All three group discussions were facilitated by Pam Watson, a senior consultant with Down To Earth Research with extensive experience in the dairy industry and knowledge of most aspects of dairy farming. Michael Pyman was present at all three groups and acted as a technical resource.

A loosely structured topic guideline (Appendix 1) was used to ensure all relevant issues were covered during the groups. In all groups, participants provided permission for the discussion to be recorded, ensuring all comments were noted and used in the analysis.

Quantitative data collection:

Dairy farmers interviewed in the quantitative component were randomly selected from a comprehensive list of dairy farmers purchased from Axiom Databases, a reputable and reliable commercial list company.

A structured questionnaire (Appendix 2) formed the basis of the 200 CATI interviews conducted. SurveyCraft, specialised marketing research software designed by SPSS, was used for both the CATI and randomisation process.

Quotas were set on each of the three dairy geographic regions in Victoria as well as Tasmania to ensure the sample in each region is sufficiently robust to draw sound statistical conclusions while not disproportionately influencing overall results. Table **Error! Not a valid link.** below outlines the final sample:

Table 2

REGION	NUMBER OF INTERVIEWS CONDUCTED
GippsDairy	55
Murray Dairy	66
WestVic Dairy	50
Tasmania	30
Total	201

To qualify for the survey, respondents were required to be the person responsible for making decisions relating to the composition and breed of the milking herd on a property where 100 cows or more are normally milked.

All interviews were conducted by Australian Fieldwork Solutions in accordance with Interviewer Quality Control Australia (IQCA) standards. Interviewing commenced on Tuesday 15 June 2004 and was completed on Tuesday 29 June 2004. Interviewers worked from a fully supervised telephone bank in Melbourne. All interviewers were thoroughly briefed by Pam Watson and Michael Pyman prior to fieldwork commencement.

The average interview length was 15 minutes, with good co-operation from dairy farmers participating in the survey. The response rate was a high 83% overall, with 17% of eligible dairy farmers refusing to participate. The proportion agreeing to the interview is in line with other surveys recently conducted in the dairy industry.

Confidence limits.

The sample of dairy farmers in the quantitative component of the survey is 201. On typical measurements involving the whole sample (where 70% of respondents concur), the standard sampling error at the 95% confidence level is approximately $\pm 6.4\%$, a reasonable level of accuracy.

Readers should exercise caution however, when examining responses for small sub-samples. On an issue where 70% of all respondents are *satisfied* and 30% are *dissatisfied*, the following table summarises the standard error at the 95% confidence level for different sample sizes:

Table 3

SAMPLE BASE	MARGIN FOR ERROR
50	±12.7%
100	±9.0%
150	±7.3%
200	±6.4%

Section 3:

Definitions and report notes

3. Definitions and report notes

Throughout this report, reference is made to several dairy farmer segments. Definitions of these segments is as follows:

Table 4

HERD SIZE	SMALL	Milking herds of less than 150 cows
	MEDIUM	Milking herds of between 150 and 300 cows
	LARGE	Milking herds of greater than 300 cows
CALVING PATTERN	SEASONAL	Herds where cows calve in one distinct group, spread over five months or less
	SPLIT	Herds where cows calve in two or three distinct groups or batches
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HERD COMPOSITION	≥20% CROSSBREDS	Milking herds where Holstein Friesian x Jersey cows currently make up at least 20%
	<20% CROSSBREDS	Milking herds where Holstein Friesian x Jersey cows currently make up less than 20%
	STRAIGHT HF	Milking herds where no Holstein Friesian x Jersey cows are currently in the milking herd
FEEDING REGIME	NO SUPPLEMENTS	No supplements fed to dairy cows in an average rainfall season
	LIGHT SUPPLEMENT FEEDING	Less than ½ tonne of grain or pellets fed per cow per year in an average rainfall season
	MEDIUM SUPPLEMENT FEEDING	Between ½ and 1½ tonnes of grain or pellets fed per cow per year in an average rainfall season
	HEAVY SUPPLEMENT FEEDING	More than 1½ tonnes of grain or pellets fed per cow per year in an average rainfall season

NFI

Readers will notice ‘(nfi)’ typed after some tabulated responses from survey participants. This means ‘no further information’ and indicates that respondents could only offer a general response to the question asked and despite interviewers probing carefully (without prompting), more specific details were not forthcoming.

Sample bases

Throughout this report, bases used for measuring various aspects vary. Readers should note that bases are identified for all report sections, tabulations and charts.

Statistically significant differences

In this report, only statistically significant differences at the 95% confidence level as well as trends in data are commented on. If no reference is made of a difference between segments, the reader can safely assume it is because the difference is not significant.

**Sections 4 - 9:
Survey results**

4. Current herd composition

4.1 Main breed of milking herd

Question asked:

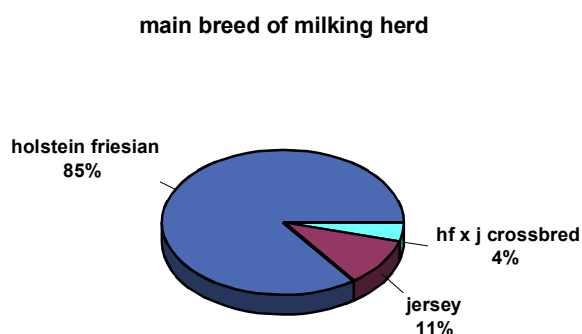
Q2. What is the main breed of your milking herd?

Note: For the purpose of this survey, respondents with milking herds where the main breed is Aussie Red, Brown Swiss, Guernsey, Ayrshire or other have been excluded. These people represented less than 1% of all eligible people contacted.

Key findings

Chart 1

- In line with figures already known to the industry, 85% of respondents have a herd where Holstein Friesians are the main breed. Eleven percent (11%) of respondents' herds are mainly Jersey while 4% have a herd consisting of mainly HF x J crossbred cows.



base: all respondents (n = 201)

- The proportion of respondents with Holstein Friesian as their main dairy breed is significantly higher in GippsDairy (93%) and Murray Dairy (89%) regions compared to WestVic Dairy (74%), where 24% have mainly Jersey herds. Tasmanian respondents have the highest propensity to have crossbred cows as their main breed (13%).

Table 5

MAIN BREED	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Holstein Friesian	85%	93%	89%	74%	77%
Jersey	11%	5%	6%	24%	10%
Holstein Friesian x Jersey crossbred	4%	2%	5%	2%	13%

- Twenty-two percent (22%) of respondents with small herds have Jerseys as the main breed, a significant 15 and 19 points higher respectively than medium (7%) and large herds (3%).

Implications

Results for this measure are in line with industry herd test data.

4.2 Experience of Holstein Friesian x Jersey crossbred cows

Questions asked:

Q3. Do you have any Friesian Jersey crossbred cows in your milking herd?

Q5. Have you had Friesian Jersey crossbred cows in your milking herd in the past?

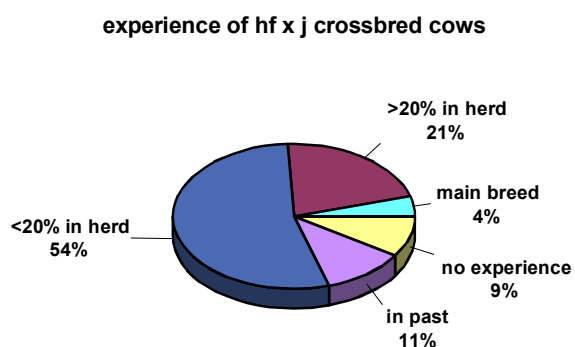
Q6. Are your crossbreds sired by AI, bull with heifer or bull with herd?

Key findings

Chart 2

- More than half the dairy farmers participating in this survey currently have herds where HF x J crossbred cows constitute less than 20% of their milking cows.

More than nine in ten respondents however have had at least some experience of HF x J crossbred cows, either having them in the herd currently, or in the past.



base: all respondents (n = 201)

- Eighteen percent (18%) of respondents from WestVic Dairy region have not had any experience of HF x J crossbred cows in their herd, a significant 13 points higher than among their counterparts from Murray Dairy (5%).

Table 6

ELEMENT	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Main breed is HF x J crossbred cows	4%	2%	5%	2%	13%
Main breed is not HF x J crossbred cows, but currently have ≥20% crossbreds in herd	21%	20%	18%	20%	30%
Main breed is not HF x J crossbred cows, but currently have <20% crossbreds in herd	54%	60%	65%	42%	37%
Main breed is not HF x J crossbred cows, but have had some in herd in the past	11%	11%	8%	18%	10%
NET: Some experience with HF x J crossbred cows	91%	93%	95%	82%	90%
Main breed is not HF x J crossbred cows and none in herd currently or in past	9%	7%	5%	18%	10%

- Among respondents who currently have crossbred cows in their milking herd or who have had them in the past, 75% have experience of HF x J cows sired by AI, 31% sired by the bull with the herd and 24% bull with the heifers.

Table 7

SIRE BY	BASE: RESPONDENTS WITH EXPERIENCE OF CROSSBRED COWS				
	TOTAL (n = 182)	GIPPSDAIRY (n = 51)	MURRAY DAIRY (n = 63)	WESTVIC (n = 55)	TAS (n = 30)
AI	75%	78%	75%	83%	59%
Bull with herd	31%	31%	32%	27%	37%
Bull with heifer	24%	12%	27%	32%	26%
Don't know	2%	2%	3%	0%	0%

- Forty-six percent (46%) of respondents with experience of crossbred cows have come in contact with HF x J crossbreds sired by bulls.

Implications

The vast majority of survey respondents have had some experience of Holstein Friesian x Jersey crossbred cows, many of which have been sired by AI. Many however, have also had experience of crossbreds sired by a bull.

5. Perceived advantages and disadvantages of Holstein Friesian and Holstein Friesian x Jersey crossbred dairy cows

5.1 Perceived advantages of Holstein Friesian dairy cows

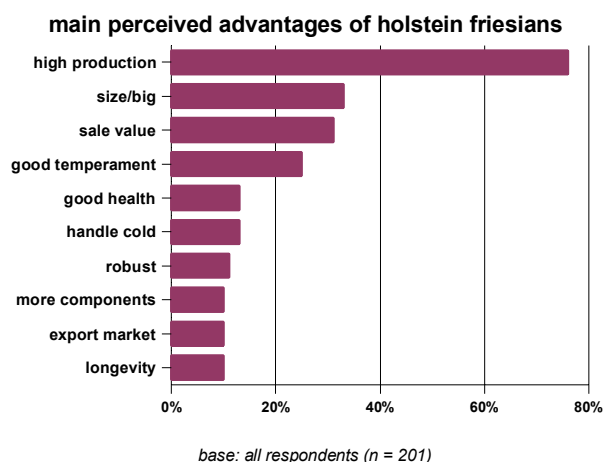
Question asked:

Q7. In your opinion, what are the advantages of the Holstein Friesian breed? (Unprompted)

Key findings

Chart 3

- In an anticipated result, *high production* achieves the highest mention rate as an advantage of the Holstein Friesian breed. This factor is mentioned by 78% of respondents, while *size* achieves the second highest mention rate, nominated by 33% of respondents.



