

## SUPPLEMENT E – EXAMPLES OF HERD TEST PERIOD, HERD TEST, HERD, HERD TEST SAMPLE, AND HERD TEST SAMPLE MILKING

This supplement relates to herd testing of batch and distributed milking herds. Examples that show how the terms 'herd test period', 'herd test', 'herd test sample', and 'herd test sample milking' relate to each other for batch and distributed milking herds are outlined below.

### SE1 - EXAMPLES FOR BATCH MILKING HERDS

The following definitions apply to batch milking herds and are as defined in the New Zealand standard NZS 8100:2015 *Dairy herd testing*

<b>Herd test (HT)</b>	For batch milking herds it is the period of time, over one or more consecutive herd test (HT) sample milkings where samples or measurements are taken
<b>Herd test period</b>	For batch milking herds it is the period of time, ranging from cups on at the milking immediately before the first herd test sample milking through to cups off of the last consecutive herd test sample milking
<b>Herd test sample</b>	A representative sample or measurement taken from a cow for the purpose of determining the cow's milk volume and its milk characteristics and components over a specific period of time. Milk characteristics and components are required to be linked to the milk volume for the sample collected
<b>Herd test sample milking</b>	The period of time, from cups on to cups off, where herd test samples or measurements are taken so that, milk components and characteristics, and can be determined. Milk yield is to also to be determined. Milk characteristics and components are required to be linked to the milk volume for the sample collected.

### SE1 – Example 1

**Scenario:** A herd is milked on both the morning and the afternoon of 1 January and then again on the morning of 2 January. The herd has herd test samples taken at the afternoon milking on 1 January and at the morning milking on 2 January.

**Herd test period:** The time from the cups on at the morning milking on 1 January to cups off at the morning milking on 2 January.

**Herd test:** The time from cups on at the afternoon milking on 1 January through to cups off at the morning milking on 2 of January.

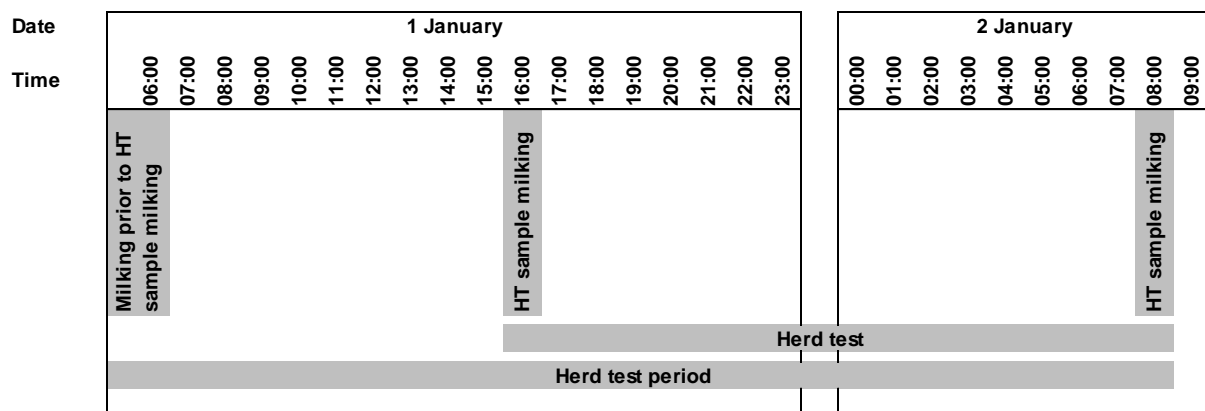
**Herd test sample milking:** There are two herd test sample milkings during the herd test period one on the afternoon of 1 January and another on the morning of 2 January.

Example 1 is further illustrated in Table SE1.

