

L.S. van Bijnen*

Validation of the preferences of different groups of dairy farmers regarding veterinary herd health management programs on Dutch dairy farms.

Supervisors: H. Hogeveen & M. Derks



* Solis-id: 3514889.
* Batch: DGK L 2015 jan nr. 1.

Utrecht University
Faculty of Veterinary Medicine
Department of Farm Animal Health
Yalelaan 7
3584 CL Utrecht
The Netherlands.

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Abstract

In the future veterinary herd health management (VHHM) is becoming a more and more important part to secure a responsible dairy production. However, there is room for improvement. By giving VHHM a more fixed structure and by following prewritten steps like goal setting, planning, execution and evaluation, the veterinarian and other advisors are able to tailor VHHM to the farm. This emphasizes that the execution of VHHM is changing over the years. If you can divide dairy farmers into different groups based on their interests, veterinarians are better able to target the topics that this specific farmer is interested in. This was done in a previous study.

The purpose of this study is to make a cross validation of the previous study and the consequent derived (group) results. Also, we tried to create some depth and discover the reasons why farmers do or do not want to discuss a certain topic.

For this study, which is a cross-validation of the previous study, nineteen randomly selected farmers were approached and were personally interviewed with an open-question interview. This interview was divided into three parts; the general data, general questions about farm(ers) data and questions about VHHM.

Based on the interviews, we could draw three main conclusions:

The list of topics (claw health, nutrition, young stock rearing, fertility management, udder health, housing and analysis of production numbers and milk quality), which was studied before, is nowadays still useful, but can be complemented with topics that are recent developments in the sector. Obtaining the relative importance of different topics is not very useful in practice.

Because nineteen interviewed farmers all gave a different definition of VHHM, the second thing that can be concluded is that there is not a clear definition of VHHM among farmers. To avoid incomprehension and discontent among farmers and their advisors, it is important to be aware of each other's understandings about VHHM.

And the last conclusion is; personal characteristics from both farmer and advisor, can prevent VHHM from being fully utilized if there is a mismatch between those two. This could result in dissatisfied farmers which can possibly lead to, for example, a reduced frequency of asking VHHM and executing it.

Overall, the conclusion from the cross-validation is that the results from the previous study are probably not very useful in practice. Because the method which was used, the closed-questioned survey, came with a certain limitation and so could not take into account the personal characteristics of the farmers and was not able to create depth in the answers, thus being unable to trace the underlying reasons for the farmers' answers. In this study, with these results, it is not possible to make a useful farmers profile. The only thing that certainly can be concluded is that VHHM is very personal, both for farmers and advisors. Therefore, good collaboration and communication between these two is the only way to perform VHHM at the most useful way.

Samenvatting

In de toekomst is bedrijfsbegeleiding een steeds belangrijker onderdeel van de melkveehouderij. Echter, er is ruimte voor verbetering. Door bedrijfsbegeleiding een vaste structuur te geven en daarbij voorgeschreven stappen te volgen zoals het stellen van doelen, plannen, het uitvoeren van het gegeven advies en een evaluatie, zijn dierenartsen en andere adviseurs in staat om bedrijfsbegeleiding meer passend te maken aan de wensen van de huidige melkveehouderij.

Dit benadrukt dat de uitvoering van bedrijfsbegeleiding door de jaren heen steeds blijft evalueren. Als we in staat zijn om veehouders te verdelen op basis van hun interesses door het maken van verschillende veehouderprofielen, zijn dierenartsen en adviseurs beter in staat om zich te richten op de onderwerpen waarvoor een specifieke boer zich interesseert. Dit werd gedaan in een eerdere studie door K. Haring.

Voor deze huidige studie, welke een cross-validatie is van de eerder beschreven studie, zijn negentien willekeurig geselecteerde boeren benaderd en persoonlijk geïnterviewd. Dit interview bevatte open vragen en was grofweg verdeeld in drie delen; de algemene gegevens, algemene vragen over de boeren en hun boerderij en vragen over bedrijfsbegeleiding en hoe zij dit ervaren.

Op basis hiervan kunnen er drie belangrijke conclusies worden getrokken:

De lijst van onderwerpen (klauwgezondheid, voeding, jongvee opfok, vruchtbaarheid, melkwaliteit en productiemanagement, uiergezondheid en huisvesting), welke in de literatuur al eerder werd onderzocht, is vandaag de dag nog steeds nuttig, maar kan worden aangevuld met onderwerpen over recente ontwikkelingen in de sector. Het indelen van de verschillende onderwerpen op een lijst betreft prioriteit van de veehouder, zoals gedaan werd in de voorgaande studie, is waarschijnlijk niet bruikbaar in de praktijk. Omdat de negentien geïnterviewde melkveehouders allemaal een andere definitie van bedrijfsbegeleiding gaven, is het duidelijk dat er geen vaste definitie van en eenduidigheid over bedrijfsbegeleiding bestaat. Om onbegrip en ontevredenheid onder de boeren en hun adviseurs te voorkomen, is het belangrijk om bewust te zijn van elkaars interpretatie en invulling van bedrijfsbegeleiding.

De derde conclusie die getrokken kan worden is dat de persoonlijke kenmerken van zowel de boer en adviseur kunnen voorkomen dat bedrijfsbegeleiding volledig wordt benut wanneer deze twee persoonlijkheden niet bij elkaar passen. Dit kan leiden tot ontevreden veehouders, wat op zijn beurt weer kan leiden tot, bijvoorbeeld, het minder frequent vragen van bedrijfsbegeleiding of het gegeven advies minder vaak opvolgen.

Al met al kan ik concluderen dat de resultaten van de vorige studie waarschijnlijk niet erg bruikbaar zullen zijn in de praktijk. Voornamelijk omdat de methode die werd gebruikt, de enquête met gesloten vragen, een zekere beperking met zich meebracht en er dus geen rekening kon worden gehouden met de persoonlijkheden van de veehouders. Daarnaast was men niet in staat om diepte te creëren in antwoorden en hiermee de onderliggende redenen voor deze antwoorden te ontdekken.

In deze studie was het met deze resultaten niet mogelijk om een bruikbaar veehouderprofiel te schetsen, maar er kan zeker worden geconcludeerd dat bedrijfsbegeleiding erg persoonlijk is, voor zowel de boeren als de adviseurs, en dat goede samenwerking en communicatie nodig is om bedrijfsbegeleiding ten volle te kunnen benutten.

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Cover photo; Cow 'Grietje 8113', photocredits and owner R. van Bodengraven.

1. Introduction

In 2013, Van Bijnen did a literature study and drew the following conclusion;

“In the future veterinary herd health management (VHHM) is becoming a more and more important part of dairy farming. However, there is room for improvement. By giving VHHM a more fixed structure and by following prewritten steps like goal setting, planning, execution and evaluation, the veterinarian is able to tailor VHHM to the farm. To achieve this, the bovine practitioners have to make some changes. They have to make some investments in new knowledge and veterinary skills (regarding herd health problems), but also in marketing methods, business administration and other economic parameter evaluation methods which can be useful on a farm. Last, but not least, veterinarians have to invest time, effort and empathy into learning some communication skills, relation management and conflict control. By doing this they show interest in that specific dairy farm and are able to learn about the actual goals of the farmer. While the vets think that the tariff of VHHM is a reason for farmers to participate or to not participate, the reason given by farmers themselves is the quality of the given advice.

A good relationship results in a satisfied farmer and has a positive effect on solving the problems discussed during VHHM. When discussed topics show improvement, this results in a positive economic effect on the farm. Through these changes the veterinarians are able to extend the advantages of VHHM and to reduce the disadvantages as much as possible, and will therefore also see the benefits of selling knowledge themselves. Furthermore, an economic substantiation for the topics discussed during VHHM is desirable. That's the only way to determine which topic on a specific farm is the most profitable one to target. Currently the focus lies on fertility problems, which is not always correct from an economic point of view. In the future veterinarians should be able to convince the farmer, supported by farm specific calculations, that it's wise to shift their focus and to also discuss topics like udder health and young stock rearing.” (Bijnen, 2013)

The literature study emphasizes that the work of a veterinarian, especially the execution of VHHM, is changing over the years. If you can divide dairy farmers into different groups based on their interests, veterinarians are better able to target the topics that this specific farmer is interested in. For instance: when we are able to designate different groups of farmers, veterinarians can respond by discussing topics in which these groups of dairy farmers are most interested during VHHM. If they can achieve this, the chances that their recommendations are followed by the farmers are improved and the greatest economic return for the farmer can be achieved. In short: knowing which farmer prefers which topics of VHHM makes it easier for a veterinarian to approach farmers in the right way.

The purpose of the current study is to make a (cross) validation of a previous study done by K. Haring in 2015 and the consequently derived (group) results. Do the various dairy farmers meet the criteria of the groups? And do they recognize themselves in the group results (as described above)? Also, we tried to create some depth. Why do or do not farmers want to discuss topics? Is it a lack of time, money or interest?

2. The study

2.1 Background of the study

This study is the last part of a larger study, consisting of three parts. In the first part, they looked at which factors could affect whether farmers participate in VHHM or not. The second study showed which preferences farmers may have for VHHM/on-farm counseling, using a conjoint analysis. Finally, in the third part of this study, which is described here, the results will be linked back to the farmers. Farmers who fit in a certain farmer-profile were asked for their preference in terms of VHHM, and this was compared with the results of the previously done conjoint analysis.

The previous study, the second part of the large study, has been performed by another student (K. Haring). She was able to differentiate three groups of dairy farmers. Fifty-six surveys were processed into a cluster analysis to achieve this result.

The close-questioned surveys contained 13 questions that asked the farmers about themselves (such as their age and their participation in study groups) and about their farm (the number of cows, whether there was a successor to the farm, somatic cell counts, what kind of stable they had and whether they used a milking robot). Also, they asked whether farmers outsourced some kind of work on their farm (such as work or advice from an external expert like a hoof trimmer or an artificial insemination company), their current participation in VHHM, and their interests in 7 topics regarding veterinary herd health management programs (claw health, nutrition, young stock rearing, fertility management, udder health, housing and analysis of production numbers and milk quality).

After performing a cluster analysis on the answers given by the dairy farmers in the survey described above, a differentiation within three groups of farmers was made. The most discriminating answers, for differentiating in groups, were the ones on farm size/ number of cows and the probability of a successor to the farm.

The three groups formed where 'small farms' (with a small number of cows, in this study a mean of 66 cows), 'large farms' (with a large number of cows, a mean of 250 cows) and 'medium farms' (in this study a mean of 110 cows). They were named, in order, group 1 to 3.

The groups were relevant to the way different groups of farmers applied VHHM;
Veterinary herd health management programs

- Large farms are using VHHM given by the veterinarian the least.
- This same group of large farmers are the least pleased by VHHM the veterinarian offered them nowadays.

Advice from the artificial insemination company

- Small farms do not often use external experts to perform artificial insemination.
- Medium farms regularly use external experts for artificial insemination and use the given advice.
- Large farms regularly use external experts for artificial insemination, but do not always follow up the advice given by the artificial insemination company.

VHHM and advice from the hoof trimmer

- Small farms do not use it.
- Medium and large farms had some work done on their farm by an external hoof trimmer and gain some advice.
- Especially on medium farms the hoof trimmer came on a regular basis.

Somatic cell counts

- The average somatic cell counts are more often high on large farms.
- The farms with the highest somatic cell counts had a small number of cows, so there was more spreading within the group of small farms.

Production numbers and milk quality

- On large farms, cows were more often discarded because of a reduced milk production.

View of a successor for their farm

- Large and medium farms had a successor to the farm more frequently.

Participation on study groups

- Large and medium farms participated more in study groups.

On their interest in the 7 different topics of veterinary herd health management programs, the answers on the surveys gave the following weighed results:

- *Most important topic* fertility management
udder health
analysis of production numbers and milk quality
young stock rearing
nutrition
claw health
- *Least important topic* housing

This order was made for all three of the farmer groups, but the level of importance assigned to the topics differed between groups.

	Group 1	Group 2	Group 3
Fertility management	1,24229	0,91105	1,40185
Udder health management	1,09550	1,06061	1,13661
Nutritional management	0,14808	-0,02093	0,28306
Claw management	0,16568	0,23604	0,25200
Young stock management	0,55522	0,09410	0,67256
Housing management	-0,17158	0,01981	0,06066
Milk quality and production management	0,62395	0,50237	0,75973

Table 1: Importance of topics for the three groups of farmers. A higher number means more important, and a negative number means that it is an important topic NOT to discuss (Haring, 2015)

For nearly all the topics mentioned above, the interest of discussing them with their veterinarian during VHHM was the highest on the 'medium farms'. After that, the farms with a small number of cows were most interested. The least interested farms were the 'large farms'. The reason for this difference was not mentioned so clear.

However, reasons that can be given are; 'small' farmers do not have that often a successor on the farm so they do not have a big future vision, and that's why they are less interested in VHHM from their vet. The 'large' famers more often use help from external companies, like the artificial insemination company and the hoof trimmer. They gain also a lot of different external advice from all the different areas, and that's why they are less interested in VHHM from their vet.