This result validates several comments made in the group discussions, similar to the following:

“On our last herd test which was done a couple of weeks ago, I went through all the pedigrees to see what they actually were ... and we do tend to have more Friesians in the top 5% - basically they are a bit bigger and generally Friesians give more litres.”

Tongala group

- The *sale value* of Holstein Friesians is mentioned by more than three in ten respondents (31%), a factor which was highlighted in the group discussions as a primary driver to milk this breed:

“One factor that influences me is the possible resale value of the herd. If we don’t get any rain and the situation forces us to sell, then it’s a factor.”

Tongala group

- Twenty-five percent (25%) of respondents believe *placid temperament* is an advantage of Holstein Friesians, while at least one in ten mention health or robustness. One group participant made the following comment:

“Friesians want to live more. If they have milk fever, a Friesian will have more of a go than a crossy.”

Tongala group

- Only one person participating in the survey mentioned *popular breed* as an advantage, despite this issue being raised in the group discussions:

“I mean, it’s just been so popular to have Friesians – that was the trend.” Tongala group

- The proportion of respondents mentioning *handle cold/wet weather better* is significantly higher among those from WestVic (20%) and GippsDairy (18%) compared to Murray Dairy (3%) – as would be expected. This factor was also mentioned in the Glenormiston group:

“I was always told to stay away from Jerseys because they don’t stand up to the harsh Western District weather, while the Friesians were more able to stand up to the harsher conditions in July and August.” Glenormiston group

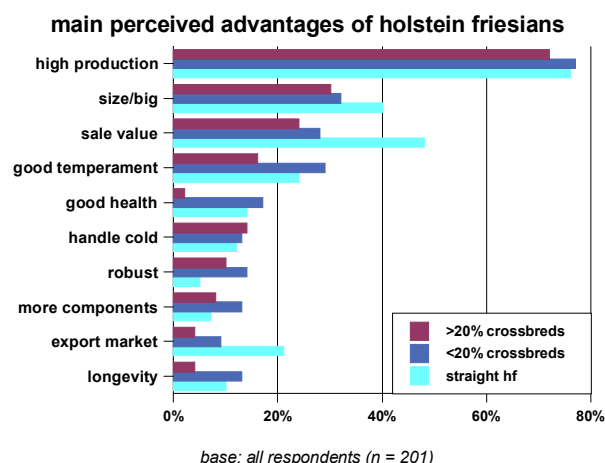
- Notably, not one Tasmanian respondent mentions *export market potential* compared to 16% from WestVic.

Table Error! Not a valid link. below outlines results for this measure by region:

Table 8

MAIN PERCEIVED ADVANTAGES OF HOLSTEIN FRIESIANS	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
High milk production	76%	71%	82%	74%	73%
Size / big	33%	31%	41%	32%	23%
Worth more money to sell	31%	33%	26%	28%	43%
Good temperament / placid	25%	25%	27%	26%	17%
Few health problems	13%	9%	17%	18%	3%
Handle cold / wet weather better	13%	18%	3%	20%	13%
Strong / robust / tough	11%	9%	15%	12%	3%
More solids / components	10%	7%	9%	12%	17%
Export market potential	10%	9%	12%	16%	0%
Longevity / last a long time	10%	11%	14%	8%	3%
Easier to rear as calves / calves do better	8%	5%	6%	14%	7%
Good semen stock available	7%	9%	8%	8%	3%
More profitable	7%	7%	8%	4%	10%
Aesthetically pleasing	3%	0%	5%	4%	3%
Forage harder / eat more	2%	2%	3%	4%	0%
No advantages	3%	2%	2%	6%	3%

- Respondents with straight Holstein Friesian herds have a significantly higher propensity than their counterparts to mention *worth more money to sell* and *export market potential* as advantages of Holstein Friesians.



Few health problems is mentioned by significantly higher proportions of respondents with few or no crossbred cows in their milking herd compared to those with >20% (17% and 14% respectively compared to 2%).

Conversely, 16% of respondents with crossbred cows making up more than 20% of the milking herd mention *easier to rear as calves/calves do better* as an advantage of Holstein Friesians, significantly higher than those with <20% crossbreds (5%) or none (7%).

- Nineteen percent (19%) of respondents with large herds mention *good semen stock available* as an advantage of the HF breed, significantly higher than those with a medium sized herd (6%) or small herd (3%).
- The proportion of respondents aged younger than 40 mentioning *size/big* (46%) is significantly higher than among those aged older than 40 (29%).
- Respondents who herd test are significantly more likely than those who do not to mention *high milk production* (80% compared to 66%) or *more profitable* (9% compared to 2%).

Implications

High milk production, size, value and temperament are the four top of mind aspects of the Holstein Friesian breed which are seen to be advantages by dairy farmers. Perceived good health, ability to handle cold conditions and robustness are secondary aspects.

There is some evidence to suggest that while dairy farmers with pure Holstein Friesian herds are influenced to milk the breed by the high rate of production of these cows, chopper and export values are also factors with significant influence.

5.2 Perceived disadvantages of Holstein Friesian dairy cows

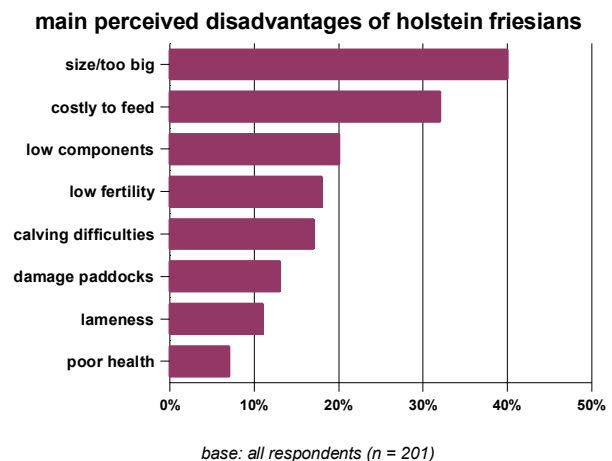
Question asked:

Q8. And in your opinion, what are the disadvantages of the Holstein Friesian breed? (Unprompted)

Key findings

Chart 5

- It is notable that no single aspect of the Holstein Friesian breed is nominated as a disadvantage by more than 40% of respondents. The size of the breed is perceived to be a disadvantage by 40%, despite being seen as an advantage by 33%. Size was also discussed in the groups, with comments such as the following made:



“The size of the Friesians, the heavy monsters in the paddock when you are a grass based industry. I’m a bit concerned about a mob of heavy Friesian cows bogging up a paddock.”

Tongala group

- Other disadvantages mentioned of the Holstein Friesian breed mainly include the cost of feeding, low proportion of components, fertility and calving issues. Comments from the group discussions support this result:

“I don’t believe in feeding grain when grain prices are dearer than a kilo of milk.”

Tongala group

“The Friesians just can’t calve by themselves ... you’d help 50% and 15%-20% would retain their membranes.”

Glenormiston group

“On the empty rate, for my herd last year, I had 35 empty ... and it was interesting that 30 of those 35 were Holsteins.”

Warragul group

- A significantly higher proportion of respondents from the GippsDairy region (55%) mention *size/too big* as a disadvantage of the HF breed compared to their counterparts from WestVic Dairy (34%) and Murray Dairy (33%).

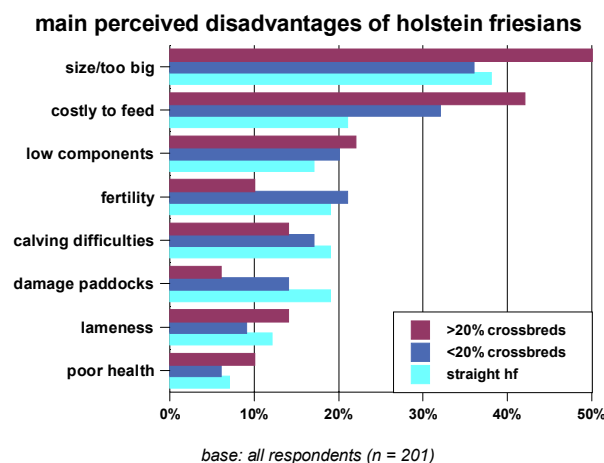
- Results for this measure are detailed in Table **Error! Not a valid link.** below:

Table 9

MAIN PERCEIVED DISADVANTAGES OF HOLSTEIN FRIESIANS	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Size / too big	40%	55%	33%	34%	37%
Costly to feed	32%	36%	32%	28%	33%
Low proportion of components	20%	15%	26%	16%	23%
Fertility / difficult to get in calf	18%	18%	18%	20%	13%
Calving difficulties	17%	11%	18%	20%	20%
Damage paddocks	13%	16%	6%	16%	17%
Lameness	11%	13%	6%	16%	10%
Poor health	7%	11%	5%	4%	10%
Poor temperament / heifers difficult to manage	4%	4%	6%	4%	0%
Prone to skin conditions / eczema / cancer	3%	4%	8%	0%	0%
Poor longevity	2%	4%	2%	2%	3%
Struggle in hot weather	2%	4%	5%	0%	0%
Less profitable	2%	4%	2%	0%	3%
Prone to mastitis	2%	5%	2%	0%	0%
No disadvantages	17%	15%	14%	26%	17%

Chart 6

- Forty-two percent (42%) of respondents with herds consisting of at least 20% crossbred cows mention *costly to feed*, a significant 10 and 21 points higher respectively than those with fewer than 20% crossbred cows (32%) or straight Holstein Friesian herds (21%).
- Respondents with large herds have a significantly higher propensity than their counterparts with small herds to mention *size/too big* (55% compared to 28%), *fertility/difficult to get in calf* (32% compared to 10%) and *lameness* (23% compared to 2%).



- The proportion of respondents who have been in the industry for less than 10 years mentioning *costly to feed* (55%) is significantly higher than among those who have been dairying for longer than 10 years (28%).

Implications

The size of Holstein Friesian cows and the subsequent cost of feeding for relatively low levels of components are the key disadvantages of the breed according to respondents. This opinion may have been influenced somewhat by the recent effects of drought and high grain costs.

