



INSTRUCTIONS FOR BLOOD SAMPLING

The successful use of blood sampling dairy cows for metabolic profiles only comes about if a number of “rules” are followed. These have been developed over the years of the existence of the Dairy Herd Health and Productivity Service (DHHPS) and are of considerable importance. If these are not followed, there can be some waste of effort, time and money.

The “rules” concern: 1. Selection of Cows, 2. Timing of Tests and 3. Collection of Information.

Selection of Cows for blood testing

- At each test a *maximum* of 17 cows should be submitted. Extra ones cannot be accommodated due to the design of the analysis system.
- Usually a test consists of seven cows in early lactation, five in mid lactation and five dry.
- No group should contain less than five cows.
- **Early lactation cows should be between 10 and 20 days calved.** If not available, then cows up to 4-5 weeks calved can be included but the timing of the test should be reconsidered first. Cows more than 3-4 weeks calved may have experienced a nutritional constraint already, reduced their performance, lost condition and adapted themselves and their biochemistry to be in balance - i.e. normal - by then.
- A group of mid lactation cows should always be included if possible. They provide an essential within herd comparison and so make better and more detailed interpretation possible. The definition is less rigid. Cows should be passed peak and up to about 100 days calved and, preferably, from the same mob as the earlies.
- Dry cows should preferably be in the last 10 days before calving.
- Cows should be typical of their group. Avoid the very best and the very worst.
- Do not test problem or sick cows, e.g. infertile ones. Their result will, at best, confirm they have a problem, not what it is. If poor fertility is a prime concern, include some problem cows in the mid lactation group but ensure early lactation and dry cows are properly selected as above.
- Do test cows coming into problem periods, i.e. pre-peak or pre-first service.
- Only test the same cow on subsequent occasions if it fits the definition required for its group.

Timing of Blood Tests

- The main aim of blood testing is to ascertain the adequacy of each new diet in relation to the herd's requirements, *i.e. what the cows think of their rations*. So blood sampling should be carried out as soon as possible after major changes in dietary constituents. *But* two weeks must elapse after the changes to allow the rumen to become fully adapted.
- As early lactation nutrition has the greatest effect on performance, health and fertility, blood testing should therefore be done when the first five or six cows are calved 10 to 20 days on each new diet.
- In planning tests therefore, consider the expected calving pattern and feed changes.
- Typical blood sampling times are two to three weeks after: Winter housing, change of silage, start of maize silage, change of cake, turn out, blood test prompted by dietary changes, start of block calving.
- Other useful times are: At autumn grass, dry cows at grass, during summer grazing, when there are specific problems - in which case act quickly.

Blood Sampling Procedure

Always notify us, please, at Edinburgh of samplings – in advance if possible but on the day of sampling or even that the samples are on the way will do fine.

- Blood samplings should ideally be on Monday, Tuesday, Wednesday or Thursday - to avoid delays in transit over the weekend.
- If there is a large morning concentrate only feed, tests should be carried out two to four hours after it - to avoid biochemical disturbance associated with feeding.
- Packing and transmission should be the responsibility of the veterinary surgeon. A means of transmission which ensures the arrival of the parcel the next day should be used. **Special Delivery** is best. First class post is **not** reliable. A completed Sheet 3 (top copy) should be included in the parcel or sent the same day by fax.
- One green top vacutainer (lithium/heparin anti-coagulant) and one grey top vacutainer (oxalate/fluoride anti-coagulant, *not date expired*) are required from each cow. 5ml, 7 ml or 10 ml are best. They should be filled right up. ***At the first test for a new member, two green top tubes would be appreciated.***
- Samples are taken from the neck or tail vein - not mammary.
- Weigh band and condition score all cows sampled.
- Any extra, non-standard analyses may require extra blood samples (and they may cost extra for which there will be an additional charge). Enquire of us at Edinburgh before sampling preferably. Ensure that Sheet 3 is clearly marked with the specific request.
- Arrange date and time of post-sampling discussion meeting while all concerned are still at the blood sampling. One week later is usual by when the results will be available.

Collection of Information - Sheet 1 and Sheet 3 come as a top copy with an NCR one underneath. We suggest you keep those and send us the top ones. If a sheet 1 has been completed recently, we do not need another one.

- **Completion of Sheets 1 and 3 is essential.** Completing them fully and legibly enables the whole unique DHHPS blood test interpretation system to function to its potential. Leaving out information detracts from what can be done and may delay turnaround of reporting.
- Enter as much of the information as possible before sampling.
- Sheets 1 and 3 should if at all possible accompany the samples to Edinburgh to avoid delays in return of results. If sending separately is absolutely unavoidable, do it by Fax and not post, ensuring that the blood samples are identified clearly and numbered according to their order on the Sheet 3. Also please ensure then that the farm is identified inside the parcel!