2.2 Purpose of the study

The purpose of the current study is to make a cross validation of the previous study and the consequent derived (group) results. Do the various dairy farmers meet the criteria of the groups? And do they recognize themselves in de group results (as described above)? Also, we try to create some depth. Why do or do not farmers want to discuss topics? Is it a lack of time, money or interest?

3. Material and Methods

3.1 Study design

Because in the previous study the reasons why the farmers did or did not have interest in the different topics of VHHM were not investigated, a (cross) validation was done by using a, mostly open-question, interview instead of a closed-questioned survey. The reason why they prefer to discuss certain topics can be a crucial point and can clarify why the groups can or cannot be validated.

The interviews were all conducted personally. Therefore, the randomly selected farmers have all been contacted over the phone to explain my study and to ask if I could make an appointment to come to their farm and conduct the interview. They also received an email with an introduction letter and confirmed information of the meeting. The email included an attachment containing the questions that would be asked during the interview. It was clearly stated that they did not have to prepare for the interview. After conducting the interviews, the answers were combined into the 3 previously defined groups: 'large', 'small' and 'medium' farmers. The answers of the groups were assessed on whether they match the expected answers (so match the answers given by the previous study). This gave us the chance to judge whether the groups found in the cluster analysis and their preferences were recognized by farmers in real life, and thus whether the outcomes of the previous study are valid to use in practice. Also, it provides a unique opportunity to detect reasons why farmers do or do not make use of VHHM.

3.2 Data collection

3.2.1 Interview

The questions were roughly similar to the questions in the previous study, because this study is a validation of preceding answers. However, the method used (interview, with mostly open questions) creates room for more in-depth analysis, by asking for reasons behind the answers.

The interview was divided into three parts;

1. The general data, such as name, address and the veterinary practice they were connected to.
2. The general questions, such as farmers characteristics (for example their age and if they were participating in a study club) and farm characteristics (for example the number of cows).
3. Questions about veterinary herd health management programs (VHHM), such as their definition of VHHM, their participation in VHHM and from which persons or parties they got advice about the previously mentioned topics.

Additionally, certain topics were discussed such as the advantages and disadvantages of VHHM, the different tariffs that were charged for the VHHM advice, whether they got feedback about the previously given advice and whether they were visited by (and so got the advice from) the same delegate of the different parties every time.

The list of questions which were asked during the interview is given in Appendix 1.

3.2.2 Participants

Farmers were contacted through personal contacts and a list of participating farmers in a purchasing organization, an agrarian collective. The list contained names and addresses from about 200 affiliated agrarians and farmers, scattered through the south of the Netherlands, Brabant, mostly nearby 's-Hertogenbosch and Breda. Farmers' names were randomly selected from the list and they were approached by phone. I explained my study and asked them if they were dairy farmers. After that, I asked if I could make an appointment to come over to their farm and conduct the interview. Nineteen farmers were willing to make an appointment.

After making the appointment they also received an email with an introduction letter and the confirmed meeting. The email included an attachment containing the questions that would be asked during the interview (the attachment is enclosed in the appendix 1 and figure 3, at the end of this report). It was clearly stated that they did not have to prepare for the interview.

Because all data were directly processed after conduction the interview (further explained in paragraph 3.3), the answers given by the farmers were compared. After conducting nineteen interviews the answers were very similar and the last farmers which were interviewed did not add new insights or statements. Because this is a qualitative study, this is a way to determine the size of the research group (Baarda, Goede, & Teunissen, 2009). So, after nineteen interviews, no new information was obtained, and no new interviews were scheduled.

3.3 Data analysis

Directly after conducting every interview the results were processed in a spreadsheet (Excel software for Office, version 2007, Microsoft) which contained all the farmers' names vertically and all of the asked questions horizontally. An example of this is shown below.

			1.	2.						3.	
		DAP	Leeftijd	Aantal koeien		Aantal melkkoeien		Aantal droogstaande	Jongveeopfok	Aantal jongvee	Aantal per FTE
Veehouders	A	X	48	70 + 60 stuks jongvee	130	60	60	10	Ja	60 stuks	52 (totaal koeien 130/80 (totaal koeien 170/57 (totaal koeien 215/110 (totaal koeien 165/73 (totaal koeien 210/40 (totaal koeien 120/49 (totaal koeien 182/99 (totaal koeien 248/100 (totaal koeien 200/95 (totaal koeien 180/72 (totaal koeien 162/65 (totaal koeien 175/54 (totaal koeien 115/35 (totaal
	B	X	58	170	170	145	145	25	Nee	x	
	C	X	36	110 + 105 jongvee	215	96	96	14	Ja	105 stuks (gesloten	
	D	Y	45	105 + 60 jongvee	165	100	100	5	Ja	60 stuks	
	E	X	47	200-210	205	185-195	190	15	Nee	na paar weken naar opfok,	
	F	Z	47	74 + 46 stuks jongvee	120	67	67	7	Ja	46 stuks	
	G	Y	36	114 + 68 stuks jongvee	182	97	97	17	Ja	68 stuks	
	H	Y	52	133+ 115 jongvee	248	116	116	17	Ja	115 stuks	
	I	*	50	110 + 90 stuks jongvee	200	95	95	15	Ja	90 stuks	
	J	Y	54	90 + 90 stuks jongvee	180	80	80	10	Ja	90 stuks	
	K	Y	45	92 + 70 stuks jongvee	162	84	84	8	Ja	70 stuks	
	L	X	52	100 + 75 stuks jongvee	175	94	94	6	Ja	75 stuks	
	M	Z	57	65 + 50 stuks jongvee	125	56	56	9	Ja	50 stuks	

Figure 1: An example of the Excel-spreadsheet that was used to process the conducted interviews.

The first part of the analysis was to classify the farmers into the three previously defined groups: 'large', 'small' and 'medium' farmers. Therefore the same classification that had been used in the previous study was maintained. Each farmer was asked how many cows

4. Results

This chapter describes the most remarkable results of this study, as well as the study results which could be linked to the study of K. Haring, and so be useful to perform the cross-validation.

4.1 Data

As explained in 3.2.1 'Interview' the questions that were asked during the interview, were divided into three parts. First the general data, second the general questions about the farm(er) and third about veterinary herd health management (VHHM) and on-farm counseling. In describing the results the same order will be maintained.

As stated before; the questions of the interview were roughly similar from the questions in the previous study, since this study is a validation of preceding answers. Only the questions with striking difference or similarity are described in this chapter, all other answers can be found in the appendix.

	Average (of all 19 participating farmers)	Remarks
General data		
Veterinary practice	6 clients of practice 'X' 4 clients of practice 'Y' 6 clients of practice 'Z'	3 remaining farmers were client, at 3 different veterinary practices.
Conventional or robot milking	12 conventional milking 7 robot milking	

Table 2a: Summary of the answers given by all the 19 participating farmers during the (mostly) open questioned interview, divided into 4 parts. The 3 main parts of the interview; 'General data', 'Farm(ers) data' and 'Veterinary Herd Health Management', and the topics which were discussed during VHHM.

	Average (of all 19 participating farmers)	Remarks
Farm(ers) data		
Farmers age	46,8 years	
Farm size	Milking cows: 110,3 Total (cows and young stock): 191,2	
Workload	72,8 cows per FTE	108,1 hours of work per week average, range was 60 till 160 hours per week.
Successor	57,9% have a successor	Of this (11), 3 were certain, 8 have possibly a successor
Study groups	94,7% participated	10,6% participated in more study groups 37,1% participated in a study group for only dairy farmers

Table 2b: Summary of the answers given by all the 19 participating farmers during the (mostly) open questioned interview, divided into 4 parts. The 3 main parts of the interview; 'General data', 'Farm(ers) data' and 'Veterinary Herd Health Management', and the topics which were discussed during VHHM.

	Average (of all 19 participating farmers)	Remarks
VHHM		
Definition	All 19 participating farmers gave their own definition, but there were some common statements which were mentioned often.	<ul style="list-style-type: none"> • Periodical farm visit. • Assistance (help) or guidance (counseling). • Goal; improve farm performance. • Staying up-to-date. • Preventing farm blindness. • Besides advice, (veterinary) proceedings. • Preventive way of working. • Advisors take a look at the cattle and goes through keyfigures.
Current use of VHHM	100% currently use VHHM	
From which parties		<ul style="list-style-type: none"> • Veterinarian • Feed advisor • Delegate from the artificial insemination company • Alpuro and/or Nutrifeed
Same advisor	100% advice from the same person from a specific company	Farmers liked it, many benefits, only one disadvantage; risk of farm blindness of their advisor
Feedback	84,2% received feedback from their advisors	Remaining 15,8% who did not receive feedback did not mind
Duration	32 hours per year	
Satisfied about VHHM	68% satisfied	Remaining 32% (6 farmers) were partially satisfied
Tariff	Acceptable	<ul style="list-style-type: none"> • Tariffs of the veterinarian were the highest. • Tariff of the insemination company was fixed. • Opinions about the tariff of the feed advisor ranged.
Following up advice	76% follows up the advice	<ul style="list-style-type: none"> • Confidence in the advisors. • When you sought advice from advisors, it is more likely to execute it. • Stubborn farmer. • Farmers' wisdoms and experience. • The advice must be feasible, both practical and realistic. • Costs and benefits must be weighed against each other. • Commercial advice must be extra assessed. • Appropriate to the farm management. • Financial possibilities. • Having 'cold feet'. • Let the animals manage their own health, avoiding a (hasty) intervention.

Table 2c: Summary of the answers given by all the 19 participating farmers during the (mostly) open questioned interview, divided into 4 parts. The 3 main parts of the interview; 'General data', 'Farm(ers) data' and 'Veterinary Herd Health Management', and the topics which were discussed during VHHM.

	Average (of all 19 participating farmers)	Remarks
Topics		
Fertility management	Mostly discussed by farmers with their vet and/or the artificial insemination company	
Udder health	Mostly discussed by farmers with their vet and/or the feed advisor	5,3% (1 farmer) did not discuss this topic
Nutrition	Mostly discussed by farmers with their vet and/or the feed advisor	10,5% consulted Alpuro/Nutrifeed
Claw health	Mostly discussed by farmers with their vet and/or the feed advisor	15,8% (3 farmers) did not discuss this topic
Young stock rearing	Mostly discussed by farmers with their vet and/or the feed advisor	10,6% (2 farmers) did not discuss this topic
Housing	Mostly discussed by farmers with their vet and/or the feed advisor	47,4% (9 farmers) did not discuss this topic
Production numbers & milk quality	Mostly discussed by farmers with their vet and/or the feed advisor	15,8% (3 farmers) did not discuss this topic
Other topics	57,9% want to discuss other topic	Request was to discuss the national laws and regulation about manure

Table 2d: Summary of the answers given by all the 19 participating farmers during the (mostly) open questioned interview, divided into 4 parts. The 3 main parts of the interview; 'General data', 'Farm(ers) data' and 'Veterinary Herd Health Management', and the topics which were discussed during VHHM.

Because this is a 'summary' of the complete data, this report includes (cross-)references to the relevant points from the elaboration in the appendix, these can be found in the appendix number 2, under the header '8. Results (continued)' and it's paragraphs.

4.2 (Cross) Validation of the previous study

This summary of data was divided into different topics, which can be found below, to which farmers gave their opinion. In this part of the report, the things that were concluded due to the answers that were given by the farmers in the previous study are compared to the answers that were given by the farmers during the interviews for this study (of which the complete data were given in the appendix 2 '8.Results (continued)').

In paragraph 2.1 'Background of the study' contains the most remarkable results of the previous study done by K. Haring described (Haring, 2015). Here they are presented as statements written in italic and between quotation marks, followed by the results of this study.

4.2.1 Conventional or robot milking

"There is not a clear difference between farm size between farms who whether or not used a milking robot."

The farmers from the two large farms in this study did not use a milking robot, but almost half of the medium sized farms did, and one-third of the small farms did also use a robot to milk their cows. So, in total 7 of the 19 interviewed farmers milk their cows by using a milking robot, this is almost 37% (showed in table 2a and described in paragraph 8.1.2).

4.2.2 Age of the farmer

"The age of the farmers did not show a clear difference between the three farm size groups."

In this study there was a difference between the average age of the farmers in the different farm size groups (paragraph 8.2.1). The overall average of the interviewed farmers was 46,8 years (table 2b). The farmers of the small farms were the oldest in this study and with their average age of 52 years this was the only group above the average of all participants. Farmers who had a medium farm had an average age of 45 years and the two farmers with a large farm had an average age of 41,5 years.

4.2.3 Possibility of a successor for their farm

"Large and medium farms have a successor to the farm more frequently."

In this study, if we combine the answers 'yes' and 'possibly', circa half of the farmers from small and medium farms said they have a successor, and all farmers of large farms had. When only the answer 'Yes' was counted, which was given by one farmer of all farm sizes, large farms have the biggest chance of being pursued. Overall, 57,9% of the participating farmers says they have a successor (shown table 2b).