Poor fertility and calving difficulties are also nominated as disadvantages by substantial proportions of respondents, but appear to be secondary disadvantages.

5.3 Perceived advantages of Holstein Friesian x Jersey crossbred cows

Question asked:

Q9. In your opinion, what are the advantages of the Friesian Jersey crossbred cows? (Unprompted)

Key findings

Chart 7

- The high proportion of components produced by crossbred cows is mentioned by 73% of respondents as an advantage.

Group discussion respondents also highlighted the advantage of high levels of components, making statements similar to the following:

“I don’t need milk. Milk doesn’t worry me – solids do and that’s basically why I’m milking them (crossbreds).” Glenormiston group

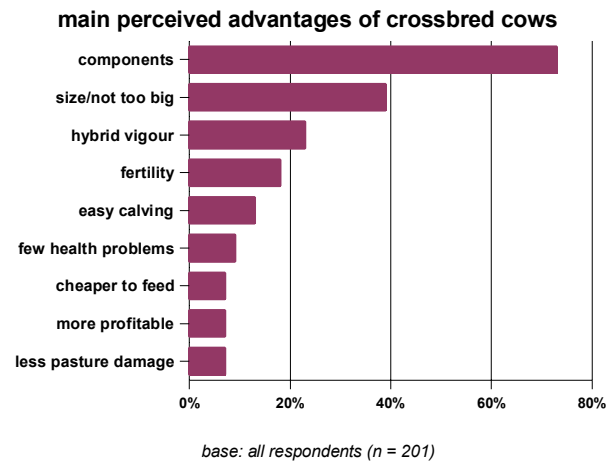
“In more recent times, cartage has become more of an issue – the cost of cartage, so more milk solids per litre is a bit more of an argument.” Tongala group

- The smaller size of crossbreds is nominated as an advantage by almost four in ten, while 21% mention hybrid vigour and 18% mention fertility. Comments from the group discussions provide some insight on these factors:

“I always had a strong emphasis on not getting an over big cow.” Glenormiston group

“We would say that the crossbreds are lower maintenance. You don’t have the feet problems, the mastitis problems, even getting them back in calf.” Warragul group

“I looked at our Autumn calving group and the crosses certainly helped. We had a higher percentage in calf in the first three weeks.” Tongala group



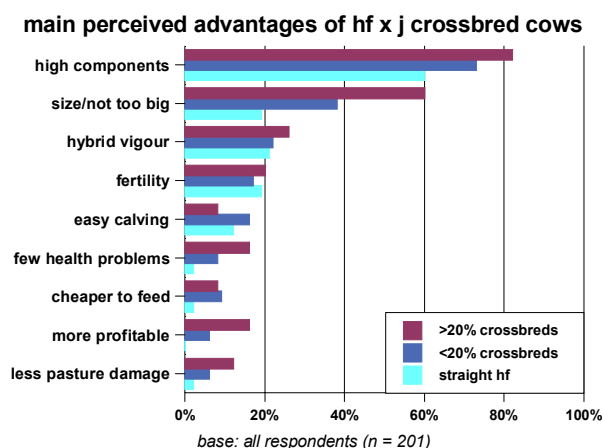
- By region, several significant differences are evident in results for this measure, including the following:
 - 79% from Murray Dairy and 78% from GippsDairy mention *high proportion of components* compared to 60% from WestVic Dairy
 - 20% from Tasmania mention *less pasture damage* compared to 5% from Murray Dairy and 4% from GippsDairy
 - 16% from GippsDairy mention *lameness* compared to 0% from Murray Dairy and 2% from WestVic
- Table **Error! Not a valid link.** below outlines the main mentions for this measure by region:

Table 10

MAIN PERCEIVED ADVANTAGES OF CROSSBREDS	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Higher proportion of components	73%	78%	79%	60%	70%
Size / not too big	39%	33%	41%	36%	53%
Hybrid vigour / tough / robust	23%	25%	29%	12%	23%
Fertility / easy to get in calf	18%	25%	15%	14%	20%
Easy calving	13%	7%	15%	16%	13%
Few health problems	9%	9%	11%	6%	10%
Cheaper to feed / eat less	7%	5%	8%	6%	13%
More profitable	7%	7%	8%	4%	10%
Less pasture damage	7%	4%	5%	6%	20%
Good production / more than Jerseys	6%	9%	9%	4%	0%
Less lameness	6%	16%	0%	2%	7%
Longevity / last a long time	5%	11%	6%	2%	0%
Better feed conversion than Friesians	4%	4%	8%	0%	7%
Handle weather conditions better	4%	5%	5%	2%	3%
Good temperament	2%	2%	3%	2%	0%
Higher stocking rate	2%	0%	2%	2%	7%
No advantages	8%	9%	5%	12%	7%

Chart 8

- While a high 60% of respondents with straight Holstein Friesian herds nominate *high proportion of components* as an advantage, this percentage is a significant 22 points lower than among respondents where crossbreds make up at least 20% of their herd (82%).



Differences between these two segments are also significant for the following mentions:

- *size/not too big* (60% compared to 19%)
- *few health problems* (16% compared to 2%)
- *more profitable* (16% compared to 0%)
- *no advantages* (2% compared to 21%)

The proportion of respondents with straight Holstein Friesian herds suggesting there are no advantages to crossbred cows (21%) is a significant 17 points higher than among those with at least some crossbreds in the herd (4%).

- Nineteen percent (19%) of respondents with large herds mention *less lameness* as an advantage of crossbred cows, significantly higher than those with small herds (5%) and medium sized herds (3%).
- Although the sample size of respondents who are light feeders of concentrates is too small to draw definite conclusions, it is notable they are significantly more likely than those feeding no concentrates, or are medium or heavy feeders to mention *fertility/easy to get in calf* (40% compared to 10%, 18% and 10% respectively) or *easy calving* (30% compared to 1%, 12% and 14% respectively).

Implications

For a sizeable proportion of dairy farmers, the high level of components produced by HF x J crossbred cows is a top of mind advantage of the breed. Their size, hybrid vigour, fertility and ease of calving are also aspects of the breed nominated as advantages.

There is some evidence in the results that dairy farmers with a high proportion of crossbred cows in their herd are mainly influenced to milk these cows by their ability to produce solids, but their size, health and perceived profitability are also factors.

5.4 Perceived disadvantages of Holstein Friesian x Jersey crossbred cows

Question asked:

Q10. And in your opinion, what are the disadvantages of the Friesian Jersey crossbred cows? (Unprompted)

Key findings

Chart 9

- Perceived disadvantages of HF x J crossbred cows are varied, with no single aspect mentioned by more than 28% of respondents. The main disadvantage mentioned is respondents' lack of knowledge on where to go with the breeding program, an issue summed up by a group participant:

"Where do you go after that though? That's the problem. We've got crossbreds because they're out of

outstanding heifers from good cow families and you knew, it didn't matter what came out, it was going to be a good crossbred. And they do, they perform at the top level of the herd, but where do you go from there?"

Warragul group

- Lower chopper prices and small size are also nominated as disadvantages of HF x J crossbred cows by at least 20% of respondents. Group discussion respondents made the following statements:

"I'd like to have an asset that's still worth something at the end of the day."

Glenormiston group

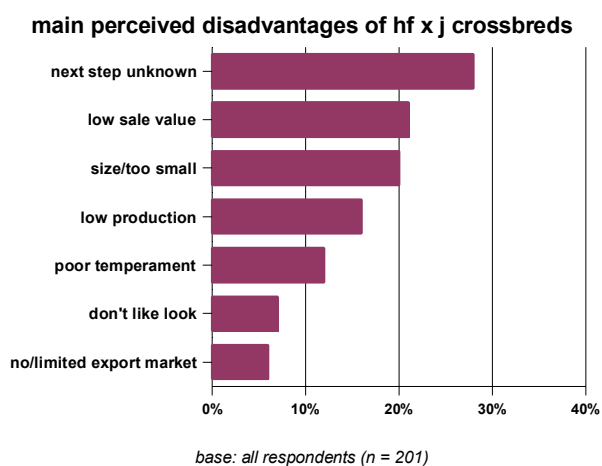
"I've got worries ... because with our cows they're fairly big ... that the smaller cows can't compete and for that reason I've been reluctant to introduce them I suppose. I don't really have experience with it, but it's a concern that I have."

Tongala group

"I think if they're significantly smaller, there's more room for them to actually get away from you. We've got a herringbone shed where the smaller herd is and there is a huge variation in their sizes – some of them are as big as Holsteins, but others are quite small and when you're milking them, you have to stretch out to reach them and physically they get away from you."

Warragul group

An interesting comment about size which may shed some light on survey results was made by a group participant with a crossbred herd:



“I can’t go anywhere – I can’t even have a beer in the pub without someone having a go at me for having fieldmice. Glenormiston group

- Lower milk production is also identified as a disadvantage by 16% of respondents, described in the following way by one group participant:

“Psychologically, they don’t have as much milk and that’s what people want to see – milk in the bucket and they just don’t have as many litres.” Glenormiston group

- While 12% of respondents in the survey mentioned *temperament/difficult to manage* as a disadvantage of HF x J crossbred cows, this factor was often discussed in the group discussions and was highlighted as a factor which may be based on bias against crossbreds:

“We’ve got crossbreds in our herd and I must admit, I’m guilty of it myself ... if someone plays up, I’d expect it’s got bloody Jersey in it. But the truth be known, if I really documented each one, it’s probably 50-50.” Tongala group

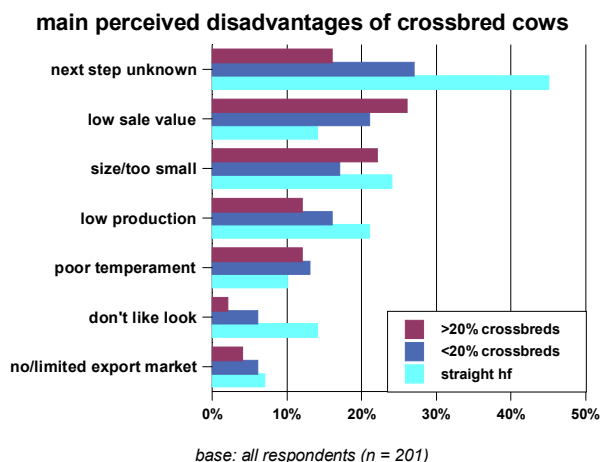
There was also some feeling that HF x J crossbreds with poor temperament had been sired by bulls rather than AI. Section 4.2 of this report reveals that almost half the respondents who have had experience with crossbreds have dealt with crossbreds sired by bulls, so this argument may have some merit.