**Table SE1 – Illustration of Example 1**

Herd test period			
		Herd test	
Herd milked?	Yes	Yes	Yes
Samples taken?	No	Yes	Yes
Date	1 January	1 January	2 January
Cups on time	06:00	16:00	
Cups off time			08:00
	<b>Milking immediately before the first HT sample milking</b>	<b>HT sample milking</b>	<b>HT sample milking</b>

Using a timeline scale, Example 1 would look like this:



**SE2 – Example 2**

Scenario: A herd is milked on the morning and afternoon of 1 January and then again on morning of 2 January. The herd has herd test samples taken only at the morning milking on 2 January.

Herd test period: The time from the cups on at the afternoon milking on 1 January to cups off at the morning milking on 2 January.

Herd test: The time from cups on until cups off during the morning milking on 2 January.

Herd test sample milking: There is only one herd test sample milking during the herd test period on the morning of 2 January.

Example 2 is further illustrated in Table SE2.

Table SE2 – Illustration of Example 2

		Herd test period	
		Herd test	
Herd milked?	Yes	Yes	Yes
Samples taken?	No	No	Yes
Date	1 January	1 January	2 January
Cups on time	07:00	16:00	
Cups off time			08:00
		<b>Milking immediately before the first HT sample milking</b>	<b>HT sample milking</b>

### SE3 – Example 3

Scenario: A herd is milked on 1 January both in the morning and in the afternoon and then again on the following morning (2 January). The herd has herd test samples taken only at the afternoon milking on 1 January.

Herd test period: The time from the cups on at the morning milking on 1 January to cups off at the afternoon milking on 1 January.

Herd test: The time from cups on through to cups off at the afternoon milking on 1 January.

Herd test sample milking: There is only one herd test sample milking during the herd test period on the afternoon of 1 January.

Example 3 is further illustrated in Table SE3.

Table SE3 – Illustration of Example 3

		Herd test period	
		Herd test	
Herd milked?	Yes	Yes	Yes
Samples taken?	No	Yes	No
Date	1 January	1 January	2 January
Cups on time	06:00	16:00	
Cups off time			08:00
		<b>Milking immediately before the first HT sample milking</b>	<b>HT sample milking</b>

Using a time-line scale, Example 3 would look like this:

Date	1 January														2 January																		
Time	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00					
	Milking prior to HT sample milking										HT sample milking																						
											Herd test																						
	Herd test period																																

## SE2 - EXAMPLES FOR DISTRIBUTED MILKING HERDS

### SE2.1 - Overview

For distributed milking herds the herd testing procedure requires milk samples to be collected from all cows at each milking during the herd test. The duration of the herd test for distributed milking herds is determined by the average number of milkings for the herd. The herd average is calculated based on the average number of milkings for each individual cow milked in the 48 hours preceding the herd test period. If the average number of milkings for the herd average is  $\leq 2$  milkings per 24-hour period then the herd test is required to be 36 hours. If the average number of milkings for the herd average is  $> 2$  milkings per 24-hour period then the herd test is required to be 16 hours.

The following definitions apply to distributed milking herds and are as defined in the New Zealand standard NZS 8100:2015 *Dairy herd testing*.

<b>Herd test period</b>	For distributed milking herds it is the period of time ranging from cups on at the milking immediately before the first herd test sample milking for the individual cow that has the longest milking interval preceding the designated herd test start time
<b>Herd test (HT)</b>	For distributed milking herds it is the period of time from the designated start time for the herd test to the designated end time for the herd test over which one or more consecutive herd test (HT) sample milkings where samples are taken
<b>Herd test sample</b>	A representative sample taken from a cow for the purpose of determining the cow's milk volume and its milk components and characteristics over a specific period of time. Milk components and characteristics are required to be linked to the milk volume for the sample collected
<b>Herd test sample milking</b>	The period of time, from cups on to cups off, where herd test samples are taken so that, milk components and characteristics, and can be determined. Milk yield is to also to be determined. Milk components and characteristics are required to be linked to the milk volume for the sample collected.

## SE2.2 – Example 4 - Distributed milking herd with $\leq 2$ milkings in a 24-hour period

Scenario: It has been determined for a distributed milking herd that the average number of milkings in the herd is  $\leq 2$  milkings in a 24-hour period. The herd test is required to be conducted over 36 hours. The designated time for the start of collection for the herd test sample milkings will be on the afternoon of 1 January at 6pm and will continue until 3rd January 6am. Herd test samples are collected from each cow, each time it is milked during this herd test period.