4.2.4 Participation on study group

"Farmers from large and medium farms participate more in study groups."

In this study, only one medium sized farm farmer did not participate in study groups, all other 18 interviewed farmers did, so 94,7%, shown in table 2b. Thus, 100% of the small and large farm farmers do participate. Because one of these large farm farmers does participate in more than one study group, we see that farmers from large farms participate the most in study groups.

4.2.5 Veterinary herd health management programs

"Large farms are using VHHM given by the veterinarian the least, and are the least pleased by VHHM the veterinarian offered them nowadays."

"Medium farm farmers were the most satisfied."

In this study this was difficult to determine based on the question from which parties the farmers received advice during VHHM, since, as described in 8.3.2.2, their answers were not always complete. But according to the answers given per topic of VHHM (8.3.3) it can be said that in this study it's almost the same. Farmers from large farms mostly received their advice from another advisor than their vet, and when they consulted their vet, this was in combination with the advice from another VHHM advisor most of the time. Of course this is different per topic, but this is the global trend. Six of the interviewed farmers said they were only partially satisfied (32%, as shown in table 2), 13 others said they were satisfied, this was 68% (fully elaborated in paragraph 8.3.4.1).

In contrast to the data collected by K. Haring, in this study all participating large farm farmers said they were satisfied. The least satisfied were the farmers from medium sized

farms, 64% of them were completely satisfied, the remaining 4 farmers (36%) said they were partially satisfied.

The reason for farmers for being satisfied were partially similar to the reasons that were given by the farmers for following up the advice given during VHHM which you can find below. The most mentioned reason was the 'click' they felt with the advisor, and the critical view on their cattle and management the advisors provided during VHHM.

4.2.6 Advice from the artificial insemination company

"Small farms do not often use external experts to perform artificial insemination."

"The medium farms regularly use external experts for artificial insemination and use the given advice."

"Large farms regularly use external experts for artificial insemination, but do not always follow up the advice given by the artificial insemination company."

In this study: The farmers were only asked if they follow up the advice given during VHHM, and not specifically by who this advice was given. Thus nothing can be concluded from that. However, after dividing the farmers into the three groups gave that the average percentage of farmers that obeyed the given advice from small farms was 72%, of medium farms 81% and farmers from large farms obeyed on an average percentage of 63%. So, in this study the medium farm farmers said they followed up the given advice more often than all the other farmers, which is the same outcome as was concluded from the previous study.

About getting advice from a delegate from the artificial insemination company (AIC) (and let them perform artificial insemination) the farmers in this study answered that they got advice about the topic fertility (paragraph 8.3.3.1) mostly from their vet, the feed advisor, the AIC or both veterinarian and AIC (table 2). To draw a conclusion about the advice given by the AIC, we combined the answers 'AIC', 'Both vet and AIC' and the answer 'both AIC and feed advisor' (which is not displayed in table 5). This tells us the farmers in this study were a bit different. Large farmers both got a combination of AIC and vet/feed advisor. Therefore they scored 100%.

In contrast to the previous study, the small farms got the next most advice, approximately 67%. Seven, out of eleven, medium farm farmers said they were getting advice from the delegate from the AIC (combined with or without the advice from their vet or their feed advisor) which is approximately 64%.

4.2.7 VHHM and advice from the hoof trimmer

"Small farms do not use advice from a hoof trimmer."

"Medium and large farms had some work done on their farm by an external hoof trimmer and gain some advice."

"Especially on medium farms the hoof trimmer came on a regular basis."

In this study the interviewees said the hoof trimmer only treated the cows and therefore is not part of the VHHM (further described in 8.3).

The hoof trimmer came on 3 of the total 19 farms. This were 2 medium sized ones and one large farm. On all farms this was on a regular basis and just like the previous study, the smaller farms do not use the external hoof trimmer, not for the advice nor their work.

4.2.8 Production numbers and milk quality

"On large farms, cows were more often discarded because of a reduced milk production."

In this study: During the interview this was discussed only because I asked the farmers if they discussed this topic during VHHM (8.3.3.7). Most of the time the farmers gained advice about this topic from their vet, the feed advisor and a combination of both. Most often they discussed this topic with their feed advisor. Both large farms used this strategy. Other than in the previous study, it was not for deciding if the cow was to be discarded or not but for optimizing the cows (milk)performance.

4.3 'Summary' of the most interesting results of this study

4.3.1 Veterinary practice

Because the study is mostly conducted in the same area of Brabant, almost all of the farmers were connected to the same veterinary practice. Because the practices have not given permission to be included in this study they hereby have fictitious names. Veterinary practice 'X' was an one-man practice and 6 of the participants were clients of him. Veterinary practice 'Y' is a large practice with more bovine veterinary practitioners, 4 of the farms were client. Veterinary practice 'Z' is another large practice, located on the other side of the area where the researched farms were located, 6 of them were client of this practice (table 2a). The remaining three farms were connected to three different veterinary practices.

4.3.2 Workload

The total amount of hours farmers worked on their farm, including hours of work that was done by other persons varied considerably, this is described in detail in paragraph 8.2.3. The least number of hours that was mentioned was 60 hours weekly (medium farm), the most was 160 hours weekly (large farm).

If we combined the amount of hours farmers work on their farm (plus the hours they outsourced work on their farm to others) and the total number of cows (milking cows and young stock) it's possible to calculate the workload, presented as a certain number of cows per FTE. The average number of cows (total) per FTE is 73 from all interviewed farmers (given in table 2b).

The workload can also be displayed for each group; the workload on small farms was 58 average, on a medium farm 81 and the average workload on a large farm is calculated as 74 cows per FTE. The highest workload is seen on medium sized farms. It is remarkable that there were only three farms who did not raise their young stock themselves, but their workload was comparable to the average of all the farmers.

4.3.3 Definition of VHHM

In this study the farmers gave their definition of Veterinary herd health management. Not one of their definitions was the same!

The approach is very diverse, but there are some statements mentioned often. (These statements were already given in short in table 2c, but below they are elaborated more.)

- The majority of the farmers named it as a periodical farm visit from advisors. Some of them added a specific time frame, like for example fortnightly or every six weeks.
- Another thing what was mentioned frequently, was that VHHM consisted of a sort of assistance (help) or guidance (counseling).
- Most of the farmers added some kind of goal into their definition. They wanted to improve or optimize their farm performance, or they wanted to be able to maintain the results they currently achieved. Thereby, VHHM had to contribute to the improvement of income and/or cost reduction on the farm. This is the same reason which were given in literature before. (Bijnen, 2013)
- Farmers use the VHHM for staying up-to-date. Keeping up with the latest developments and insights is important.
- External advisors provide a fresh perspective, a second opinion or a critical view. It helps them preventing farm blindness.
- Alongside advice, some farmers added specific (veterinary) proceedings; fertility checks, vaccinating, dehorning of calves.
- VHHM is seen as a preventive way of working.
- During VHHM the advisor takes a look at the cattle and goes through the key figures.

4.3.4 From which parties farmers received advice during VHHM

Actually, this question was asked the farmers twice. During the interview I asked the farmers 'From which different parties are you getting VHHM-advice?', described 4.3.2.2.1, and again in the question which is described in paragraph 4.3.3 'Topics'. It was remarkable to evaluate the farmers' answers, because they often mentioned only a part of the parties that visited their farm to perform VHHM in the first question. After asking the farmers to differentiate per topic, and so answer the question from which parties they received on-farm counseling a second time, they added some advisors that they had not mentioned the first time.

This happened frequently, which shows the farmers are not fully aware of the (number of) parties they get advice from.

Combined, farmers said to receive VHHM advice from their vet, a feed advisor, the delegate from the artificial insemination company, and sometimes they added an extra company 'Alpuro' and/or 'Nutrifeed' (which are specialized in calves nutrition) (table 2d).

4.3.5 Same advisor

This is described in detail in paragraph 8.3.2.2.2, and given in table 2c, all of the farmers said they got advice from the same person from a specific business every time.

The interviewed farmers identified both advantages and disadvantages of having the same advisor(s) performing on-farm counseling and provide them with advice.

Benefits they mentioned were (These were also mentioned by the farmers as a reason of being satisfied about VHHM.):

- Farmers spoke about the 'click' that farmers had to have with their advisor. This can be interpreted as a preference for a person or personality.
- A pleasant and suitable way of communicating, which may be a part of the answer which is given above. A smooth way of communication is an effect of a positive relationship.
- Farmers liked to have the ability to have personal contact.
- A result of having some personal contact is that this also allowed the advisor to have some extra possibility to provide farmers with feedback. This is appreciated by farmers because this shows involvement (further described in paragraph 8.3).
- External advisors got to know the farmer, the farm and the (current) farm management. This increased the opportunity to learn about the preferences of the farmer, and which advice is suitable. Advisors then could provide the farmer with a more tailor-made approach and advice. Obviously, this is affecting whether or not the farmer is satisfied about the given advice and whether the advice will be followed or not. For further details, see paragraph 8.3.4 'Satisfaction about VHHM' and 8.3.5 'Following up advice'.
- The external advisors are considered confidential.
- External advisors could provide fresh new insights.
- Having the same delegate for a longer period of time ensured that it is not only giving and getting advice, but there is a chance of generating a collaboration between the farmer and advisor. Requesting advice, getting it and executing it is complemented by the ability of discussing results of the given advice. Farmers indicate that this leads to increasing quality of the advice that is given in the future, resulting in farmers being more and more satisfied. In this way, better results can be achieved.

The disadvantage of having the same advisor is the risk to develop farm blindness or tunnel vision about the farm. Not for themselves, after all this is the reason (or at least one of the reasons) for consulting an external advisor, but from their advisors. However, it should be noted that farmers assumed and expected that this is only a small risk. Advisors visit more farms, have colleagues as a second opinion, receive refresher training and have learned to give appropriate and suitable advice. Besides, on most farms VHHM is given by more parties, so more delegates and every time new insights. This all reduces potential risks.

4.3.6 Feedback

In this study only 3 of the 19 participants answered they did not get feedback from their advisors about the previously given advice or about changes they made on the farm which were advised, this was 15,8% of all interviewed farmers as described in table 2c (and further defined in 8.3.2.2.3). But all three said they did not mind. This is a real contrast to the other farmers. Remarkably, all of the farmers which received some kind of feedback from their advisors said they really appreciated it.

4.3.7 Duration of getting VHHM

In this study the interviewed farmers were asked to estimate the duration of VHHM. Because the farmers struggled to name all their advisors, as described in paragraph 4.3.4 (and 8.3.2.3), it was even harder to define the amount of time they performed

VHHM. So the farmers guessed a total time of the duration of VHHM, which came to an average time of 32 hours per year for all 19 interviewees (shown in table 2c). A differentiation showed that only the farmers from small sized farms estimated a less number of hours, namely an average of 24 hours per year. Farmers from medium and large farms estimated a duration above this average, with 35 hours and 36 hours per year respectively.

4.3.8 *Discussing various topics during VHHM*

As described above farmers named the parties of which they received advice from and estimated the duration of a VHHM appointment.

During the interview farmers were also asked about their interests in seven topics regarding veterinary herd health management programs or on-farm counseling (claw health, nutrition, young stock rearing, fertility management, udder health, housing and analysis of production numbers and milk quality). (Haring, 2015) (Lievaart, Noordhuizen, den Daas, & Jorritsma, 1999) (Boer, 2008)

This question in the interview was organized by topic, and contained several questions per topic. They were asked whether the topic was discussed or not during the VHHM/on-farm counseling, by which advisor this particularly topic was discussed and what percentage of the total time of the VHHM/on-farm counseling discussing this particular topic took.

The most notable results arising from this question were:

- In the previous study the answers of the closed-questioned survey gave a weighed result and order of importance between the different topics, but this order was different between the three different farm size groups. (Haring, 2015)
However, in this study it was not possible to conclude a certain order to level of importance between the different topics. Farmers found it hard to estimate the time that was invested per topic.
- The topic fertility management:
The most remarkable result about this topic was the reason why farmers answered to have the delegate from the artificial insemination company, namely because the farmers said that delegates from the AIC have more expertise (paragraph 8.3.3.1). Notable, because farmers also mentioned that the work and advice given by the artificial insemination company was presented to them as a package deal with a fixed tariff, and is often offered at a more favorable price compared to the bovine practitioner (8.3.4.2).
Although the artificial insemination company (compared to the vet) charged less this was not the reason for consulting this company, the assumed expertise was. (At least, this is what they claim.)
- The topic udder health:
Udder health is, together with claw health, a topic of which some farmers said they only discuss it in case of problems on their farm of with their cattle.
This topic is mostly discussed by the veterinarian and/or the feed advisor (table 2d), but more with a vet than with the feed advisor (8.3.3.2).
- The topic nutrition:
Farmers answered they mostly wanted to discuss this topic with their veterinarian or feed advisor, but there were two farmers with a medium sized farm, which consulted an extra advisory company that is specialized in calves, and mostly calves nutrition (8.3.3.3). Remarkable is the fact that there were two more (medium farm) farmers who consulted this (extra) company, but they did not discuss this topic with them, although these companies specialized themselves in

calves and mostly calf nutrition. These farmers said they discussed the topic of young stock rearing with a delegate from this company.