- Table **Error! Not a valid link.** below outlines the main mentions for this measure:

Table 11

MAIN PERCEIVED DISADVANTAGES OF CROSSBREDS	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Don't know what the next step is	28%	33%	24%	34%	17%
Worth less to sell	21%	22%	21%	12%	33%
Size / too small	20%	16%	21%	24%	17%
Lower milk production	16%	22%	15%	16%	7%
Temperament / difficult to manage	12%	13%	12%	8%	17%
Don't like the look of them	7%	4%	6%	12%	7%
No / limited export market	6%	5%	5%	10%	3%
Calving difficulties from big calves in small cows	4%	4%	3%	8%	3%
Less profitable	4%	2%	5%	6%	7%
Not as strong / robust	4%	4%	6%	2%	7%
Poor health	4%	7%	3%	2%	3%
Create unevenness in herd	4%	2%	5%	6%	3%
Struggle with poor weather conditions	4%	5%	5%	4%	0%
Calves from 2 nd cross no good (nfi)	3%	4%	3%	2%	3%
No disadvantages	22%	24%	23%	24%	13%

- Forty-five percent (45%) of respondents with straight Holstein Friesian herds claim they *don't know what the next step is*, a significant 18 and 29 points higher respectively than those where crossbreds make up less than 20% of the herd (27%) and those where crossbreds constitute more than 20% of the herd (16%).
- There are no significant differences by herd size.



Implications

For many dairy farmers, particularly those with straight Holstein Friesian herds, designing an appropriate breeding program in a crossbred herd presents as a substantial problem. Other perceived disadvantages of the breed tend to revolve around chopper value, size (for a variety of reasons), production and temperament.

6. Perceived effects of increasing proportion of Holstein Friesian x Jersey crossbred cows in herd

Question asked:

Q11. Do you think that increasing the proportion of crossbred cows in your herd would have a positive or negative effect on the following ...

Key findings

- More than four in ten survey respondents believe that increasing the proportion of HF x J crossbred cows in their herd would have a positive impact on physical aspects of the farm, the profitability, conception rate and production of the herd.

It is generally believed that dairy farmer lifestyle, ease of farm management, health of herd, the number of cows

culled and ease of herd management would be unaffected by increasing the proportion of crossbred cows.

Chart 11

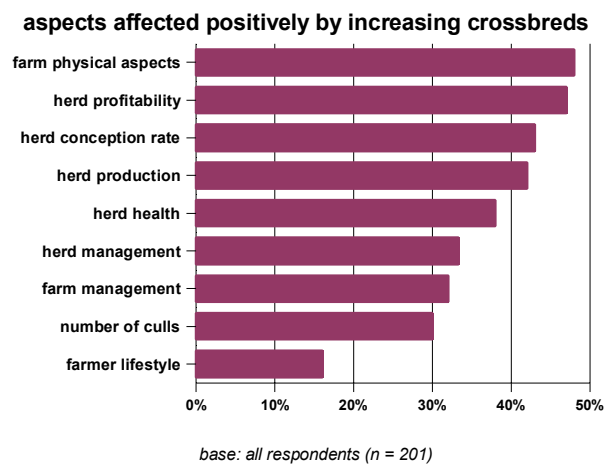


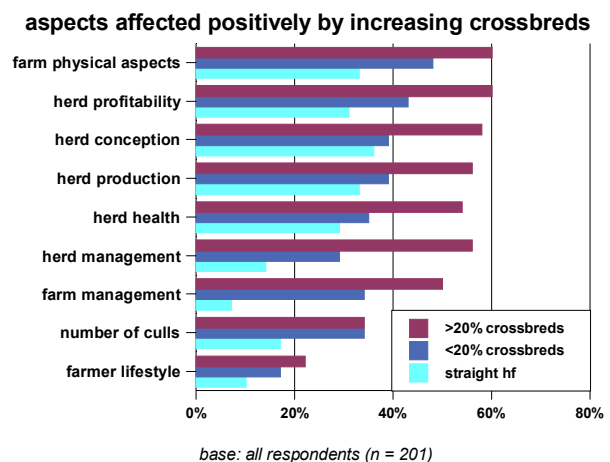
Table 12

FACTOR	BASE: ALL RESPONDENTS				
	POSITIVE EFFECT	NEGATIVE EFFECT	NEITHER POSITIVE OR NEGATIVE	BOTH	DON'T KNOW
Physical aspects of the farm, like pugging of paddocks, erosion, etc.	48%	6%	44%	0%	1%
Profitability of the herd	47%	17%	34%	1%	1%
Conception rate of the herd	43%	4%	41%	2%	9%
Overall production of the herd	42%	19%	30%	5%	4%
Overall health of the herd	38%	6%	53%	1%	2%
Ease of herd management	33%	16%	50%	1%	0%
Ease of farm management	32%	9%	56%	2%	0%
Number of cows culled	30%	15%	52%	0%	1%
Dairy farmer lifestyle	16%	10%	72%	0%	1%

- There are several significant differences in opinion by region, including the following:
 - 57% of respondents from Tasmania believe *conception rate of the herd* will be **positively** affected compared to 32% from WestVic Dairy
 - 40% of Tasmanian respondents and 35% from Murray Dairy believe *number of cows culled* will be **positively** affected compared to 16% from WestVic Dairy
 - 30% of WestVic Dairy respondents believe *overall production of the herd* will be **negatively** affected compared to 7% from Tasmania
 - 30% of respondents from WestVic Dairy believe *profitability of the herd* will be **negatively** affected compared to 12% from Murray Dairy and 13% from GippsDairy
 - 24% of respondents from WestVic Dairy believe *physical aspects of the farm* will be **negatively** affected compared to 2% from GippsDairy and 0% from Tasmania (It is notable that most of these WestVic Dairy respondents have Jersey herds)
 - 18% of Westvic Dairy respondents believe *ease of farm management* will be **negatively** affected compared to 5% from GippsDairy
 - 14% of respondents from WestVic Dairy believe *overall health of the herd* will be **negatively** affected compared to 2% from GippsDairy

Chart 12

- Respondents with herds where crossbred cows make up more than 20% of cows are significantly more likely than their counterparts with fewer than 20% crossbreds or straight Holstein Friesian herds to suggest the following aspects would be **positively** affected by increasing the proportion of crossbreds:



- *profitability of the herd* (68% compared to 43% and 31% respectively)
- *conception rate of the herd* (58% compared to 39% and 36% respectively)
- *overall production of the herd* (56% compared to 39% and 33% respectively)
- *ease of herd management* (56% compared to 29% and 14% respectively)
- *overall health of the herd* (54% compared to 35% and 29% respectively)
- *ease of farm management* (50% compared to 34% and 7% respectively)

- There are no significant differences by herd size.

Implications

There is strong evidence in the survey results to suggest that many dairy farmers believe HF x J crossbred cows can improve profitability, herd conception rates and overall production (probably due to higher levels of components) particularly among those with herds where crossbreds account for at least 20%. Most would anticipate little or no impact on dairy farmer lifestyle, herd health, ease of herd or farm management or the number of cows culled.

Relatively few dairy farmers believe crossbred cows have a negative effect on these factors, although negativity is quite high in the WestVic Dairy region.

These findings are interesting in light of proportions which nominated individual factors as advantages or disadvantages, suggesting that many dairy farmers are aware of benefits which are possible by milking HF x J crossbred cows, but the benefits are not enough to influence the composition of their herd. Other survey results suggest that the overall value of the herd is a significant factor in the decision to milk Holstein Friesians, as is the lack of knowledge on breeding programs. Perhaps the perceived stigma attached to crossbred cows also has some influence on dairy farmers' decisions.

7. Drivers for changing herd composition

7.1 Drivers for changing herd composition in the past and future

Questions asked:

Q13. Over the past few years have you changed your herd composition in any of the following ways?

Q14. Why have you (from Q13)?

Q15. Are you planning to change your herd composition in any of the following ways in the next 5 years?

Q16. Why are you planning to (from Q15) (Unprompted)?

Key findings

Chart 13

- Over the past few years, 61% of respondents have changed the composition of their dairy herd. One quarter (25%) have increased the proportion of crossbreds compared to 20% who have decreased the proportion. Eleven percent (11%) of respondents have increased the proportion of Jerseys compared to 26% decreasing the proportion. While these figures may initially seem to suggest that the increase in HF x J crossbreds could be due to changing the herd composition from Jersey to Holstein Friesian, closer examination of the data reveals that for most respondents, this is not the case.
- Tasmanian and Murray Dairy respondents have a significantly higher propensity than their counterparts from WestVic Dairy region to have increased the proportion of HF x J crossbreds in their herd over the past few years (43% and 29% respectively compared to 12%).

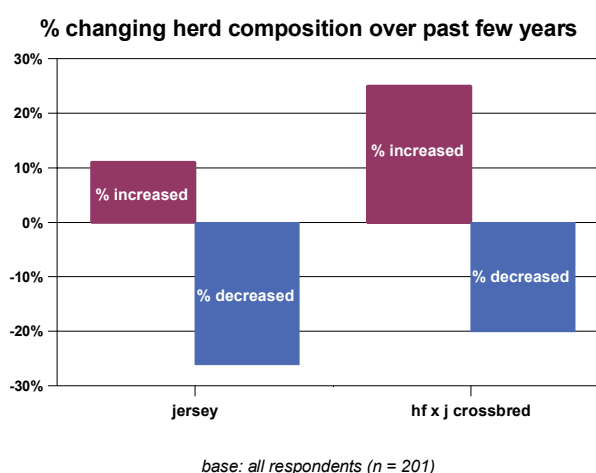


Table 13

CHANGES TO HERD COMPOSITION OVER THE PAST FEW YEARS	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Increased the proportion of Jersey cows	11%	4%	17%	8%	20%
Decreased the proportion of Jersey cows	26%	29%	26%	26%	23%
Increased the proportion of HF x J crossbred cows	25%	24%	29%	12%	43%
Decreased the proportion of HF x J crossbred cows	20%	15%	20%	32%	13%
No changes	39%	44%	36%	44%	27%

Note: Figures in the above table do not add to 100% due to some respondents undertaking more than one change

- There are no significant differences between other segments.
- The main reasons respondents provided for changing herd composition are varied and detailed in Table Error! Not a valid link. below:

Table 14

REASONS FOR MAKING CHANGES TO HERD COMPOSITION OVER PAST FEW YEARS (UNPROMPTED)	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Increased proportion of HF x J crossbred cows due to:					
Higher proportion of components	9%	11%	8%	0%	27%
Increasing / building herd numbers	6%	0%	11%	6%	7%
Ease of calving	5%	5%	5%	2%	13%
Greater fertility	3%	2%	3%	0%	10%
Greater profitability	2%	2%	2%	0%	10%
Less pugging / easier on pasture	2%	0%	0%	0%	17%
Better size	2%	0%	6%	0%	3%
Better production	2%	4%	3%	0%	3%
Less feed requirements	2%	0%	2%	2%	7%
Decreased proportion of HF x J crossbred cows due to:					
Increasing proportion of Friesians (nfi)	7%	9%	6%	10%	3%
Low production	5%	5%	5%	4%	7%
Low chopper value	5%	4%	5%	10%	0%
Small size / inability to compete	3%	2%	5%	4%	0%
Lack of knowledge of breeding program	3%	2%	3%	6%	0%
Low components	3%	2%	2%	4%	7%
Poor temperament	2%	0%	2%	4%	3%
No demand on overseas market	2%	2%	2%	4%	0%
Increased proportion of Jersey cows due to:					
Higher proportion of components	7%	2%	8%	8%	13%
Ease of calving	3%	0%	5%	0%	10%
Better fertility	2%	0%	2%	0%	10%
Better size than Friesians	2%	0%	3%	2%	3%
Decreased proportion of Jersey cows due to:					
Increasing proportion of Friesians (nfi)	7%	5%	8%	14%	0%
Small size / inability to compete	7%	7%	8%	6%	7%
Poor production	6%	7%	5%	6%	10%
Poor temperament	4%	9%	2%	0%	10%
Low chopper value	3%	4%	8%	0%	0%
Inability to cope with poor weather	2%	2%	2%	4%	3%
No changes	39%	38%	40%	37%	52%

- By region, significant differences include the following:
 - 27% of Tasmanian respondents increased the number of HF x J crossbred cows *due to higher components* compared to 0% from WestVic, 8% from Murray Dairy and 11% from GippsDairy
 - 13% of Tasmanian respondents increased the number of crossbreds *due to ease of calving* compared to 2% from WestVic Dairy.
- A further 5% of respondents intend to increase the proportion of HF x J crossbred cows in their herd over the next five years, while 2% are planning a decrease.

Table 15

PLANNED CHANGES TO HERD COMPOSITION OVER THE NEXT FIVE YEARS	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Increase the proportion of Jersey cows	2%	2%	3%	2%	0%
Decrease the proportion of Jersey cows	1%	4%	2%	0%	0%
Increase the proportion of HF x J crossbred cows	5%	9%	6%	2%	3%
Decrease the proportion of HF x J crossbred cows	2%	4%	0%	4%	0%
No changes planned	29%	27%	27%	36%	23%
Changed herd composition over the past few years	61%	56%	64%	56%	73%

Errors due to rounding

- Those respondents who are planning to increase the proportion of HF x J crossbred cows in their herd over the next five years are mainly driven by higher components and ease of calving.
- Satisfaction with current herd composition is the main reason given for no planned changes to herd composition in future.

Implications

Over the past few years, there has been a slight rise overall in the proportion of dairy farmers who have increased the HF x J crossbreds in their herds when compared to those who have decreased. This is particularly the case in Tasmania. Survey results suggest this trend is likely to continue over the next five years.

The drivers to increase the proportion of HF x J crossbred cows are varied but are mainly associated with the proportion of components produced by these cows, ease of calving and greater fertility.

An undetermined preference for the Holstein Friesian breed, perceived low production and low chopper value have been the three main factors influencing respondents' decisions to decrease the number of HF x J crossbred cows in the herd

7.2 Potential impact of inability to induce

Question asked:

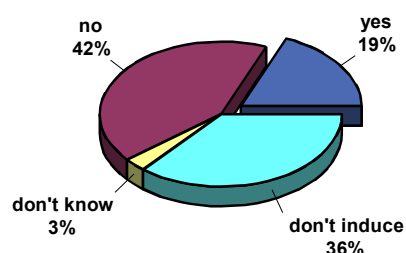
Q12a. If the dairy industry was no longer able to induce cows due to animal welfare limitations, would you consider introducing or increasing the number of crossbred cows in your milking herd?

Key findings

Chart 14

- Approximately two thirds of respondents (64%) induce cows. If induction was no longer an option, 19% of all respondents claim they would introduce or increase the number of crossbred cows in their milking herd. This figure equates to 29% of those who currently induce cows.

whether increase crossbreds if unable to induce



base: all respondents (n = 201)

- The proportion of all Tasmanian respondents likely to increase or introduce crossbred cows if induction was no longer an option (30%) is significantly higher than among their counterparts from the WestVic Dairy region (10%). Conversely, 38% of respondents from WestVic Dairy claim they will *definitely not* consider introducing or increasing crossbreds should induction no longer be available compared to 17% from Tasmania.

Table 16

WHETHER WOULD CONSIDER INTRODUCING OR INCREASING NUMBER OF CROSSBRED COWS IN MILKING HERD IF INDUCTION NO LONGER POSSIBLE	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Definitely yes	8%	5%	9%	6%	13%
Probably yes	11%	13%	12%	4%	17%
NET: Yes	19%	18%	21%	10%	30%
Probably no	13%	11%	12%	14%	17%
Definitely no	29%	33%	26%	38%	17%
NET: No	42%	44%	38%	52%	33%
Don't know	3%	7%	0%	2%	3%
Don't induce	36%	31%	41%	36%	33%
Proportion who induce likely to introduce or increase number of crossbreds	29%	26%	36%	16%	45%

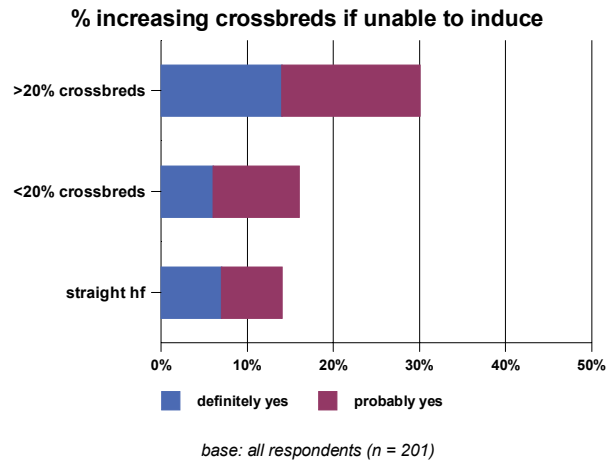
Errors due to rounding

- As expected, the proportion of respondents using induction is significantly higher among those with seasonal calving herds (74%) compared to split calvers (45%). Loss of the ability to induce

cows will encourage 24% of *all* respondents with seasonal calving herds to consider increasing the proportion of crossbreds in the herd. This figure equates to 32% of respondents with seasonal calving herds *who use induction*.

Chart 15

- Thirty percent (30%) of respondents who currently have a herd consisting of 20% or more crossbred cows would consider increasing this proportion if induction was no longer available, a significant 14 points higher than their counterparts with herds with few or no crossbred cows.



- Light supplement feeders and those who do not feed supplements are significantly more likely than medium or heavy feeders to *definitely* consider introducing or increasing the number of crossbred cows if induction was no longer possible (17% compared to 6%).

Implications

If induction was no longer available to the dairy industry, it is likely that one in five dairy farmers would consider increasing the number of crossbred cows in their dairy herds, more so in seasonally calving herds than other systems and among those who already have at least 20% of their herd consisting of HF x J crossbreds.

Readers should note that this measure is taken before an economic evaluation of crossbred cows has been circulated in the industry and the proportion may be higher if the economic evaluation reveals gains in profitability by increasing the number of crossbreds.

7.3 Potential impact of feed price rises

Question asked:

Q12b. If the cost of grain continues to rise in the future, would you consider introducing or increasing the number of crossbred cows in your milking herd?

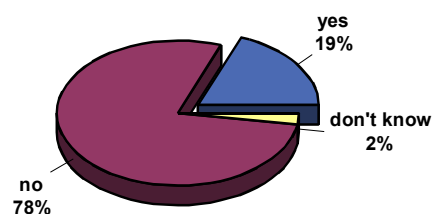
Note: This question was an afterthought and added to the questionnaire after 71 interviews had already been achieved and therefore the base is 130 respondents.

Key findings

- One in five respondents (19%) suggest they would consider introducing or increasing the number of crossbred cows in their milking herd if the cost of grain continues to rise in future.
- It is notable however that 18 of the respondents (or 14%) who were asked this question have Jersey herds and every respondent from this segment said they would not introduce crossbred cows to the herd if feed prices continue to rise.
- Approximately one quarter of respondents from Murray Dairy would consider introducing or increasing crossbreds if the cost of grain continues to rise. It is likely that this proportion would also be reflected in Tasmania, but the sample size in that State for this measure is too small to draw definite conclusions.

Chart 16

whether increase crossbreds if grain costs increase



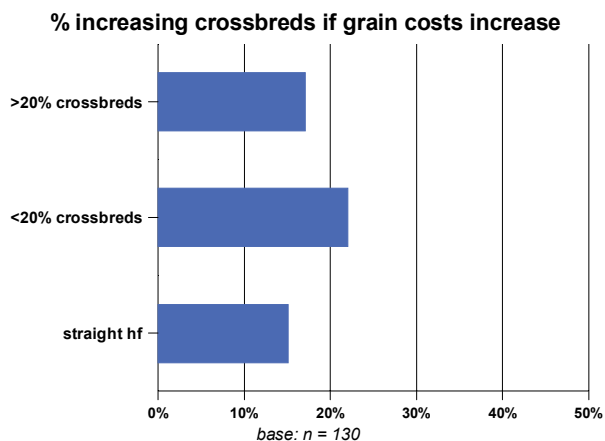
base: n = 130

Table 17

WHETHER WOULD CONSIDER INTRODUCING OR INCREASING NUMBER OF CROSSBRED COWS IN MILKING HERD IF COST OF GRAIN CONTINUES TO RISE	BASE: ALL RESPONDENTS				
	TOTAL (n = 130)	GIPPSDAIRY (n = 24)*	MURRAY DAIRY (n = 52)	WESTVIC (n = 37)	TAS (n = 17)*
Yes	19%	13%	25%	14%	24%
No	78%	83%	71%	86%	76%
Don't know	2%	4%	4%	0%	0%

**Caution, small sub-sample
Errors due to rounding*

- There are no significant differences in the proportion of respondents with varying proportions of crossbred cows in their herd.
- Although the sample size is too small to draw definite conclusions (n = 11), it is notable that all the respondents who are heavy feeders claim they would not consider introducing or increasing the number of crossbred cows despite continued rises in grain costs.



Implications

Continued rises in grain costs would be likely to result in approximately one in five dairy farmers increasing the number of HF x J crossbred cows in their herd. The proportion would likely be highest in northern Victoria and potentially in Tasmania.