Herd test period: The time from the cups on for the individual cow that has the longest milking interval preceding the designated herd test start time of 1 January at 6pm. The herd test period for cows within the herd is determined for each cow and uses the milking interval preceding the milking in the designated herd test start time of 1 January at 6pm. The herd test period ends 3<sup>rd</sup> January at 6am.

Herd test: – Individual cow

The herd test period is 36 hours from a designated start time, when the HT milking samples are taken. The start time for the herd test is designated by the certified herd tester. In this scenario the designated time for the start of collection for the herd test sample milkings will be on the afternoon of 1 January at 6pm and will continue until 3rd January 6am.

Herd test sample milking: – Individual cow

Each milking between 6pm on 1 January and 6am on 3 January is a herd test sample milking. It is expected that each cow has at least one or more herd test sample milkings.

Example 4 is further illustrated in Table SE4

**Table SE4 – Illustration of Example 4**

		Herd test period		
		Herd test		
Designated herd test	-	Start time 18:00 (06:00 PM)	-	End time 06:00 (06:00 AM)
Individual cow milked?	Yes	Yes	Yes	Yes
Samples taken?	<b>No</b>	<b>Yes</b> For all cows milked at or after the start time.	<b>Yes</b> For all cows milked during the designated herd test.	<b>Yes</b> Up to designated end time.
Date	Actual date recorded for each individual cow.	1 January. Actual date recorded for each individual cow.	2 January. Actual date recorded for each individual cow.	3 January. Actual date recorded for each individual cow.
Cups on time	Actual time recorded for each individual cow*.	Actual time recorded for each individual cow.	Actual time recorded for each individual cow.	Actual time recorded for each individual cow.
Milking interval	Milking immediately before the first HT sample milking	All HT sample milking samples collected in this period.		

### SE2.3 – Example 5 - Distributed milking herd with >2 milkings in a 24-hour period

Scenario: It has been determined for a distributed milking herd that the average number of milkings for individual cows in the herd is >2 milkings in a 24-hour period. The herd test period is required to be conducted over 16 hours. The designated time for the start of collection for the herd test sample milkings will be on the afternoon of 1 January at 4pm and will continue until 2 January 8am. Herd test samples are collected from each cow, each time it is milked during this herd test period.

Herd test period: The time from the cups on for the individual cow that has the longest milking interval preceding the designated herd test start time of 1 January at 4pm. The herd test period for cows within the herd is determined for each cow and uses the milking interval preceding the milking in the designated herd test start time of 1 January at 4pm. The herd test period ends 2 January at 8am.

Herd test: – Individual cow

The herd test period is 16 hours from a designated start time, when the HT milking samples are taken. The start time for the herd test is designated by the certified herd tester. In this scenario the designated time for the start of collection for the herd test sample milkings will be on the afternoon of 1 January at 4pm and will continue until 2nd January 8am.

Herd test sample milking: – Individual cow

Each milking between 4pm on 1 January and 8am on 2 January is a herd test sample milking. It is expected that each cow has at least one or more herd test sample milkings.

Example 5 is further illustrated in Table SE5

**Table SE5 – Illustration of Example 5**

		Herd test period	
		Herd test	
Designated herd test	-	Start time 16:00 (04:00 PM)	End time 08:00 (08:00 AM)
Individual cow milked?	Yes	Yes	Yes
Samples taken?	<b>No</b>	<b>Yes</b> For all cows milked at or after the start time.	<b>Yes</b> For all cows milked during the designated herd test.
Date	Actual date recorded for each individual cow.	1 January Actual date recorded for each individual cow.	2 January Actual date recorded for each individual cow.
Cups on time	Actual time recorded for each individual cow.	Actual time recorded for each individual cow.	Actual time recorded for each individual cow.
Milking interval	Milking immediately before the first HT sample milking	All HT sample milking samples collected in this period.	