Nutrition is just as often discussed with only the feed advisor as with the combination of feed advisor with the vet. Because there was only one farmer who answered he discussed nutrition only with his vet, we could conclude carefully that nutrition is not the topic farmers consider the most important to discuss with their vet during VHHM.

- The topic claw health:

Claw health was the second topic whereof some farmers said they only want to discuss it in case of problems. Also three of the interviewees answered they did not discuss it at all. All of the other farmers said they had only a brief conversation about claw health with their advisor, and only because claw diseases or (a fault in) the ration of the cows affected the milk production. This is the reason why this topic is only discussed with the veterinarian and the feed advisor, or both.

As said above; in this study the farmers who consulted a hoof trimmer, did this only for treating the cows, not for VHHM advice.

- The topic young stock rearing:

This topic was mostly discussed by farmers with their vet and/or feed advisor during VHHM.

- The topic housing:

The topic housing was mentioned as the topic which was chosen to be discussed the least during VHHM. Of all 19 questioned farmers, nine said they would not discuss housing, which is described in table 2d (and 8.3.3.6).

If farmers wanted to discuss this topic during VHHM, the estimated time was minimal.

- The topic production numbers and milk quality:

This topic was also mostly discussed by farmers with their vet and/or feed advisor during VHHM (table 2d and 8.3.3.7), but all the farmers who said they did discuss this topic, answered it was only a small part of the whole VHHM appointment.

- Other topics:

The farmers were asked if they want to discuss other topics, but most farmers mentioned only one topic; national laws and regulation about manure (table 2d and further explained in paragraph 8.3.3.8).

4.3.9 *Tariff*

Most farmers answered that the tariffs which the advisors charged were acceptable, but the tariffs that the bovine practitioners and veterinary practices applied were highest of all tariffs the several external advisors applied (shown in table 2c).

More remarkable were the farmers' opinions about the tariff charged by the feed adviser. This was widely ranged; Some farmers, correctly, said that they did not actually know what was being charged for giving advice by a feed advisor, because it is included into the feed price. (I noticed that some farmers got to think through this question.) They actually said that they thought that the feed advisor wanted to let them believe the advice was for free. Apparently some farmers believed this; because the opposite of the farmers who realized that they did not know what a feed advisor was charging, were farmers who said that advice from a feed advisor was for free (paragraph 8.3.4.2).

4.3.10 Following up advice

All interviewed farmers estimated a percentage to which they execute the received advice during VHHM. The average was 76% for all farmers, but the average from only the large farm farmers was considerably lower with a percentage of 63%. The other groups were more average; the average for small farm farmers 72% and on medium farms 81% (paragraph 8.3.5).

Additionally, farmers gave reasons why they did or did not follow the advice, which were mentioned by a plurality of farmers. These statements were already given in short in table 2c, but below they are described further.

The most cited reasons were:

- Having confidence in the advisors and their expertise.
- When you sought advice from advisors, for example about a specific problem at the farm, it is more likely to execute it.
- The farmer referred to himself/herself as stubborn.
- Farmers have their own wisdoms and experience.
- The advice must be feasible, both practical and realistic in terms of time.
- Costs and benefits must be weighed against each other. The investment should be worthwhile.
- Commercial advice and commercial interest, according to the farmers mostly given by the feed advisor, must be assessed extra. The commercial interest must be incorporated in the decision.
- The advice must be appropriate to the (current) farm management.
- There should be financial possibilities to execute the advice.
- Having 'cold feet'; farmers were not eager to make major changes too quickly.
- Farmers sometimes like to wait and see, to let the animals manage their own health, avoiding a (hasty) intervention.

5. Discussion

This study aimed to do a (cross) validation from the previous study done by K. Haring and the second aim was to validate their results in difference between groups of farmers and to create in-depth knowledge of farmers' opinions about veterinary herd health management programs.

However, the reader should bear in mind that the study is based on the answers given during the interviews held by 19 farmers who participated, so the results are qualitative. Due to practical constraints, such as the method of interviewing and research group, this study has some limitations:

- Because the interview should all be conducted personally, this limits the number of dairy farmers that can participate. This is partly due to the short time frame in which this study had to take place. Despite this disadvantage, there was a deliberate choice for open question interviews instead of a closed-questioned survey. Besides, executing a cross validation, there was also the goal of creating some depth. Not only on whether or not farmers discussed certain topics, but more important: why do or do not farmers want to discuss topics (or not)?
- The interviews were conducted by someone who has had no special training or education in certain communication skills or interview techniques. It is possible that answers are inadvertently affected by the interviewer.
- The results of this study cannot be extrapolated to all the Dutch dairy farms because of different reasons;
 - The farmers were contacted through personal contacts and a list of participating farmers in a purchasing organization, an agrarian collective. It is conceivable that some entrepreneurship of their farm is a characteristic which made them join the agrarian collective but can also influence their thoughts about participating in on-farm counseling or VHHM.
 - As described in part 3.2.2, the participants of this study were farmers who are mainly situated in the south of the Netherlands, the province Noord-Brabant, mostly nearby 's-Hertogenbosch and Breda. Characteristic of people, thus also including farmers, in the south of The Netherlands are different from the characteristics of the people in the, for example, more centrally located province Utrecht. Therefore this also can have an influence on their thoughts about participating in on-farm counseling or VHHM.
 - Despite of picking the dairy farmers randomly of a list with names and addresses, the interview was conducted by 12 farmers which milk their cows in a conventional manner and 7 which use a milking-robot. So in this study more than 36 percent of the participating farmers used a milking-robot. This is much more than the given national percentage (17%) of 2013 ([Landbouwleven, 2014](#)). Robot farmers have some personal preferences and characteristic which fit in the transition from conventional to robotic milking and furthermore managing a farm with a robot is totally different than milking the cows twice a day. These farm(ers) characteristic can also have an influence on their thoughts about participating in on-farm counseling or VHHM.
 - The average farm size which was used to make a division into the 3 groups, small, medium and large, is not the same as the national average farm size in The Netherlands. ([Centraal Bureau voor de Statistiek \(CBS\), 2014](#)) Thereby, most of the larger farms in the Netherlands, with more than 100 milking cows, are located in the province Brabant. ([Centraal Bureau voor de Statistiek \(CBS\), 2013](#)) So the average, used in the previous study, which was done more national, is not exactly applicable for this study.

- Conducting interviews is a more qualitative assessment than a quantitative assessment or measurement which can be achieved with a questionnaire. Therefore making an adequate in-depth statistic is very difficult. As a result, there may also be made some incorrect assumptions in the execution of the cross-validation based on the 2nd part of this study, the previous study of K. Haring.
- Thereby, the previous study was done by performing a survey, for an entirely correct cross-validation, this study (or this part of the whole study which was splitted into three) should have done by survey also, or for example a interview conducted by a more trained person to avoid biased, but because we would create some depth interviews were used instead of a survey.

Reasons farmers in this study gave for participation VHHM, and also reasons for following up the given advice and beings satisfied or not, which are all described in table 2, were similar with the reasons farmers gave in other studies. (Derks, Van Werven, Hogeveen, & Kremer, 2012) (Derks, Van Woudenberg, Boender, Kremer, Van Werven, & Hogeveen, 2013) (Derks, Van De Ven, Van Werven, & Hogeveen, 2012)

During the interview, a lot of the farmers gave answers that emerged from personal characteristics. For example, if they currently use VHHM, but also if they were satisfied about the given VHHM and if they are willing for executing the given advice.

As discussed in this report this is not only due to the personality of the farmers but also the personality of the advisor, and, perhaps most importantly, the combination of those two. If there is a mismatch between farmer and his advisor, personal characteristics prevent VHHM from being fully utilized. (Derks, Van Werven, Hogeveen, & Kremer, 2012) (Jansen, Steuten, Renes, Aarts, & Lam, 2010) This could result in dissatisfied farmers which can possibly lead to, for example, a reduced frequency of asking for VHHM and executing it. (Derks, Van Werven, Hogeveen, & Kremer, 2012)

Because farmers are also clients from a number of advice giving companies, it is important for those companies to find advisors with the right characters and personalities which will fit within your organization, but also, not always realized, they have to fit the client. This is an important factor in performing VHHM successfully, and have satisfied farmers as a client. (Wessels, Lam, & Jansen, 2013) (Maister, Green, & Galford, 2001)

Unless we concluded in paragraph 4.3.8 that the level of importance of different topics which was made in the previous study (Haring, 2015), is probably not useful in practice, I can conclude that the list of topics, which was studied before multiple times in the past, is nowadays still useful. (Boer, 2008) (Lievaart, Noordhuizen, den Daas, & Jorritsma, 1999)

It is plausible that the topics which were discussed, were the most important topics in VHHM for farmers, or at least these interviewed farmers. The farmers were asked if they want to discuss other topics (8.3.3.8) but most farmers mentioned only one topic; national laws and regulation about manure. This desire is easy to explain with the recent change of the regulatory requirement in The Netherlands with the abolishment of milk quota and the new regulation about phosphate in manure. (Parlementair Documentatie Centrum - Universiteit Leiden)

Udder health is, together with claw health, a topic of which some farmers said they only discuss it in case of problems on their farm or with their cattle (described in paragraph 4.3.8 and table 2d). Maybe that is because these are topics about health, or another explanation could be, it is because when there are problems with udder health, most of the time this is directly effecting milk performance. A decreasing milk performance is probably quickly recognized, identified and diagnosed by a farmer, and because it could be a potential risk to general health of the cow, and has a direct effect on farmers' income, farmers are more likely to treat it. So it is a reason for discussing it with their vet during VHHM.

This potential risk of loss of income due to claw health is previously studied in 2012, and was proved to be significant. On an average farm the net losses due to claw health problems are €75,- per cow per year. (Derks, Van Werven, Hogeveen, & Kremer, 2012)

Nutrition is just as often discussed with only the feed advisor, as with the combination of feed advisor with the vet. Because there was only one farmer who answered he discussed nutrition only with his vet, we could conclude that nutrition is not the topic farmers consider the most important to discuss with their vet during VHHM.

This may, in part, be because farmers get advice from the food advisor, for 'free' (by the purchase of concentrates). Because the advice is included in the food price (see also 8.3.4.2) it is very common to let the feed advisor discuss the ration and thus give advice, and be part of the VHHM performed on the farm. The data in this study, described in 4.9.3 and 4.8.3, confirm this statement.

The topic housing was mentioned as the topic which was chosen to be discussed the least during VHHM. Of all 19 questioned farmers, nine said they would not discuss housing, which is described in table 2d (and 8.3.3.6). This is not a new result, in a study done by M. Derks et al. in 2012, the authors also concluded that housing was the least discussed topic (Derks, Van Werven, Hogeveen, & Kremer, 2012). An explanation of this could be that housing is a topic with more long-term problems and often is not recognized as the cause of a decreased milk production or even a decreased farm performance. (Van Eerdenburg, Vázquez-Flores, Saltijeral-Oaxaca, & Sossidou, 2013)

Because 19 interviewed farmers all gave a different definition of VHHM (table 2c and paragraph 4.3.3), it can be concluded there is not a set definition of VHHM among farmers. A consequence of this is that there could be some confusion about VHHM. Ideas about specific needs, particular goals, ethos and working style may differ between farmers and their advisors, which can lead to incomprehension and discontent.

To avoid this, both advisor and farmers have to be aware of each other's understandings about VHHM. It is important to discuss working method and set goals. (Derks, Van Woudenberg, Boender, Kremer, Van Werven, & Hogeveen, 2013)

6. Conclusions

The purpose of this study was to make a (cross) validation of a previous study done by K. Haring and the consequent derived (group) results, and to create some depth in farmers preferences, so this study could be useful in practice.

Based on this study there were three specific conclusions that could be drawn:

6.1 Topics

The list of topics, which was multiple times studied before in the past, is nowadays still useful. The interviewed farmers in this study only added a topic which was new and was the cause of major changes in their management. So, I can strongly recommend that advisors who are performing VHHM on farms ensure they remain up-to-date to recent developments in the sector, and incorporated it into their veterinary herd health management advice.

6.2 Definitions

Because 19 interviewed farmers all gave a different definition of VHHM, the second thing that can be concluded was there is not a set definition of VHHM among farmers. To avoid incomprehension and discontent among farmers and their advisors, it is important to be aware of each other's understandings about VHHM. In the future advisors had to have this actively under their consideration.

6.3 Personal characteristics

The third conclusion that can be drawn is that personal characteristics from both farmer and advisor, can prevent VHHM from being fully utilized if there is a mismatch between those two. This could result in dissatisfied farmers which can possibly lead to, for example, a reduced frequency of asking VHHM and executing it.

Because farmers are also clients from a number of advice giving companies, it is important for those companies to find advisors with the right characters and personalities which will fit within your organization, but also, not always realized, they have to fit the client. This is an important factor in performing VHHM successfully, and have satisfied farmers as a client.