Oddly, other survey results reveal that 80% of respondent herds are fed medium to heavy amounts of grain or pellets – herds which will be severely affected if grain prices increase substantially and this cost is not balanced by higher milk prices.

8. Information requirements

8.1 Information required to make decisions relating to herd composition

Questions asked:

If more than 20% crossbred cows in herd, ask:

Q17. What sort of information do you think dairy farmers need to know to be able to make an informed decision on whether to change the herd composition in relation to the number of crossbred cows in the herd?

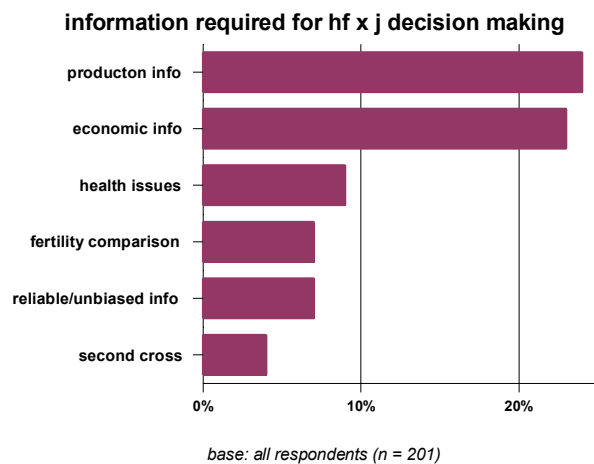
If less than 20% crossbred cows in herd, ask:

Q18. What additional information do you need to know to be able to make an informed decision on whether to change the herd composition in relation to the number of crossbred cows in the herd?

Key findings

Chart 18

- More than half the dairy farmers participating in the survey were able to suggest information the industry would require to make informed decisions about including crossbred cows in the milking herd. Production information, (mainly a comparison of production and component content) and economic information were suggested by approximately one quarter of respondents (unprompted).



- It is interesting to note that the main perceived disadvantage of HF x J crossbred cows is knowing where to go with the second cross (28% mentioning), but only 4% of respondents believe this information is required to assist decision-making.
- More than half (52%) of the respondent from WestVic Dairy believe there is no additional information required by dairy farmers, significantly higher than their Tasmanian counterparts (27%).

Table **Error! Not a valid link.** overleaf outlines the main mentions for this measure by region, creating nets for production, economic and health information to make the data more meaningful.

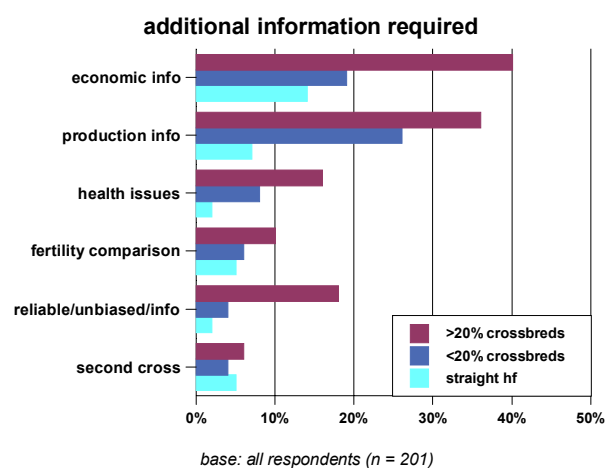
Table 18

ADDITIONAL INFORMATION REQUIRED TO MAKE INFORMED DECISION ON WHETHER TO CHANGE NUMBER OF CROSSBRED COWS IN HERD (UNPROMPTED)	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
NET: production information	24%	24%	30%	14%	30%
Comparison of production	15%	15%	23%	6%	13%
Comparison of components	7%	9%	8%	4%	7%
Comparison of herd test data	4%	5%	3%	4%	7%
Best feed to get production	2%	0%	3%	2%	3%
NET: economic information	23%	27%	26%	20%	17%
Comparison of profitability	17%	18%	21%	16%	10%
Comparison of cost of production	8%	11%	9%	4%	7%
Comparison of market potential	2%	2%	5%	0%	3%
NET: health issues	9%	7%	15%	6%	3%
Comparison of animal health (nfi)	6%	5%	11%	4%	0%
Comparison of cell counts	2%	2%	3%	2%	0%
Comparison of longevity	2%	2%	6%	0%	0%
Comparison of herd fertility	7%	0%	12%	6%	10%
Reliable / scientific / unbiased info	7%	7%	9%	2%	10%
Where to go with second cross	4%	5%	3%	8%	0%
Reliable info on temperament	2%	5%	2%	0%	0%
No information required	42%	45%	38%	52%	27%

Chart 19

- Respondents with more than 20% crossbreds are significantly more likely than those with straight Holstein Friesian herds to suggest the following:

- *economic information* (40% compared to 14%)
- *production information* (36% compared to 7%)
- *comparison of profitability* (28% compared to 14%)
- *reliable/scientific/unbiased information on all aspects* (18% compared to 2%)
- *health information* (16% compared to 2%)
- *comparison of cost of production* (12% compared to 0%)
- *comparison of components* (10% compared to 0%)
- *comparison of herd test data* (10% compared to 0%)



- Respondents with straight Holstein Friesian herds have a significantly higher propensity to suggest no information is required compared to those with at least 20% crossbreds in their herd (69% compared to 12%).

This lack of interest in additional information was evident among some of the group participants for whom Holstein Friesian is the only breed they would consider milking:

“We’re limited with the dairy we’ve got. Three hundred cows is the maximum number that we’re going to fit through and so I look at improving production on a per cow basis and if our 300 cows can produce the same amount of solids there must be some advantages in the rearing costs of lower numbers. If you had a big rotary dairy or something, then it doesn’t really matter if you milk 300 or 400. There is definitely the issue of components and there is definitely the issue of the Frisians getting too big. I think our average weight is about 575 kgs and that’s a good size Friesian. Any bigger than that and they get too hard to handle. I think cross breeding is one aspect of farm management and it’s a direction I don’t really want to go. I want to focus on different aspects of farming to maximise my profit.”

Glenormiston group

Implications

Unbiased, scientific information focussing on production, economics, health and fertility comparisons between Holstein Friesians and HF x J crossbred cows would be well received by dairy farmers interested in additional information.

It must be accepted however, that not all dairy farmers believe cross breeding is the right system for them and consequently this segment is not likely to be particularly interested in information on crossbred cows.

8.2 Level of interest in economic data

Question asked:

Q19. How interested would you be in learning more about economic comparisons between straight Holstein Friesian herds and crossbred herds?

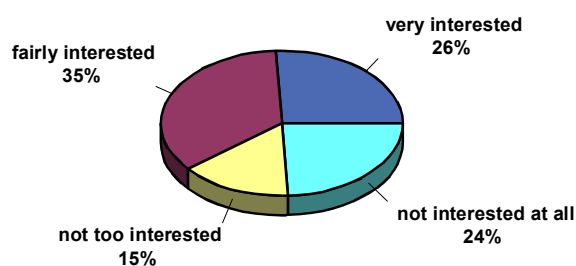
Key findings

- The previous section of this report reveals that, without prompting, 23% of respondents suggest the industry would require economic comparisons to help make informed decisions regarding crossbred cows.

Chart 20

Once prompted however, 61% of respondents suggest they would be interested in learning more about the economic comparisons of straight Holstein Friesian herds and HF x J crossbred herds, with 26% *very interested*.

interest in economic comparison of hf vs hf x j herd



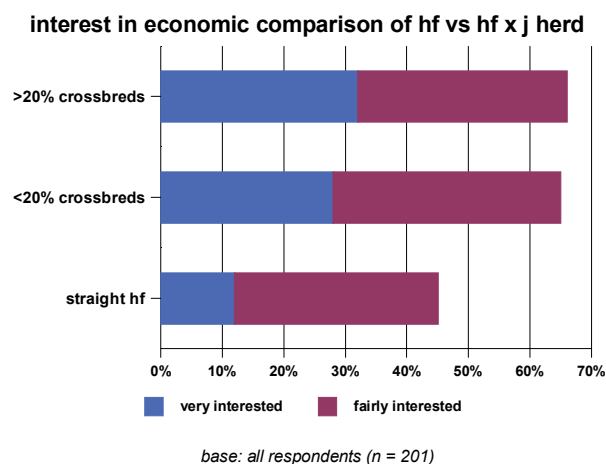
base: all respondents (n = 201)

- Significantly higher proportions of respondents from Tasmania (77%) and the Murray Dairy region (71%) are interested in an economic comparison compared to their counterparts from GippsDairy (55%) and WestVic Dairy (44%) regions.

Table 19

LEVEL OF INTEREST IN ECONOMIC COMPARISONS BETWEEN STRAIGHT HOLSTEIN FRIESIAN HERDS AND HF x J CROSSBRED HERDS	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Very interested	26%	20%	36%	14%	33%
Fairly interested	35%	35%	35%	30%	43%
NET: Interested	61%	55%	71%	44%	77%
Not too interested	15%	20%	9%	20%	10%
Not interested at all	24%	25%	20%	34%	13%
NET: Not interested	39%	45%	29%	54%	23%
Don't know	0%	0%	0%	2%	0%

- Respondents with $\geq 20\%$ and those with $< 20\%$ crossbred cows currently in their milking herd have a significantly higher propensity to be interested in learning more about economic comparisons than those with straight Holstein Friesian herds (66% and 64% compared to 45% respectively).



- Large (71%) and medium size (67%) herd owners are significantly more likely than those with small herds to be interested in economic comparisons (43%).
- Notably, 69% percent of respondents aged younger than 40 are interested in an economic comparison, a significant 30 points higher than those aged 60+ years.

Implications

Clearly many dairy farmers will take notice of Bill Malcolm/s economic comparison when it is released and it will potentially be used to help dairy farmers make informed decisions about the composition of their herd.

The economic comparison is more likely to appeal to younger dairy farmers and/or those with medium to large sized herds, particularly if these herds already include some JF x J crossbred cows.

9. Incidence of feeding concentrates

Questions asked:

Q23. In an average rainfall season, do you normally feed your cows any grain or pellets?

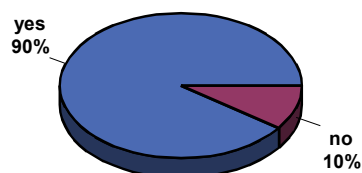
Q24. Would you say you normally feed less than ½ a tonne of grain or pellets per cow per year; between ½ and 1½ tonnes of grain or pellets per cow per year; more than 1½ tonnes of grain or pellets per cow per year?