NUTR.ADVISER: Enter the name(s) of those responsible for advice, please.

TEST TYPE: Place a tick in the appropriate box to indicate if this farm is an existing or new member of the blood testing DHHPS or if the test is a One-Off/Single Test.

Area/Code No. : Fill in DHHPS code if known or MAPS code number. If in doubt, leave blank.

Farmer: Enter correct name with initials, please.

Address: Herd or farm name is essential to distinguish farms belonging to the same estate or to farmers of the same name.

Blood Sample Date: Enter the full date on which sampling is done.

No. of cows sampled: Enter the actual number of cows from which samples are being submitted. - 17 maximum per sheet 3.

Milk Record Date: Enter date of the milk recording from which the individual milk yield figures below are taken.

MILK QUALITY: Enter the month from which the figures are taken. Up to date milk quality figures are essential. Otherwise average annual or breed figures have to be used rendering the computer output relatively meaningless.

FEED NAME: For each concentrate and forage enter the name in full or use a clear abbreviation. **All feeds count as concentrates except silage, hay, straw and grass.** If not enough space, enter in "Comments" or on a separate sheet of paper. If there is a concentrate likely to be unknown to us in Edinburgh, include the analysis, please. If there is a Home Mix/blend, preferably include the analysis but if this is not available, list the constituents.

AMOUNT PER COW KG. :

Conc 1: The variable parlour feed or variable feed in automatic out-of-parlour feeders is concentrate 1. The total actual daily amount in kg each cow is eating should be entered

in the individual cow CONC 1 column below, opposite each cow. Please do not write the theory such as 0.4 kg/litre. Someone on the farm must know how much the cows are getting and it often is not the same as the theory!

Conc 2: The fixed amounts for each lactation group per cow per day in kg - **Conc 3** and **4** similarly.

F'age 1: Enter the amount per cow, freshweight in kg, fed of all forages in these sections. Accurate figures may not always be possible to obtain but your assessments are better than our guesses. "Ad lib silage" can be a sign of weak control and management of feeding!

FORAGE ANALYSIS: It is important to enter at least Dry Matter (DM), Metabolisable Energy (ME) and Crude Protein (CP) analysis figures of each forage in the appropriate column. Without them it is not possible to produce a complete, appropriate Blood Test Results report.

Complete Diets/Total Mixed Rations should be entered separately as concentrates and forages with their analyses. List extra concentrates in "Comments" or on a separate piece of paper.

INDIVIDUAL COW DATA

COW NO. : Enter the identity of each cow preferably with the same ID as on the blood sample tubes. There is a limit to the number of characters which can be stored and so please do not enter full names.

CALVING DATE: Enter the *previous* calving date - not the number of days calved, please. Enter the *expected* calving date for dry cows. Use numbers preferably, e.g. 14-10-01. Always include the year. If any date unknown, estimate, please, rather than write "March".

APPROX WT Kg: Enter the weight in kilograms from a weighband. A spring balance pulled to 5 kg should be used to get the correct tension on the weighband. Properly done weigh-banding is more accurate than a weigh-scale as it excludes the variations caused by gut fill from food and water. ***If there are no facilities for weighing or using a weighband, please make your own estimate of each cow's weight and put that in rather than leave it blank.*** We need a bodyweight measurement for each cow for the results sheet to print.

CONDITION SCORE: Enter figures in decimal form to one decimal place only, e.g. 2.5. Do not include fractions or plus and minus signs, please. Always put figures in here – scoring should be done by handling the cows rather than by eye, which is frequently deceptive.

MILK YIELD Kg: Enter the most recently recorded daily total milk.

EXPECTED YIELD Kg: Enter a figure, from prediction curves if available, which shows the daily figure you believe that cow should be producing *on that day*. Always put in a figure, not +, - or = please. The purpose of this column is to communicate to us your concern or satisfaction with current performance.

LACT NO. : Enter the current lactation number for milkers and the *next* one for dries. So Lact. 1 should never be seen in the dry group tested unless the animal has not yet produced its first calf!

FEED

CONC 1 Kg: Enter the individual daily total amount of the feed identified above as Conc 1. There are two extra columns in case there is more than one variable feed. If they are used, please do not enter figures as well in the "Amount per cow" section for that feed.

COMMENTS. : A description of the silage here can be helpful. Anything which might allow a better understanding of the situation and so engender a more useful report, should be included. Any specific problems, anxieties, messages, requests for extra analyses should be mentioned here.

Rec'd at lab, Test Id, Request Done: leave blank.

NB Analysis for copper and GSHPx (selenium) will only be carried out automatically on the first test for new members, Single Tests (One-Offs) and Dry Cow Checks. In all other instances if these or other special analyses are required, it is essential that the sheet 3 is marked with the request. There are additional charges in these other instances.