Over all, I can conclude that the results from the previous study, probably are not very useful in practice. Because the method which was used, the closed-questioned survey, came with a certain limitation and so could not take into account the personal characteristics of the farmers and was not able to create depth in the answers, thus being unable to trace the underlying reasons for the farmers' answers.

In this study, with these results, there could not be made a useful farmers profile. The only thing that certainly can be concluded is that VHHM is very personal. Both for farmers and advisors. Good collaboration and communication between these two is the only way to perform VHHM at the most useful way.

7. References

- Baarda, Goede, D., & Teunissen. (2009). Hoofdstuk 8: interviewen, hoe doe ik dat. In *Basisboek Kwalitatief Onderzoek* (pp. 224-257.). Groningen/Houten: Noordhoff Uitgevers bv.
- Bijnen, L. v. (2013, maart 8). *The economic background of veterinary herd health management programs on dairy farms*. Retrieved from Igitur - Universiteits bibliotheek Universiteit Utrecht.
- Boer, H. (2008). *"Een onderzoek naar de mening van wel- en niet- begeleide veehouders over veterinaire bedrijfsbegeleiding"*. Utrecht: Faculteit Diergeneeskunde.
- Cannas da Silva, J. N. (2006). Veterinary dairy herd health management in Europe Constraints and perspectives. *Veterinary Quarterly* , vol. 28, no. 1.
- Centraal Bureau voor de Statistiek (CBS). (2014). *Factsheet melkveehouderij 1984-2014*. Retrieved augustus 28, 2015, from www.cbs.nl: <http://www.cbs.nl/NR/rdonlyres/DE9A42C2-81D0-4759-815E-B93C88DD97EA/0/2015FS06Melkveehouderij.pdf>
- Centraal Bureau voor de Statistiek (CBS). (2013, juli 31). *Grote melkveebedrijven met meeste koeien per ha*. Retrieved september 2, 2015, from Boerenbusiness: <http://www.boerenbusiness.nl/top5/artikel/10831296/grote-melkveebedrijven-met-meeste-koeien-per-ha>
- Derks, M., Van De Ven, L., Van Werven, T. K., & Hogeveen, H. (2012). The perception of veterinary herd health management by Dutch dairy farmers and its current status in the Netherlands. *Preventive Veterinary Medicine* , 104: 207-215.
- Derks, M., Van Werven, T., Hogeveen, H., & Kremer, W. (2012). Veterinary herd health management programs on dairy farms in the Netherlands: use, execution and relations to farmer characteristics. *Journal of Dairy Science* , 1623-1637.
- Derks, M., Van Woudenberg, B., Boender, M., Kremer, W., Van Werven, T., & Hogeveen, H. (2013). Veterinarian awareness of farmer goals and attitudes to herd health management in the Netherlands. *The Veterinary Journal* 198 , 224-228.
- Haring, K. (2015). *Conjoint analysis of Dutch dairy farmer preferences regarding on-farm counseling*. Utrecht : Onderzoeksrapport master Faculteit Diergeneeskunde.
- Jansen, J., Steuten, C., Renes, R., Aarts, N., & Lam, T. (2010). Debunking the myth of the hard-to-reach farmer: Effective communication on udder health. *Journal of Dairy Science* , 1296-1306.
- Landbouwleven. (2014, februari 5). *Aantal melkrobots blijft uitbreiden in Nederland*. Retrieved augustus 20, 2015, from Landbouwleven: <http://www.landbouwleven.be/artikels/aantal-melkrobots-blijft-uitbreiden-nederland>
- Lievaart, J., Noordhuizen, J., den Daas, N., & Jorritsma, H. (1999). Veterinaire begeleiding van melkveebedrijven in Nederland: Hoe denkt de dierenarts over deelnemende en niet-deelnemende veehouders? *Tijdschrift voor Diergeneeskunde* , vol. 124 (no. 14 & 15), 434-8.
- Maister, D., Green, C., & Galford, R. (2001). *De vertrouwde adviseur*. Schoonhoven: Academic Service.

Parlementair Documentatie Centrum - Universiteit Leiden. (n.d.). *Afschaffing melkquota*. Retrieved augustus 26, 2015, from Europa Nu: http://www.europa-nu.nl/id/vht7nbdii8qv/afschaffing_melkquota

Van Eerdenburg, F., Vázquez-Flores, S., Saltijeral-Oaxaca, J., & Sossidou, E. (2013). A cow comfort monitoring scheme to increase the milk yield of a dairy farm. In A. Aland, & T. Banhazi, *Livestock housing : modern management to ensure optimal health and welfare of farm animals* (pp. 55-74). Wageningen: Wageningen Academic Publishers.

Wessels, R., Lam, T., & Jansen, J. (2013). *Hoe laat ik mijn klanten kwispelen? Veterinair communicatiehandboek*. Nijmegen: Communication In Practice.

Bedrijfsbegeleiding op melkveehouderijen

Validation of the preferences of different groups of dairy farmers regarding veterinary herd health management programs

Appendix 1

Interview questions

Figure 3: An example of the attachment which was sent to the farmers, with example questions of the interview.

Algemene gegevens:

- Achternaam
- Adres en plaats
- Telefoonnummer
- Aangesloten bij DAP

Algemene vragen:

1. Wat is uw leeftijd?
2. Hoeveel koeien heeft u?
 - a. Hoeveel koeien melkt u?
 - b. Hoeveel hiervan is droogstaand?
 - c. Doet u op uw bedrijf ook aan jongvee opfok? Hoeveel stuks?
3. Hoeveel koeien heeft u per FTE? (1 FTE= 40 uur)
 - Werkt u alleen op uw bedrijf?
 - a. Hoeveel uur is dat per week?
 - b. Indien meewerkend partner/personeel; hoeveel uur per week? (Hoeveel koeien heeft u per Fte?)
4. Bent u zeker van opvolging op uw bedrijf?
5. Bent u aangesloten bij een studieclub?
 - a. Van waaruit is deze opgericht?
 - b. Participeren hierin alleen veehouders?
 - Zo nee, wie dan nog meer?

Vragen over bedrijfsbegeleiding:

6. Kunt u een korte omschrijving geven van 'bedrijfsbegeleiding'?
7. Maakt u op dit moment gebruik van bedrijfsbegeleiding?
 - Waarom wel?
 - Waarom niet?
 - Geen interesse?
 - Andere reden?
 - a. Van wie? (voorbeelden; Veearts, KI, voerleverancier, klauwbekapper, anders..)
 - Waarom van die personen?
 - b. Hoeveel uur per kwartaal/jaar?
 - c. Welke onderwerpen komen aan bod?
Bij elk onderwerp;
 - Ja of nee
 - Door wie besproken
 - Hoeveel % van de totaaltijd
 - fertiliteitmanagement (drachtonderzoek/kengetallen)
 - uiergezondheid
 - voeding
 - klauwgezondheid,
 - jongvee opfok
 - huisvesting
 - melkkwaliteit en productiemanagement
 - d. Zou u nog andere onderwerpen besproken willen hebben? Welke en waarom?
8. Bent u op dit moment tevreden over de aangeboden bedrijfsbegeleiding?
 - a. Waarom wel/niet?
 - b. Volgt u de adviezen voortkomend uit de bedrijfsbegeleiding ook op?
 - Waarom wel/niet?

Appendix 2 - 8. Results (continued)

8.1 General data

8.1.1 Veterinary practice

Because the study is mostly conducted in the same area of Brabant, almost all of the farmers were connected to the same veterinary practice. Because the practices have not given permission to be included in this study they hereby have fictitious names.

Veterinary practice 'X' was an one-man practice and 6 of the participants were clients of him. Veterinary practice 'Y' is a large practice with more bovine veterinary practitioners, 4 of the farms were client. Veterinary practice 'Z' is another large practice, located on the other side of the area where the researched farms were located, 6 of them were client of this practice. The remaining three farms were connected to three different veterinary practices.

These data came out of the interview, but besides that the farmers told me other things that would not be covered in a survey. The bovine practitioner, owner of practice X, was until recently employed by practice Y. According to the farmers his way of working did no longer fit in this practice and therefore he started his own practice. Possibly, this has to do with the transition to a more modern way of working at practice Y, for example they introduced the Danish system as a way of giving VHHM. The clients of practice Y said this was one of the reasons to be (or to stay) connected to this practice. Other farmers wanted to remain true to their trusted vet and then switched to the newly established practice X. Price may have been a reason to switch, because X is new, and Y is larger and more modern and charges higher prices. Another remarkable thing that was mentioned by the farmers was that the owner of practice X was born and raised in the same area where he started his new practice. He was referred to as their neighbor or well-known from the neighborhood and because of that they granted him clients by setting up his practice. The working area of practice X and Y are very similar and what can certainly be argued is that these two practices are direct competitors.

Practice Z was situated more on the east of the area where the researched farms were located, X and Y were located more central to the west. Between the two major practices Y and Z, there is a big city. With the associated traffic and the risk you run in an emergency in rush hour, this was mentioned as a reason to weigh in when choosing your practice. In addition it should not be forgotten that most of the farms have existed for generations and that choosing a practice (or a method that's used by a vet or practice) is not only done by today's farmer, but probably the choice has already been made years earlier, and is now an appropriate working manner on the farm.

8.1.2 Conventional or robot milking

Another general question that was asked was whether or not the farmers used a milking robot. Of the 19 participants, 12 farmers used a conventional way of milking and 7 farmers milk their cows by using a milking-robot.

As explained in 3.3 'Data analysis' the participants were divided into three groups; small, medium and large farms, and the data of milking method of all the participants is displayed in table 3.

	Small farms	Medium farms	Large farms	Total
Conventional milking	4	6	2	12
Milking-robot	2	5	0	7
Total	6	11	2	19

Table 3: Data of milking method of all 19 participating farmers.

8.2 Farm(ers) data

In the second part of the interview the focus was on farmers- and farm characteristics.

8.2.1 Farmers age

The farmers were asked about their age. Among the 19 participating farmers the overall average was 46,8 years. The data was also divided into the three groups; the mean age of the small farm farmers was 52, farmers who have a medium farm had an average age of 45 years and the two farmers with a large farms had an average age of 41,5 years.

8.2.2 Farm size

In 3.3 'Data analysis' it was explained that the participants were divided into three groups; small, medium and large farms. For this the number of milked cows was used. The first group were small farms with a number from 0 to 89 milking cows, in study with 19 participants there were 6 farms which fulfilled this requirement. The group of medium farms had 90 to 180 milking cows and there were 11 participating farms that fitted into this group. Only 2 of the 19 participating farms milked more than 181 cows and, therefore, were the so-called large farms. These data can also be found in the total group numbers displayed in table 1. The average of milking cows at all the participating farms was 110 cows.

8.2.3 Workload

The next question asked to the participating farmers was about the working hours on their farm. Also, they were asked whether they outsourced some kind of work on their farm, and in particular the number of hours per week.

The total amount of hours farmers work on their farm, including hours of work that was done by other persons, varied considerably. The least number of hours that was mentioned was 60 hours weekly (medium farm), the most was 160 hours weekly (large farm). The average of all 19 interviewees was 108 hours weekly. Divided into the three groups the average of the small farm farmers was approximately 93 hours weekly, of

medium farms 111 hours weekly and on large farms the average amount of hours that was worked was approximately 140.

Only one farmer worked a less amount of hours than he outsourced hours of work, all other farmers worked more hours themselves than others on their farm. The most frequently named answers that were given to the question to whoever they outsourced work were, listed in order of importance, their partner, their parent(s), a collaborator or their son.

Because the farmers gave the amount of hours worked per week on their farm, it's possible to calculate the number of FTEs per week. One FTE here is a forty-hour week. When the calculated FTEs are combined with the total number of cows on the farm, so the milking cows as described in paragraph 8.2.2 'Farm size' plus the present young stock, it's possible to calculate the workload on the farm. This workload is indicated as number of cows which are taken care of per FTE. Average number of cows (total) per FTE is 73 from all interviewed farmers. The workload can also be displayed for each group; the workload on small farms was 58 average, on a medium farm 81 and the average workload on a large farm is calculated as 74 cows per FTE.

This is quit comparable to the data from the CBS; According to them was the average number of cows in 2014 per farmer 85. In this research it's a bit lower, but a reason for this could be the low number of 'large' farms that participate in this research. (Centraal Bureau voor de Statistiek (CBS, 2014)

It is remarkable that there were only three farms who didn't raise their young stock themselves, their workload was comparable to the average of all the farmers.

8.2.4 Successor

All 19 interviewees were asked whether or not there was a successor to the farm. Answers that had been given were; yes (3 times), no (5 times), possibly (8 times) and possible but probably not (3 times).

The answer that possibly was mostly given was that they did not know: the farmer did not have children yet or the children were too young to give guarantee whether they would successor or not. The farmer answered possibly but probably not when the children had a certain age and said they did not want to take over the farm or they did not show interest in the farm whatsoever.

Divided into the 3 groups were the answers as show in the table below.