Key findings

- Nine in ten respondents (90%) feed their cows grain or pellets in an average rainfall season.
- The proportion of respondents from WestVic Dairy (98%), GippsDairy (93%) and Murray Dairy (91%) supplementary feeding in average rainfall seasons is significantly higher than among their counterparts from Tasmania (67%).

Chart 22

whether feed grain or pellets in average season



base: all respondents (n = 201)

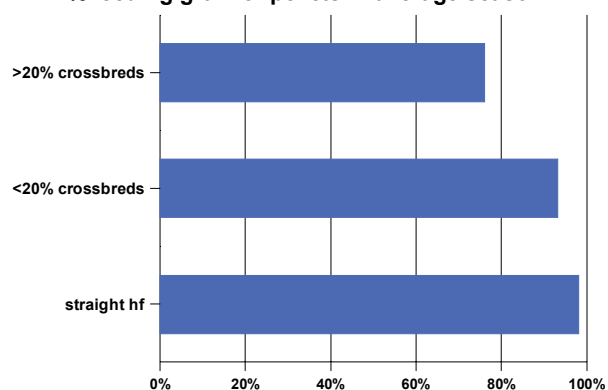
Table 20

WHETHER FEED GRAIN OR PELLETS IN AVERAGE RAINFALL SEASON	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Yes	90%	93%	91%	98%	67%
No	10%	7%	9%	2%	33%

Chart 23

- Ninety-eight percent (98%) of respondents with straight Holstein Friesian herds and 93% with fewer than 20% crossbred cows use supplementary feed, a significant 22 and 17 points higher respectively than those with more than 20% crossbreds (76%).

% feeding grain or pellets in average season

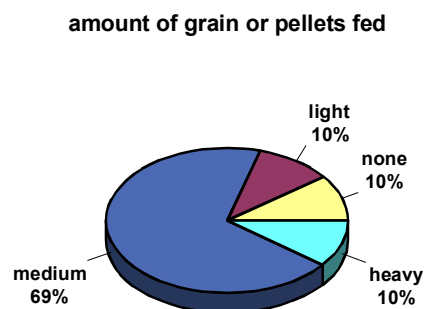


base: all respondents (n = 201)

- Respondents with large herds (100%) and medium sized herds (93%) are significantly more likely to feed supplements than those with small herds (78%).

Chart 24

- The majority of respondents (69%) feed a medium amount of grain or pellets, while 10% are light feeders and a further 10% are heavy feeders (the remaining 10% do not feed grain or pellets).



base: all respondents (n = 201)

- By region, significantly higher proportions of herds in WestVic Dairy (78%) and Murray Dairy (73%) are fed a medium amount of grain or pellets compared to Tasmania (50%).

Table 21

AMOUNT OF GRAIN OR PELLETS FED IN AVERAGE RAINFALL SEASON	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
No feed	10%	7%	9%	2%	33%
Light feeding (up to ½ tonne per cow per year)	10%	15%	5%	10%	13%
Medium feeding (½ to 1½ tonnes per cow per year)	69%	65%	73%	78%	50%
Heavy feeding (more than 1½ tonnes per cow per year)	10%	13%	14%	8%	3%
Don't now how much fed	0%	0%	0%	2%	0%

Errors due to rounding

- Twenty-three percent (23%) of large herds are heavily fed, a significantly greater proportion than small (7%) and medium herds (9%).

Implications

Only 20% of respondents currently run a primarily pasture based system – a result in line with the proportion whose herds are mainly Holstein Friesian.

Section 10:

Demographics of sample

10. Demographics of sample

10.1 Gender

Question asked:

Q61. Gender (do not ask)

Table 22

GENDER	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Male	79%	73%	80%	80%	87%
Female	21%	27%	20%	20%	13%

10.2 Age

Question asked:

Q62. What age group do you belong to?

Table 23

AGE	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
30 or younger	4%	5%	5%	2%	3%
31 – 39 years	20%	15%	14%	26%	33%
40 – 49 years	39%	45%	41%	34%	30%
50 – 59 years	26%	24%	30%	22%	27%
60+ years	11%	11%	11%	16%	7%

Errors due to rounding

10.3 Farm type

Question asked:

Q21. Is your farm an irrigation farm or dryland?

Table 24

FARM TYPE	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Irrigation	51%	25%	94%	12%	67%
Dryland	49%	75%	6%	88%	33%

10.4 Calving pattern

Question asked:

Q22. Can you tell me which of the following best describes your herd's current calving pattern? Seasonal calving, where your cows calve in one distinct group, spread over five months or less; Split or batch calving, where your cows calve in two or three distinct groups; year round calving where your cows calve over 10 months or more or some other?

Table 25

CALVING PATTERN	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Seasonal	68%	60%	67%	72%	77%
Split	26%	35%	26%	20%	23%
Year round	6%	5%	8%	8%	0%

Errors due to rounding

10.5 Length of time in industry

Question asked:

Q28. How many years have you been a dairy farmer?

Table 26

LENGTH OF TIME IN INDUSTRY	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
5 years or less	3%	4%	6%	0%	3%
6 – 10 years	11%	16%	11%	2%	17%
11 – 20 years	24%	24%	20%	30%	27%
Over 20 years	61%	56%	64%	68%	53%

Errors due to rounding

10.6 Future intentions

Question asked:

Q29. Do you still expect to be in dairying in five years time?

Table 27

FUTURE INTENTIONS	BASE: ALL RESPONDENTS				
	TOTAL (n = 201)	GIPPSDAIRY (n = 55)	MURRAY DAIRY (n = 66)	WESTVIC (n = 50)	TAS (n = 30)
Definitely still dairying	42%	45%	32%	42%	57%
Probably still dairying	27%	22%	27%	34%	27%
NET: Still dairying	69%	67%	59%	76%	83%
Probably not still dairying	12%	13%	18%	8%	3%
Definitely not still dairying	14%	18%	15%	12%	7%
NET: Not dairying	26%	31%	33%	20%	10%
Don't know	5%	2%	8%	4%	7%

Errors due to rounding

Appendix 1:

Dairy farmer group topic guideline

Cross-breed Survey

Group discussion topic guide

Introduction:

I'm Pam Watson from Down To Earth Research.

Thank you for coming along to the group today. As you know we are here to discuss and compare your experiences with various aspects relating to Holsteins and cross-bred cows, such as fertility, health, longevity and component percentages.

This group is part of a wider project which involves in-depth studies of 17 dairy herds, two other group discussions and a series of telephone interviews.

The information you provide today will help Mike to evaluate these aspects within breeds and compare findings with studies conducted in New Zealand and the US. Mike's findings will be made public, so you will be able to see the results of the survey.

Explain protocol for participating in discussion (everyone entitled to their point of view, allow everyone to put forward their point of view, discuss with each other rather than simply talk to facilitator)

Group introductions:

To begin with, so that we all have an understanding of each other's farming enterprise, could you please introduce yourself and tell everyone whether you have a herd of Holstein cows or whether you have a percentage of cross-breeds, how many cows are normally in your milking herd, your calving pattern, whether your system is predominantly pasture based or whether you supplementary feed and whether your farm is dryland or irrigation.

10 mins

1. Perceived advantages and disadvantages of breeds

30 mins

Determine reasons for current breed of herd:

What are the main reasons for having the breed of cows you do?

Explore perceived advantages and disadvantages:

What have you found to be the advantages of the breed?

Explore for:

- fertility
- health
- longevity
- ease of calving
- production

And what are the disadvantages of the breed?

Explore for:

- fertility
- health
- longevity
- ease of calving
- production

Determine whether those with Holstein herds have had experience of cross-breeds:

Have you ever had cross-breeds in your herd?

Explore barriers to having cross-breeds among those who have had them in their herd in the past, but have given up on them:

Can you tell me why you no longer have cross-breeds in your herd?

Probe for:

- breeding program
- herd uniformity
- production
- breed preference (why?)

Explore drivers to keeping cross-breeds in the herd among those who have them:

What are the qualities of cross-breeds that influenced you to continue with them?

2. Information sources

15 mins

Determine sources of information and identify preferred sources:

Have you actively sought information in the past about the type of breed which would be right for your enterprise?

Where did you look or go for breed information?

Was it easy or difficult to source useful information?

Was any of the information you found more valuable or helpful? Where did it come from?

Why was that?

Was there anything you needed to know that you just couldn't find? What?

3. Attitudes towards technical information

30 mins

I want you to have a look at some technical information which Mike has put together.

Present Mike's charts and graphs, but offer no explanation.

Determine attitudes towards cross-breed technical information:

What are your first reactions to the information in the charts and graphs?

How have you interpreted that information?

Probe for improvement in performance linked to:

- productivity
- return per cow or herd
- liveweight

Do you believe the information? Why? Why not?

If you received that information from the source you mentioned before as being the most valuable and helpful, would you believe it?

Would you need any additional information? What? Why not?

4. Implementing cross-breeding into system.

30 mins

Determine aspects influencing adaptation of cross-breeding into system:

Ask cross-breeders to describe their experiences of utilising cross-breeding into their system:

Can you just describe for us how you have adapted cross-breeding to your system and give us an idea of the ease or difficulty you experienced?

Determine non cross-breeders reactions to the above:

Could you see any other difficulties in adapting cross-breeding to your own system? What are they?

Determine level of interest in adapting a cross-breed system:

After all you've seen and herd in this group, what are your reactions to cross-breeds?

Would you consider including cross-breeds in your herd in future? Why? Why not?

What sort of information would you need to help you make that decision?

Where would you prefer to get that information from? What?

Appendix 2:
CATI questionnaire

Down To Earth Research

University of Melbourne X-Breed Survey

QUOTAS: (n = 200)

GIPPSDAIRY ----- 55 WESTVIC DAIRY ----- 50
MURRAY DAIRY ----- 65 TAS ----- 30

INTRODUCTION:

Good morning / afternoon / evening, my name is (NAME) from Down To Earth Research, could I please speak to (NAME ON LIST).

Re-introduce if necessary

We've been commissioned by the University of Melbourne to speak to dairy farmers on issues relating to dairy cow breeds and their experiences of the herds' fertility, health and component percentages. The main aim of this project is to obtain information which will assist research investment decisions in future which will ultimately benefit the industry.

Are you the person on the farm who is responsible for decisions relating to the composition and breed of the milking herd?

If no, locate correct person and re-introduce if necessary

Would you be able to give me 10 minutes of your time to answer some questions and help the University of Melbourne with this project?

Arrange call back time if requested.

Q1 Firstly, how many cows are normally in your milking herd?

cows

(close if less than 100)

Q2 And what is the main breed of your milking herd?

HOLSTEIN / FRIESIAN -----	1	GO TO Q3
JERSEY -----	2	GO TO Q3
FRIESIAN / JERSEY CROSS ---	3	GO TO Q4
AUSSIE RED -----	4	TERMINATE
BROWN SWISS -----	5	TERMINATE
GUERNSEY -----	6	TERMINATE
AYRSHIRE -----	7	TERMINATE
OTHER (specify) -----	8	TERMINATE

IF MAIN BREED IS HOLSTEIN/FRIESIAN OR JERSEY (Q2 = 1 OR 2), ASK:

Q3 Do you have any Friesian-Jersey cross cows in your milking herd?

YES -----	1	CONTINUE
NO -----	2	GO TO Q5

Q4 How many cross bred cows do you have?

x-breds

IF NO X-BREDS CURRENTLY IN HERD (Q3 = 2), ASK:

Q5 Have you had Friesian-Jersey cross-bred cows in your milking herd in the past?

YES -----	1
NO -----	2

IF HAD EXPERIENCE OF X-BREDS (Q3 = 1 or Q5 = 1), ASK:

Q6	Are your cross-bred cows sired by ...	AI -----	1
	<i>read out</i>	BULL WITH HEIFER -----	2
		BULL WITH HERD -----	3

ASK ALL:

I'm going to ask some questions about certain breeds of dairy cows and even if you have little or no experience in milking these breeds, I'd like you to tell me your perceptions

Q7	Firstly, in your opinion, what are the advantages of the Holstein Friesian breed?	HIGH MILK PRODUCTION -----	1
	<i>Do not prompt</i>	MORE PROFITABLE -----	2
	<i>Probe: Any other advantages?</i>	GOOD TEMPERAMENT / PLACID -----	3
		SIZE / BIG -----	4
		WORTH MORE MONEY TO SELL -----	5
		FEW HEALTH PROBLEMS -----	6
		LONGEVITY / LAST A LONG TIME -----	7
		GOOD SEMEN STOCK AVAILABLE -----	8
		EXPORT MARKET POTENTIAL -----	9
		OTHER (<i>Specify</i>) -----	10
		NONE -----	11

Q8	And in your opinion, what are the disadvantages of the Holstein Friesian breed?	FERTILITY / DIFFICULT TO GET IN CALF ----	1
	<i>Do not prompt</i>	CALVING DIFFICULTIES -----	2
	<i>Probe: Any other disadvantages?</i>	RETAINED MEMBRANES -----	3
		SIZE / TOO BIG -----	4
		DAMAGE PADDOCKS -----	5
		POOR LONGEVITY -----	6
		POOR HEALTH -----	7
		LAMENESS -----	8
		LOW PROPORTION OF COMPONENTS -----	9
		LESS PROFITABLE -----	10
		COSTLY TO FEED -----	11
		OTHER (<i>Specify</i>) -----	12
		NONE -----	13

Q9	Also in your opinion, what are the advantages of Friesian-Jersey cross-bred cows?	HIGH PROPORTION OF COMPONENTS -----	1
	<i>Do not prompt</i>	MORE PROFITABLE -----	2
	<i>Probe: Any other advantages?</i>	FERTILITY / EASY TO GET IN CALF -----	3
		EASY CALVING -----	4
		SIZE / NOT TOO BIG -----	5
		FEW HEALTH PROBLEMS -----	6
		LONGEVITY / LAST A LONG TIME -----	7
		HIGHER STOCKING RATE -----	8
		LESS PASTURE DAMAGE -----	9
		LESS LAMENESS -----	10
		OTHER (<i>Specify</i>) -----	11
		NONE -----	12

Q10	And what do you believe are the disadvantages of Friesian-Jersey cross-bred cows?	LOWER MILK PRODUCTION -----	1
	<i>Do not prompt</i>	LESS PROFITABLE -----	2
	<i>Probe: Any other disadvantages?</i>	SIZE / TOO SMALL -----	3
		POOR HEALTH -----	4
		TEMPERAMENT / DIFFICULT TO MANAGE --	5
		WORTH LESS TO SELL -----	6
		NO / LIMITED EXPORT MARKET -----	7
		LACK OF JERSEY SEMEN AVAILABLE -----	8
		DON'T KNOW WHAT THE NEXT STEP IS -----	9
		DON'T LIKE THE LOOK OF THEM -----	11
		CREATE UNEVENNESS IN THE HERD -----	12
		OTHER (<i>Specify</i>) -----	13
		NONE -----	14

Q11 Do you think that increasing the proportion of cross-bred cows in your herd would have a positive or negative effect on the following:

	POSITIVE EFFECT	NEGATIVE EFFECT	NEITHER POSITIVE OR NEGATIVE	BOTH	DON'T KNOW
1. OVERALL HEALTH OF THE HERD -----	1	2	3	4	5
2. OVERALL PRODUCTION OF THE HERD -----	1	2	3	4	5
3. PROFITABILITY OF THE HERD -----	1	2	3	4	5
4. CONCEPTION RATE OF THE HERD -----	1	2	3	4	5
5. EASE OF HERD MANAGEMENT -----	1	2	3	4	5
6. EASE OF FARM MANAGEMENT -----	1	2	3	4	5
7. NUMBER OF COWS CULLED -----	1	2	3	4	5
8. DAIRY FARMER LIFESTYLE -----	1	2	3	4	5
9. PHYSICAL ASPECTS OF THE FARM, LIKE PUGGING OF PADDOCKS, EROSION, ETC. -----	1	2	3	4	5

ASK ALL:

Q12 If the dairy industry was no longer able to induce cows due to animal welfare limitations, would you consider introducing or increasing the number of cross-bred cows in your milking herd?	DEFINITELY YES -----	1
	PROBABLY YES -----	2
	PROBABLY NO -----	3
	DEFINITELY NO -----	4
	DON'T INDUCE -----	5
	DON'T KNOW -----	6

ASK ALL:

Q13 Over the past few years have you changed your herd composition in any of the following ways?

INCREASED THE PROPORTION OF JERSEY COWS -----	1	CONTINUE
DECREASED THE PROPORTION OF JERSEY COWS -----	2	CONTINUE
INCREASED THE PROPORTION OF FRIESIAN-JERSEY CROSS BRED COWS ----	3	CONTINUE
DECREASED THE PROPORTION OF FRIESIAN-JERSEY CROSS BRED COWS ----	4	CONTINUE
NONE OF THE ABOVE -----	5	GO TO Q15

Q14 Why have you (FROM Q13)?

.....
 Any other reasons?

IF NO CHANGES TO HERD COMPOSITION (Q13 = 5), ASK:

Q15 Are you planning to change your herd composition in any of the following ways in the next 5 years?

INCREASE THE PROPORTION OF JERSEY COWS -----	1
DECREASE THE PROPORTION OF JERSEY COWS -----	2
INCREASE THE PROPORTION OF FRIESIAN-JERSEY CROSS BRED COWS -----	3
DECREASE THE PROPORTION OF FRIESIAN-JERSEY CROSS BRED COWS -----	4
NONE OF THE ABOVE -----	5

Q16 Why are you planning to (FROM Q15)?

.....
 Any other reasons?

IF RESPONDENT HAS MORE THAN 20% CROSS BRED COWS IN HERD (Q4/Q1 > 20%), ASK:

Q17 What sort of information do you think dairy farmers need to know to be able to make an informed decision on whether to change the herd composition in relation to the number of cross-bred cows in the herd?

.....
Anything else?

IF RESPONDENT HAS LESS THAN 20% CROSS BRED COWS IN THE HERD (Q4/Q1 < 20%), ASK:

Q18 What additional information do you need to know to be able to make an informed decision on whether to change the herd composition in relation to the number of cross-bred cows in the herd?

.....
Anything else?

Q19 How interested would you be in learning more about economic comparisons between straight Holstein-Friesian herds and cross-bred herds? Would you say you would be ... *read out*

	VERY INTERESTED -----	1
	FAIRLY INTERESTED -----	2
	NOT TOO INTERESTED -----	3
	NOT INTERESTED AT ALL -----	4

I JUST HAVE A FEW MORE QUESTIONS TO ASK ABOUT YOUR FARMING SYSTEM

Q20 How many hectares of land do you use for farming?

	ha
--	----

Q21 Is your farm an irrigation farm or dry land?

	IRRIGATION -----	1
	DRYLAND -----	2

Q22 Can you tell me which of the following best describes your herd's current calving pattern? *Read out.*

- 1. SEASONAL CALVING, WHERE YOUR COWS CALVE IN ONE DISTINCT GROUP, SPREAD OVER FIVE MONTHS OR LESS ----- 1
- 2. SPLIT OR BATCH CALVING, WHERE YOUR COWS CALVE IN TWO OR THREE DISTINCT GROUPS ----- 2
- 3. YEAR ROUND CALVING, WHERE YOUR COWS CALVE OVER 10 MONTHS OR MORE ----- 3
- 4. OTHER (Specify) ----- 4

Q23 In an average rainfall season, do you normally feed your cows any grain or pellets?

	YES -----	1	CONTINUE
	NO -----	2	GO TO Q25

Q24 Would you say you normally feed ... *read out*

- LESS THAN ½ A TONNE OF GRAIN OR PELLETS PER COW PER YEAR ----- 1
- BETWEEN ½ AND 1½ TONNES OF GRAIN OR PELLETS PER COW PER YEAR ----- 2
- MORE THAN 1½ TONNES OF GRAIN OR PELLETS PER COW PER YEAR ----- 3

Q25 Do you herd test? YES ----- 1
 NO ----- 2

AND NOW JUST A COUPLE OF QUESTIONS ABOUT YOU, AND THEN WE'RE FINISHED.

Q26 Gender (record, do not ask) MALE ----- 1
 FEMALE ----- 2

Q27 What age category do you fit into? 30 OR YOUNGER ----- 1
 31 – 39 YEARS ----- 2
 40 – 49 YEARS ----- 3
 50 – 59 YEARS ----- 4
 60+ YEARS ----- 5

Q28 How many years have you been a dairy farmer? 5 YEARS OR LESS ----- 1
 6 – 10 YEARS ----- 2
 11 – 20 YEARS ----- 3
 OVER 20 YEARS ----- 4

Q29 Do you expect to still be in dairying in five years time? DEFINITELY YES ----- 1
 PROBABLY YES ----- 2
 PROBABLY NOT ----- 3
 DEFINITELY NOT ----- 4
 DON'T KNOW ----- 5

Q30 What is your postcode there? _____

That's all the questions I have to ask you.

Thank you so much for your assistance. The information you've given me will be pooled with information received from other dairy farmers and will help the University of Melbourne's research into your experiences with herd breeds.