	Small farms	Medium farms	Large farms	Total
Yes	1	1	1	3
No	2	3	0	5
Possibly	2	5	1	8
Possible, probably not	1	2	0	3
Total	6	11	2	19

Table 4: Answers of the participating farmers of they have a successor or not.

8.2.5 Study groups

Only one of the farmers didn't participate in a study group, this was a farmer of a medium sized farm. Two of the remaining eighteen even participated in several study groups, one of them was a large farm farmer, the other was a medium size farm farmer. Exactly half of the farmers who participated in a study group, so 9, said they participated in a group for only farmers, 7 of them were even a member of a group exclusively for dairy farmers. If others were admitted, it often was the veterinary practice or vet. Farmers said study groups usually came together four to five times in the winter season, often for information evenings, lectures and excursions.

8.3 VHHM & on-farm counseling

8.3.1 Definition of VHHM

In this study the farmers gave their definition of Veterinary herd health management. Not one of their definitions was the same!

So I can certainly say that the approach is very diverse, but there are some statements mentioned often.

- The majority of the farmers named it as a periodical farm visit from advisors. Some of them added a specific time frame, like for example fortnightly or every six weeks.
- Another thing what was mentioned frequently, was that VHHM consisted a sort of assistance (help) or guidance (counseling).
- Most of the farmers added some kind of goal into their definition. They wanted to improve or optimize their farm performance, or they wanted to be able to maintain the results they currently achieved. Thereby, VHHM had to contribute to the improvement of income and/or cost reduction on the farm. (Bijnen, 2013)
- Farmers like using the VHHM for staying up-to-date. Keeping up on the latest developments and insights is important to them.
- External advisors provide a fresh perspective, a second opinion or a critical view. It prevents farm blindness.
- Alongside advice, some farmers added specific (veterinary) proceedings; fertility checks, vaccinating, dehorning of calves.
- VHHM is seen as a preventive way of working.
- During VHHM the advisor takes a look at the cattle and goes through the key figures.

Because of the variety of the different definitions, it was impossible to make a group differentiation based on the farm size.

8.3.2 Using VHHM

After asking the farmers about their definition of VHHM, the farmers were asked about whether or not they were using VHHM, why they do or why they do not, from which external partie(s) or advisor(s) they got their advice, why this advisor, the amount of time it takes per year and what topics were discussed during the on-farm counseling.

8.3.2.1 Current use of VHHM

During the interview the farmers were asked about their current participation in VHHM and on-farm counseling. All 19 farmers were currently using VHHM.

Hereby should be kept in mind that their definition of VHHM was very diverse (which was already told in paragraph 8.3.1), so some were only referring to VHHM (from a vet) and some also meant on-farm counseling from other parties of external advisors, like their food advisor.

8.3.2.2 *Advisors*

The farmers were asked from which persons or parties they got advice about the previously mentioned topics, if they got advice from the same person from a specific business every time and if they got some kind of feedback from their advisors about the previous visit or given advice.

8.3.2.2.1 *From which parties*

Actually, this question was asked the farmers twice. In this question, and again in the question which is described in paragraph 8.3.3 'Topics'. It was remarkable to evaluate their answers, because they often answered to this question only a part of the parties that visited their farm to perform VHHM. After asking the farmers to differentiate per topic, they often wanted to add advisors that they did not mention the first time. This happened frequently, which shows the farmers aren't fully aware of the (number of) parties they got advice from.

The given answers to this question, although not always complete, were; the veterinarian or veterinary practice, feed advisor, an advisor from the artificial insemination company, the hoof trimmer and someone from 'Alpuro' or 'Nutrifeed', a company which is specialized in calves and calf nutrition.

For example, this last mentioned parties, Alpuro and Nutrifeed, were mentioned by farmers only 2 times at this question, but were mentioned by 4 different farmers when I asked them from which advisor they got VHHM advice for the topic young stock rearing. This is described in paragraph 8.3.3.5.

In the previous study farmers said they also received advice from the hoof trimmer (Haring, 2015). This is in contradiction with the now interviewed farmers, they said the hoof trimmer only treated the cows and therefore is not part of the VHHM (also described in paragraph 8.3.3.4).

8.3.2.2.2 *Same advisor*

All of the farmers said they got advice from the same person from a specific business every time.

Sometimes this was arranged by the business, they were assigned an advisor. This was usually the case with the feed advisor and the delegate from the artificial insemination company. Often, this was because of the advisor was linked to a particular region. It is not very common, but farmers can require for another consultant/advisor from the same company.

In other cases the advisor, mostly the veterinarian, was chosen by the farmer. Having only one bovine practitioner is legally obliged. Not for performing VHHM, but dairy farmers must have a farm health plan (usually in Dutch abbreviated as BGP) and farm treatment plan (in Dutch abbreviated as BPP), drawn up in consultation with the assigned vet. This requires a periodically farm visit from the same veterinarian, which is often associated with performing VHHM.

The interviewed farmers identified both advantages and disadvantages of having the same advisor(s) performing on-farm counseling and provide them with advice.

Benefits they mentioned were:

- Farmers spoke about the 'click' that farmers had to have with their advisor. This can be interpreted as a preference for a person or personality.
- A pleasant and suitable way of communicating, which may be a part of the answer which is given above. A smooth way of communication is an effect of a positive relationship.
- Farmers like to have the ability to have personal contact.

- A result of having some personal contact is that this also allows the advisor to have some extra possibility to provide farmers with feedback. This is appreciated by farmers because this shows involvement (further described in paragraph 8.3.2.2.3).
- External advisors got to know the farmer, the farm and the (current) farm management. This increased the opportunity to learn about the preferences of the farmer, and which advice is suitable. Advisors then could provide the farmer with a more tailor-made approach and advice. Obviously, this is affecting whether or not the farmer is satisfied about the given advice and whether the advice will be followed or not. For further details, see paragraph 8.3.4 'Satisfaction about VHHM' and 8.3.5 'Following up advice'.
- The external advisors are considered confidential.
- External advisors could provide fresh new insights.
- Having the same delegate for a longer period of time ensure that it is not only giving and getting advice, but there is a change of generating a collaboration between the farmer and advisor. Requesting advice, getting it and executing is complemented by the ability of discussing results of the given advice. Farmers indicated that this leads to increasing quality of advice which is given in the future, resulting in farmer being more and more satisfied. Better results can be achieved.

Most of these things were mentioned by the farmers as a reason for being satisfied about VHHM and on-farm counseling, in particular of course the advisor and the advice he gave. This is discussed further below in 8.3.4.1 'Advice'.

The disadvantage of having the same advisor is the risk to develop farm blindness or tunnel vision about the farm. Not for themselves, after all this is the reason (or at least one of the reasons) for consulting an external advisor, but from their advisors. However, it should be noted that farmers assumed and expected that this is only a small risk. Advisors visit more farms, have colleagues as a second opinion, receive refresher training and have learned to give appropriate and suitable advice. Besides, on most farms VHHM is given by more parties, so more delegates and every time new insights. This all reduces potential risks.

8.3.2.2.3 *Feedback*

I asked the farmers if they usually received some kind of feedback from their advisors. This could be feedback about the previously given advice, or about the changes they made on the farms which were advised.

Only 3 of the 19 interviewees, answered they didn't get feedback at all, all the other participant said they got feedback from the advisors.

Providing feedback could be done in different ways. Some advisors provided feedback during the next consult. Other advisors sent an e-mail or gave the farmers a call after a period of time.

If feedback only happened during the next farm visit, or also in between appointments, depended partly on the frequency of visits. When the advisor executes on-farm counseling/VHHM quite regularly, for example every two weeks, he's more likely to discuss the results of the given advice in person. Otherwise, if there is an, for example, six- or eight week interval between the previous and new appointment for a farm visit, it is more usual to have some kind of contact (with feedback) in between.

It should be borne in mind that giving feedback could be protocol of the external parties. Also, personal interpretation and the personal manner of approaching customers from a specific advisor, could be a reason. Eventually, the relationship between the farmer and the executor of VHHM is also relevant.

Remarkably, all of the farmers who received some kind of feedback from their advisors said they really appreciated it. It was mentioned before in 8.3.2.2.2 'Same advisor', but

providing feedback shows some kind of involvement. In addition, it gives the possibility of fine-tuning the executed advice and thus optimizing results.

Also, more farmers spoke about a periodical feedback appointment between different advisory parties. Some were live, an on-farm counseling with more parties, other made an agreement with the different advisors to have mutual contact. Mostly, this was between the feed advisor and the veterinarian. They keep each other informed by phone or per e-mail.

The three farmers which answered they did not receive feedback from their advisor, said they did not mind. One of the farmers said he did not have the positive, personal, relationship with his advisor he would like. He confessed that this question put him to think and made him realize he maybe was better off switching delegate. Another farmer answered very specific; his advisor once asked him to schedule a feedback moment, his reaction was: "No news, is good news." He took the advice, assessed it and executed it (or not). If it did not bring the promised results, in the period the advisor predicted it should work, he called the advisor and requested him to have an appointment as quickly as possible. "I am too busy to waste time. Especially if it is only to tell someone that they have done their job well. That is what they get paid for, right? I do not think I have to add a pat on the back."

8.3.2.3 Duration

The last part of this question was about the estimated duration of VHHM. Farmers answered a certain hours per year or quarter of a year, from every advisor they mentioned before. This was combined as a total of hours per year the farmer got VHHM (from all of the referred parties). As explained, this wasn't always complete (paragraph 8.3.2.2.1). Presuming that the farmers mentioned at least the advisors which represent the majority of time consumed by VHHM, the average data are as follows:

The average of all interviewees was 32 hours per year. Differentiated into the three groups the average time on a small farm was 24 hours per year, on a medium sized farm 35 hours per year and VHHM took 36 hours per year on a large farm.

8.3.3 Topics

All 19 interviewees were asked about their interests in 7 topics regarding veterinary herd health management programs or on-farm counseling (claw health, nutrition, young stock rearing, fertility management, udder health, housing and analysis of production numbers and milk quality).

This question in the interview was organized per topic, and contained several questions per topic. They were asked whether the topic was discussed or not during the VHHM/on-farm counseling, by which advisor this particular topic was discussed and what percentage of the total time of the VHHM/on-farm counseling discussing this particular topic took.

In the results which are described below a table is made per topic (table 5 till 11), which differentiates the most common answers which were given by the farmers, both all interviewees and differentiated into the three groups. The common answers could be only one of the previously mentioned parties or a combination of parties. Besides that, there were also farmers which have not answered one of the most common answers, the number of the farmers which gave answers which are not included in the table is also given.

Abbreviations which are used in the table are 'Vet' (for advice given by only the veterinarian), 'AIC' (the advice is given by, only, a delegate from the artificial insemination company), 'FA' (the advice is given to the farmer by a feed advisor) and

'Alp/NF' (advice given by an advisor from Alpuro or Nutrifeed, which are companies specialized in calves and calf nutrition). As told, combinations of different parties was also mentioned, in the table displayed with a '&' sign. Besides all these possibilities farmers sometimes answered that they only discussed some topics if there were problems with their farm or cattle, this is displayed with 'by problems'. Last option was that some farmer didn't discuss the topic at all.

8.3.3.1 Fertility management

Fertility management				
	Small farms (6)	Medium farms (11)	Large farms (2)	Total (19)
Vet	1	3	0	4
AIC	1	3	1	5
FA	0	1	0	1
Vet & AIC	3	3	0	6
Topic is not discussed				0
Discussed but not mentioned above				3
Total				19

Table 5: Data farmers discussing the topic 'Fertility management' with different advisors during VHHM.

This topic is mostly discussed by 2 parties; the vet and the delegate from the artificial insemination company. This is partly due to the fact that many farmers let the AIC inseminate their cows, and the follow-up, the fertility checks, is also done by this company. Often, this is presented as a package deal with a fixed tariff, and is often offered at a more favorable price compared to the bovine practitioner. More details about the rate differences can be found in paragraph 8.3.4.2 'Tariff'.

Remarkable is that none of the farmers didn't want to discuss fertility during VHHM. From the differentiation between farm sizes you could conclude that farmers with medium sized farms discussed fertility the most. They do this with their vet, a delegate from the artificial insemination company or both. Every one of these options just as many as the other options.

Reason farmers gave to have the delegate from the artificial insemination company in combination with their veterinarian, or even instead of their vet, was because the farmers said that delegates from the AIC have more expertise. The argument for this statement was that they had more experience; "It's their job".

The answers from the farmers about the time it took to complete this topic during a VHHM appointment were very diverse. Some farmers said 40%, others they discussed it approximately 80% of the time, in total with all of their advisors. Fertility was most of the time discussed by farmers with a delegate from the artificial insemination company, what, of course, is not very surprising. Some farmers even said it was 100%. After this, farmers discussed this topic with their vet, and the least time they would discuss it with the feed advisor.

8.3.3.2 Udder health

Udder health				
	Small farms (6)	Medium farms (11)	Large farms (2)	Total (19)
Vet	3	4	0	7
FA	0	2	0	2
Vet & FA	0	3	1	4
Vet by problems	2	1	0	3
Topic is not discussed				1
Discussed but not mentioned above				2
Total				19

Table 6: Data farmers discussing the topic 'Udder health' with different advisors during VHHM.

Udder health is, together with claw health, a topic of which some farmers said they only discuss it in case of problems on their farm or with their cattle.

Maybe this is the explanation why this topic is most frequently discussed with the farmers' vet during VHHM.

Again this topic is mostly discussed by farmers with a medium size farm.

As displayed in table 6, udder health is mostly discussed by the veterinarian and/or the feed advisor. Farmers estimated they discuss it 10 till 15 percent of the time with a feed advisor, and between 15 till 25 percent of the time with a bovine practitioners, so more with a vet than an advisor. Maybe that is, because it is a topic about health, or another explanation could be, it is because when there are problem with udder health, most of the time this is directly affecting milk performance. A decreasing milk performance is probably quickly recognized, identified and diagnosed by a farmer, and because it could be a potential risk to general health of the cow and has a direct effect on farmers' income, farmers are more likely to treat it. So discussing it with their vet during VHHM, in a preventive conversation, could be the first step to curative health management.

8.3.3.3 Nutrition

Nutrition				
	Small farms (6)	Medium farms (11)	Large farms (2)	Total (19)
Vet	1	0	0	1
FA	4	2	1	7
Vet & FA	1	5	1	7
FA & Alp/NF	0	2	0	2
Topic is not discussed				0
Discussed but not mentioned above				2
Total				19

Table 7: Data farmers discussing the topic 'Nutrition' with different advisors during VHHM.

The third topic was nutrition. All interviewed farmers said they want to discuss this topic with their advisors.

Only farmers with a medium size farm asked an extra company for food advice, but this was always in combination with the food advisor. This can be due to the fact that this extra advisory company is specialized in calves. So for the rest of the cattle they consult the feed advisor.

Moreover, a remarkable result is that 4 of the 19 farmers had advice from this extra company, Alpuro or Nutrifeed, all of these were medium farmers. Although these companies specialized themselves in calves, and mostly calves nutrition, only 2 of the farmers who consulted these companies, discussed the topic nutrition with a delegate from this company. This is notable because all did discuss the topic of young stock rearing with Alpuro or Nutrifeed (this is described below in 8.3.3.5).

Nutrition is just as often discussed with only the feed advisor, as with the combination of feed advisor and the vet. Because there was only one farmer who answered he discussed nutrition only with his vet, we could conclude carefully that nutrition is not the topic farmers consider the most important to discuss with their vet during VHHM. This may, in part, be because farmers get advice from the food advisor, for 'free' (by the purchase of concentrates). Because the advice is included in the food price (see also 8.3.4.2) it is very common to let the feed advisor discuss the ration and thus give advice, and be part of the VHHM performed on the farm. The data in this study confirm this statement. Only one of all 19 interviewed farms didn't discuss the topic nutrition, with the feed advisor or some other advisor in combination with the feed advisor.

As the name suggests, feed advisors mostly give advice about nutrition. It is therefore not surprising that this topic is discussed 75% average, substantial more than the average of 20% of time the farmers discuss nutrition with their veterinarian.

8.3.3.4 Claw health

Claw health				
	Small farms (6)	Medium farms (11)	Large farms (2)	Total (19)
Vet	2	2	0	4
FA	0	3	1	4
Vet & FA	0	2	0	2
Vet by problems	1	2	0	3
Topic is not discussed				3
Discussed but not mentioned above				3
Total				19

Table 8: Data farmers discussing the topic 'Claw health' with different advisors during VHHM.

Claw health was the second topic whereof some farmers said they only want to discuss it in case of problems. Also 3 of the interviewees answered they didn't discuss it at all. All of the other farmers said they had only a brief conversation about claw health with their advisor. Only because claw diseases or (a fault in) the ration of the cows affected the milk performance. This is the reason why this topic is only discussed with the veterinarian and the feed advisor, or both. On 3 farms the hoof trimmer, trimmed the claws of the cattle. This were 2 medium sized farms and 1 large farm. Because all of the farmers said the trimmer only treated the cows and didn't gave specific advice, they all concluded this wasn't part of VHHM.

In general, farmers said claw health was discussed 10% to 15% of the time during VHHM. Obviously, when farmers answered it was only discussed in case of problems, it took more of the time of a VHHM appointment, up to 80%.

8.3.3.5 Young stock rearing

Young stock rearing				
	Small farms (6)	Medium farms (11)	Large farms (2)	Total (19)
Vet	1	0	1	2
FA	2	2	1	5
Vet & FA	1	5	0	6
Topic is not discussed				2
Discussed but not mentioned above				4
Total				19

Table 9: Data farmers discussing the topic 'Young stock rearing' with different advisors during VHHM.

Young stock rearing was a topic which was mostly discussed by farmers with their veterinarian and the feed advisor.

On large farms, it was equally divided between the vet and the feed advisor, farmers from medium farms discussed young stock rearing most of the time with both advisors. There was a remarkable result what is not included in table 9. As told in paragraph 8.3.2.2.1 'From which parties' and in 8.3.3.3 'Nutrition' there were 4 farmers who mentioned they were advised by delegates from Alpuro and/or Nutrifeed. All of these four were farmers from a medium size farm. Although this are companies with are specialized into calves and, in particular calf nutrition, they were consulted only by 2 (of 4) farmers about the topic nutrition, but all 4 asked for their advice for the topic of young stock rearing. Because all four gave different answers about the combination of advisory parties, this wasn't included into the table.

If we combine the results from table 9, with the data above, we can conclude that all 11 farmers from medium farms discuss this topic during VHHM. Also all of the farmers from large farms where eager to discuss young stock rearing with their advisors. Only farmers from small farms formed an exception, 2 of the 6 farmers with a small farm said they did not want to discuss this topic. Maybe this could be the result of the fewer number of young stock they raise on their farm compared to the numbers of young stock medium farms and large farmers have.

The answers from the farmers about the time it took to complete this topic during a VHHM appointment were very diverse. Some farmers said 10%, others they discussed it approximately 80% of the time. The average was about 15%, but all said in time the percentage of discussing it with the feed advisor were markedly higher than the percentage of time they discuss it whit their vet. Also the farmers mentioned they wanted to discussed it because of the increased number of young stock they have on their farm now (in comparison with several years ago), or because they had some problems in the past.

8.3.3.6 Housing

Housing				
	Small farms (6)	Medium farms (11)	Large farms (2)	Total (19)
Vet	1	1	0	2
FA	0	2	0	2
Vet & FA	0	3	1	4
Topic is not discussed				9
Discussed but not mentioned above				2
Total				19

Table 10: Data farmers discussing the topic 'Housing' with different advisors during VHHM.

The topic housing was mentioned as the topic which was chosen to be discussed the least during VHHM. Of all 19 questioned farmers, 9 said they won't discuss housing, and of these 9, 5 were farmers of small sized farms (which were 6 in total). In comparison, only half of the large farm farmers (one of two) said they wanted to discuss housing during

VHHM, and 3 of the 11 medium sized farmers answered they did not want to discuss this topic. An explanation for this could be that housing, in contrast to other mentioned topics like for example udder health, is a topic with more long-term problems. When housing is not perfect most of the farmers do not link direct effect diseases, such as mastitis, to the housing problems. Also decreased milk production, or even farm performance, which could be a long-term consequence of incorrect cattle housing, is not linked so quick to the cause. This is exactly why VHHM is more of a preventive way of advising than a curative way of treating.

When it was discussed, most of the farmers answered they wanted to get their advice from the vet and/or the feed advisor, and this only took 5% till 15% of the time of a VHHM appointment.

8.3.3.7 Production numbers & milk quality

Production numbers & Milk quality				
	Small farms (6)	Medium farms (11)	Large farms (2)	Total (19)
Vet	1	3	0	4
FA	2	3	2	7
Vet & FA	1	1	0	2
Topic is not discussed				3
Discussed but not mentioned above				3
Total				19

Table 11: Data farmers discussing the topic 'Production number and milk quality' with different advisors during VHHM.

This topic is also mostly discussed by the veterinarian and/or the feed advisor and the farmer during VHHM. As shown in table 11, only 3 of all interviewees said they do not want to discuss production number and milk quality, but all the others have commented they do discuss the topic, but it took only a small percentage of the whole VHHM appointment.

8.3.3.8 Other topics

The farmers were asked if they want to discuss other topics, besides the 7 topic that were questioned and mentioned above (paragraph 8.3.3.1 to 8.3.3.7). Of all 19 interviewees, 8 answered that they do not want to discussed any other topic, 11 said they would.

Of course, I asked the farmers with topic this would be, and their answers were: national laws and regulations about manure, financial advice, discussing future plans, state of health of the livestock (disease status), producing (home-grown) roughage and a fertilization plan.

An explanation for the farmers' desire to discuss the national laws and regulation about manure, but also producing roughage and fertilization plans, is that the regulatory requirement in The Netherlands changed drastically. Per april 1st 2015 the Dutch government abolished the milk quota. In order to be able to withstand the increasing

livestock population, the State Secretary Dijksma introduced a system with tradable phosphate ceilings per farm. This so-called 'phosphate quota' exists since July 2015. (Parlementair Documentatie Centrum - Universiteit Leiden)

These interviews were conducted in August 2015, thus when the phosphate rules were relatively new.

8.3.4 Satisfaction with VHHM

The farmers were asked whether they were satisfied about the offered VHHM and/or on-farm counseling at the moment.

Despite that this was an open question the answers given by the farmers can be divided in two parts; answers about the advice, in what way the advice was given and the quality of the given advice, and the tariff that was charged to give advice.

8.3.4.1 Advice

All of the farmers were satisfied about the advice they received from all different parties. Only 6 of the farmers answered that they were partially satisfied. These six were equally divided; 3 small farm farmers and 3 medium farm farmers said they were only partially satisfied about their VHHM. And thus, 100% of the interviewees from large farms were completely satisfied, from small farms this was 67%, and the least satisfied were medium farm farmers with 64% of the farmers who were completely satisfied about their VHHM.

On the question why they were (partially) satisfied, they all got different answers. Some of these answers were also reasons for following, or rather not following, the advice and execute the advice. This reasons are described below in 8.3.5 'Following up advice'. Another thing that was frequently mentioned was the 'click' that farmers have with their advisor, as already mentioned in paragraph 8.3.2.2. Nowadays there is a more equal relationship between the farmer and the advisor. Farmers said they have the feeling they can discuss everything with their advisor, they are very approachable for the farmer when they think they need help with some kind of problem.

As also described in paragraph 8.3.2.2 'Same person' the advisor of a specific external advisory business, is mostly the same person, thus for example the have always the same feed advisor, or at least the same person for a longer period of time. This means that the farmer gets the chance to weigh various opinions and (in part) to execute them on their farm, and to be able to see the results of these changes. Hereafter, they have the opportunity to discuss the results with their advisor. By this method of working, requesting advice, getting it and executing, they get confidence in the advisor and their advice. This in combination with the, more or less, 'click' they felt with the advisor makes that the received advice must be appropriate to the (current) farm management. The first step of this is that the given advice had to be practicable.

On the other hand, farmers say they appreciate the critical view of the external advisors on their farm management. Communication both ways and honesty of the advisor is appreciated. Farmers said they do not see an added value of getting advice from someone with the exact same opinion as them, they do not want to pay for hearing their own ideas, conception and insights.

If the same person gives them advice for a longer period of time they can evaluate the advice. If the farmers sees a positive result of the performed advice they start to have confidence in the advisors and their expertise. This is obviously easier said than done, farmers said about themselves they can be a bit stubborn, and said that getting advice from a new advisor rarely goes just right (for the first time). Confidence had to grow. Of

course this doesn't only applied for the given advice but also to the (veterinary) proceedings they execute on the farm, for example artificial insemination. Farmers are aware of the fact that the external advisors, and therefore the by them given advice, is not always independent. Commercial advice and commercial interest, according to the farmers mostly given by the feed advisor, is a logical consequence of the fact that they work for an external company and not for the farmer. Moreover, this commercial interest was mentioned as a reason to extra asses this advice and thereto even mentioned as a reason to not follow and execute the given advice. This is later described in 8.3.5 'Following up advice' of this report. Farmers said about themselves, they were able to detect and to see through these commercial interests, that they do not mince their words and told the advisor they were not pleased with these sort of subjectively advice. After the advisor knew this kind advice wasn't desired by the farmers, apparently he changed his strategy, because the farmers said that after the expressed their frustrations, the commercial interest of the advice was omitted. Another advantage of having the same advisor and the personal approach is approachability. Most farmers have a personal telephone number of their advisor and do not hesitate to give them a call in case of problems. On the other hand, advisors are offering themselves for being approachable and accessible. According to the farmers, through this the advisors providing them with good service. As mentioned at the beginning of this paragraph, the reasons why they were (partially) satisfied, were described in a different way and words, but the various statements described above were given several times by several farmers.

8.3.4.2 Tariff

Most farmers answered that the tariffs are acceptable, they got value for money. But the tariffs that the bovine practitioners and veterinary practices applied were high. They were referred to as the highest of all tariffs the several extern advisors applied, but also referred to as to high. In the latter cases it was mainly intended that it was too high in comparison with other external parties who can give advice about the same topic or can perform the same (professional, veterinary) activities. Farmers' opinions about the tariff charged by the feed adviser ranged. Some farmers, rightly, said that they did not actually know what was being charged for giving advice by a feed advisor, because it is included into the feed price. I noticed that some farmers got to think through this question. The opposite of this were farmers who said that advice from a feed advisor was for free. The first group of farmers, who realized that they didn't know what a feed advisor does charge, actually said that they thought that the feed advisor wanted to let them believe the advice was for free. Most farmers said they have discussed the tariffs with their advisors in the past, usually this provides a customized offer, mostly a buyout package with advice and veterinary activities or discount offers.

8.3.5 Following up advice

The question about how many percent of the time farmers obeyed and/or execute the received advice was answered with an average percentage of 76%. Spreading within the group of all 19 interviewees was 50% to 95%. Divided into the three groups gave that the average percentage of farmers that obeyed the given advice from small farms was 72%, of medium farms 81% and farmers from large farms obeyed on an average percentage of 63%.

Additionally they were asked about the reason they do or do not follow advice. Most farmers gave more than one reason, but some given reasons were mentioned by several farmers. The most cited reasons for following, or rather not following, the advice were:

- Having confidence in the advisors and their expertise.
- When you sought advice from advisors, for example about a specific problem at the farm, it is more likely to execute it.
- The farmer referred to himself/herself as stubborn.
- Farmers have their own wisdoms and experience.
- The advice must be feasible, both practical and realistic in terms of time.
- Costs and benefits must be weighed against each other. The investment should be worthwhile.
- Commercial advice and commercial interest, according to the farmers mostly given by the feed advisor, must be extra assessed. The commercial interest must be incorporated in the decision.
- The advice must be appropriate to the (current) farm management.
- There should be financial possibilities to execute the advice.
- Having 'cold feet'; farmers aren't eager to make major changes too quickly.
- Farmers sometimes like to wait and see, to let the animals manage their own health, avoiding a (hasty) intervention.

Appendix 3 – Samenvatting van de resultaten voor de participerende veehouders Bedrijfsbegeleiding op Nederlandse melkveehouderijen.

In de toekomst is bedrijfsbegeleiding een steeds belangrijker onderdeel van de melkveehouderij. Echter, er is ruimte voor verbetering. Door bedrijfsbegeleiding een vaste structuur te geven en daarbij voorgeschreven stappen te volgen zoals het stellen van doelen, plannen, het uitvoeren van het gegeven advies en een evaluatie, zijn dierenartsen en andere adviseurs in staat om bedrijfsbegeleiding meer passend te maken aan de wensen van de huidige melkveehouderij.

Dit benadrukt dat de uitvoering van bedrijfsbegeleiding door de jaren heen steeds blijft evalueren. Als we in staat zijn om veehouders te verdelen op basis van hun interesses door het maken van verschillende veehouderprofielen, zijn dierenartsen en adviseurs beter in staat om zich te richten op de onderwerpen waarvoor een specifieke boer zich interesseert. Dit werd in een eerdere studie gedaan door K. Haring.

Voor deze huidige studie, welke een cross-validatie is van de eerder uitgevoerde studie, werden negentien willekeurig geselecteerde boeren benaderd en persoonlijk geïnterviewd. Dit interview bevatte open vragen en was grofweg verdeeld in drie delen; de algemene gegevens, algemene vragen over de boeren en hun boerderij en vragen over bedrijfsbegeleiding en hoe zij dit ervaren.

De resultaten van dit onderzoek zijn samen te vatten in onderstaande tabellen.

	Gemiddelde (van alle 19 participerende veehouders)	Opmerkingen
Algemene gegevens		
Dierenartsenpraktijk	6 aangesloten bij praktijk 'X' 4 aangesloten bij praktijk 'Y' 6 aangesloten bij praktijk 'Z'	De 3 overgebleven veehouders waren klant bij 3 verschillende praktijken.
Conventioneel of robot melken	12 melkt conventioneel 7 melkt met een robot	

Tabel 2a: Samenvatting van de antwoorden gegeven door alle 19 participerende veehouders tijdens het interview, verdeeld in 4 delen. De 3 hoofdonderdelen van het interview; 'Algemene gegevens', 'Algemene vragen over de boeren en hun boerderij' en vragen over bedrijfsbegeleiding en hoe zij dit ervaren, en over de verschillende onderwerpen die tijdens bedrijfsbegeleiding worden besproken.

	Gemiddelde (van alle 19 participerende veehouders)	Opmerkingen
Gegevens boer(derij)		
Leeftijd veehouder	46,8 jaar oud	
Groote melkveehouderij	Melkkoeien: 110,3 Totaal (koeien en jongvee): 191,2	
Werklast	72,8 koeien per FTE	Gemiddeld 108,1 uur werk per week, spreiding van 60 tot 160 uur per week.
Opvolger	57,9% heeft een opvolger (11 veehouders).	Hiervan hadden 3 met zekerheid en 8 mogelijk een opvolger.
Studieclub	94,7% aangesloten bij een studieclub	10,6% was aangesloten bij meerdere studieclubs. 37,1% was aangesloten bij een studieclub voor alleen melkveehouders.

Tabel 2b: Samenvatting van de antwoorden gegeven door alle 19 participerende veehouders tijdens het interview, verdeeld in 4 delen. De 3 hoofdonderdelen van het interview; 'Algemene gegevens', 'Algemene vragen over de boeren en hun boerderij' en vragen over bedrijfsbegeleiding en hoe zij dit ervaren, en over de verschillende onderwerpen die tijdens bedrijfsbegeleiding worden besproken.

	Gemiddelde (van alle 19 participerende veehouders)	Opmerkingen
Bedrijfsbegeleiding		
Definitie	Alle 19 participerende veehouders gaven een eigen definitie, maar sommige omschrijvingen werden meerdere keren genoemd.	<ul style="list-style-type: none"> • Periodiek bezoek. • Krijgen van hulp en begeleiding. • Doel; verbeteren van bedrijfsprestatie en/of -resultaten. • Up-to-date blijven. • Voorkomen bedrijfsblindheid. • Naast advies, uitvoeren van (veterinaire) (be)handelingen. • Preventieve manier van werken. • Adviseur bekijkt zowel de koppel als de kengetallen.
Huidig gebruik	100% maakt op dit moment gebruik van bedrijfsbegeleiding	
Van welke partijen		<ul style="list-style-type: none"> • Dierenarts • (Adviseur van) de veevoerleverancier • Adviseur van de KI • Alpuro en/of Nutrifeed
Dezelfde adviseur	100% van het advies werd gegeven door dezelfde persoon van een bepaalde adviserende partij	Veehouders waarderen dit en noemen vele voordelen. Slechts één nadeel wordt genoemd; het risico op het bedrijfsblind worden van hun adviseur.
Terugkoppeling	84,2% ontving enige vorm van terugkoppeling van hun adviseur	De overgebleven 15,8% kreeg geen terugkoppeling, maar vindt dit niet erg.
Duur	32 uur per jaar	
Tevredenheid over bedrijfsbegeleiding	68% was tevreden	De overgebleven 32% (6 boeren) waren gedeeltelijk tevreden
Tarief	Acceptabel	<ul style="list-style-type: none"> • Tarief dat de dierenarts rekende was, volgens veehouders, het hoogste. • De KI hanteert een vastgesteld tarief. • Meningingen over het tarief van de voerleverancier varieerden.
Opvolgen van advies	76% van de veehouders volgt het advies gegeven tijdens bedrijfsbegeleiding op	<ul style="list-style-type: none"> • Vertrouwen hebben in de adviseurs. • Wanneer men vroeg om advies, werd het vaker opgevolgd. • Veehouders noemden zichzelf eigenwijs. • Boeren hebben zelf kennis en ervaring. • Het advies moet haalbaar zijn, zowel praktisch en realistisch. • Kosten en baten moeten afgewogen worden. • Commercieel advies moet extra worden bekeken. • Passend bij (huidige) bedrijfsvoering/bedrijfsmanagement. • Financiële mogelijkheden. • 'Koudwatervrees'. • De dieren hun eigen gezondheid laten regelen, vermijden van (overhaast) ingrijpen/behandelen.

Tabel 2c: Samenvatting van de antwoorden gegeven door alle 19 participerende veehouders tijdens het interview, verdeeld in 4 delen. De 3 hoofdonderdelen van het interview; 'Algemene gegevens', 'Algemene vragen over de boeren en hun boerderij' en vragen over bedrijfsbegeleiding en hoe zij dit ervaren, en over de verschillende onderwerpen die tijdens bedrijfsbegeleiding worden besproken.

	Gemiddelde (van alle 19 participerende veehouders)	Opmerkingen
Onderwerpen		
Vruchtbaarheid	Door veehouders het meest besproken met hun dierenarts en/of een adviseur van de KI.	
Uiergezondheid	Door veehouders het meest besproken met hun dierenarts en/of een (adviseur van) de veevoederleverancier	5,3% (1 boer) besprak dit onderwerp niet
Voeding	Door veehouders het meest besproken met hun dierenarts en/of een (adviseur van) de veevoederleverancier	10,5% raadpleegde Alpuro/Nutrifeed
Klauwgezondheid	Door veehouders het meest besproken met hun dierenarts en/of een (adviseur van) de veevoederleverancier	15,8% (3 boeren) besprak dit onderwerp niet
Jongveeopfok	Door veehouders het meest besproken met hun dierenarts en/of een (adviseur van) de veevoederleverancier	10,6% (2 boeren) besprak dit onderwerp niet
Huisvesting	Door veehouders het meest besproken met hun dierenarts en/of een (adviseur van) de veevoederleverancier	47,4% (9 boeren) besprak dit onderwerp niet
Melkqualiteit & productiemanagement	Door veehouders het meest besproken met hun dierenarts en/of een (adviseur van) de veevoederleverancier	15,8% (3 boeren) besprak dit onderwerp niet
Overige onderwerpen	57,9% wil naast de eerder genoemde onderwerpen een ander onderwerp bespreken	Meestal werd verzocht om onderwerpen te bespreken die te maken hadden met de nieuw geldende mest- en fosfaatwetgeving

Tabel 2d: Samenvatting van de antwoorden gegeven door alle 19 participerende veehouders tijdens het interview, verdeeld in 4 delen. De 3 hoofdonderdelen van het interview; 'Algemene gegevens', 'Algemene vragen over de boeren en hun boerderij' en vragen over bedrijfsbegeleiding en hoe zij dit ervaren, en over de verschillende onderwerpen die tijdens bedrijfsbegeleiding worden besproken.

Op basis hiervan konden er drie belangrijke conclusies worden getrokken:

De lijst van onderwerpen (klauwgezondheid, voeding, jongvee opfok, vruchtbaarheid, melkqualiteit en productiemanagement, uiergezondheid en huisvesting), welke in de literatuur al eerder werd onderzocht, is vandaag de dag nog steeds nuttig, maar kan worden aangevuld met onderwerpen over recente ontwikkelingen in de sector (tabel 2d). Het indelen van de verschillende onderwerpen op een lijst welke onderwerpen bij veehouders de meeste prioriteit hebben is waarschijnlijk niet bruikbaar in de praktijk. Omdat de negentien geïnterviewde melkveehouders allemaal een andere definitie van bedrijfsbegeleiding gaven (tabel 2c), is het duidelijk dat er geen vaste definitie van en eenduidigheid over bedrijfsbegeleiding bestaat. Om onbegrip en ontevredenheid onder de boeren en hun adviseurs te voorkomen is het belangrijk om bewust te zijn van elkaars interpretatie en invulling van bedrijfsbegeleiding.

De derde conclusie die getrokken kan worden is dat de persoonlijke kenmerken van zowel de boer en adviseur, kunnen voorkomen dat bedrijfsbegeleiding volledig wordt benut wanneer deze twee persoonlijkheden niet bij elkaar passen. Dit kan leiden tot ontevreden veehouders wat op zijn beurt weer kan leiden tot, bijvoorbeeld, het minder frequent vragen van bedrijfsbegeleiding of het gegeven advies minder vaak opvolgen.

Al met al kan ik concluderen dat de resultaten van de vorige studie waarschijnlijk niet erg bruikbaar zullen zijn in de praktijk. Voornamelijk omdat de methode die werd gebruikt, de enquête met gesloten vragen, een zekere beperking met zich meebracht en er dus geen rekening gehouden kon worden met de persoonlijkheden van de veehouders. Daarnaast was men niet in staat om diepte te creëren in antwoorden en hiermee de onderliggende redenen voor deze antwoorden te ontdekken.

In deze studie was het met deze resultaten niet mogelijk om een bruikbaar veehouderprofiel te schetsen, maar er kan zeker worden geconcludeerd dat bedrijfsbegeleiding erg persoonlijk is, voor zowel de boeren als de adviseurs, en dat goede samenwerking en communicatie nodig is om bedrijfsbegeleiding ten volle te kunnen benutten.