

# DietCheck News

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*This Newsletter is primarily aimed at our European users who are having to design milk production diets after a long winter and following slow spring grass growth.*

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## Formulating a Grazing Diet

It is always important for dairy farmers to maintain production levels, along with herd health and fertility, over the grazing period. After a long, hard (and expensive) UK winter followed by delayed grass growth it is more important than ever to ensure that these aims are achieved at the lowest possible cost.

Whilst farmers have to make some difficult decisions about their grazing and conservation plans, their feed advisers have the added responsibility of justifying why extra feed may be needed. After a long winter animals will often look after themselves and begin to “shine” once adequate grass is available and this makes it all too easy to believe that extra feed is not required. On the other hand extra feed, whether forage or concentrate, offered to lower yielding or later lactation animals will merely replace grazed grass and is unlikely to be an economic proposition.

DietCheck can help answer the following important questions:-

1. Are extra nutrients – energy, protein, fibre, minerals, vitamins – required to support the level of production required?
2. Are steps needed to avoid problems such as digestive upsets, falling butterfat, or metabolic problems such as “grass staggers”?
3. How much buffer feeding with forage is possible before adversely affecting intake of grazed grass?
4. Is extra feed likely to give an economic return in terms of extra milk volume, milk solids, or improved health and fertility?

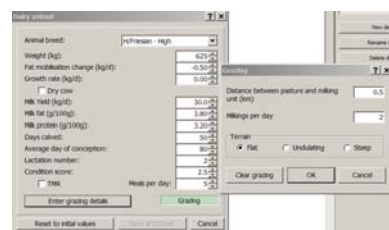
DietCheck helps answer these questions in a way that allows each step to be discussed by the herd's management team – perhaps the nutritionist, the farm vet and the farmer. There are no magic answers and there are still many decisions that have to be taken on the basis of experience and knowledge of the farm. However, we would suggest the logical sequence when using DietCheck is as follows.

*(Remember – use the “What If” option at each stage to enable the effect of every change to the diet to be clearly seen.)*

### Step 1

Enter the details of the “target” animal for the herd - this is the best description of the most important “average” animal in the herd at the time the diet is being formulated.

1. If most of the herd is past peak yield, and safely in calf, then this is the animal to use as the “target” - any late winter calvers should be considered separately. However, if it is a spring calving herd, or the difficult winter has delayed conception, then the “target” animal details must reflect this.
2. It is very important to enter all the correct animal details to take account of the different yield, milk quality, body condition score and weight change. .
3. Finally don't forget animals need energy to travel to and from the pasture and to graze and the DietCheck grazing feature should be used to reflect this.



## Step 2

As the main objective to use as much grazed grass as possible, the next step is to estimate nutrient supply at maximum grass intake. This is not an exact science and knowledge of both nutrition and the specific herd details are needed.

1. Begin by choosing the most appropriate pasture type from the feed library and adjust the nutrients in line with the quality of the grass available. The most important adjustment is to be realistic about the likely dry matter of the grazed grass.
2. Then enter the amount of grass dry matter you think will be eaten. It is reasonable to assume that cows over 600 kg live weight are likely to eat at least 14 kg of grazed grass (if it is available) and may even manage over 16 kg with excellent pasture.
3. The next step is to move from DM to Fresh Matter and decide if this level of intake is realistic. For example, 15 kg DM of grass at 20% DM requires the animal to eat 75 kg fresh which should not be a problem. However, in a wet period when DM can reduce to 15%, the same level of nutrients will require an intake of 100 kg fresh grass.
4. At this stage the projected intake can be adjusted in line with knowledge of the grazing available, the time spent grazing, grass palatability, etc.

## Step 3

Examine the nutritional balance shown against the target animal and see if extra nutrients are required. It may be that the only requirement is for additional minerals but, at reasonable yield levels, extra energy, protein, and perhaps fibre are almost certainly needed.

If this is the case, start by adding any extra buffer forage to the diet BEFORE considering additional concentrates. This is because there is a limit (probably in the range 16 – 18 kg) to the maximum total forage DMI possible. You must avoid adding conserved forage that will just replace grazed grass in the diet.

Now add the concentrates if necessary – either alone or as part of a buffer TMR – to match the final nutritional balance for the “target” animal.

| Fresh intake (kg/d): 90.8 94.2 |                   | Diet DM (%): 16.5 19.4 |                | Milk Yield (kg/d): 30.0 30.0 |              | Cost (£/t): 2.10 2.82 |                  | Hand mixed       |       |
|--------------------------------|-------------------|------------------------|----------------|------------------------------|--------------|-----------------------|------------------|------------------|-------|
|                                | Original          | What If?               |                | Original                     | What If?     |                       | Original         | What If?         |       |
|                                | Amount fed (kg/d) | Amount fed (kg/d)      | Cost (£/tonne) | Nutrient name                | Daily intake | Daily intake          | % DM requirement | Shortfall/Excess |       |
| Forage                         |                   |                        |                | DM (kg)                      | 14.8         | 18.5                  | 15.7             | 2.7              |       |
| Grazing - Spring Wet Grass     | 78.000            | 78.000                 | 20.000         | Forage DM (kg)               | 90.0         | 90.0                  |                  |                  |       |
| Maze Silage - 25% Starch       | 12.000            | 12.000                 | 45.000         | ME (MJ)                      | 174.7        | 221.5                 | 11.99            | 218.2            | 3.3   |
| Wheat                          | 0.000             | 4.000                  | 180.000        | ME (Nureq)                   | 90.1         | 101.5                 |                  |                  |       |
| Dairy Mineral                  | 0.000             | 0.150                  | 0.000          | Milk from ME (kg)            | 21.7         | 30.6                  |                  |                  |       |
| Calveed Magnesia               | 0.000             | 0.000                  | 0.000          | Protein (%DM)                | 20.1         | 18.4                  |                  |                  |       |
|                                |                   |                        |                | Protein (g)                  | 2971.8       | 3791.8                | 18.37            |                  |       |
|                                |                   |                        |                | HP (g)                       | 1681.3       | 2051.4                | 11.11            | 1850.2           | 218.2 |
|                                |                   |                        |                | HP (Nureq)                   | 96.0         | 111.8                 |                  |                  |       |
|                                |                   |                        |                | ERDP (g)                     | 2055.8       | 2350.9                | 12.73            | 1894.4           | 456.5 |
|                                |                   |                        |                | ERDP (Nureq)                 | 139.4        | 124.1                 |                  |                  |       |
|                                |                   |                        |                | DUP (g)                      | 741.0        | 843.8                 | 4.57             | 627.5            | 216.2 |
|                                |                   |                        |                | DUP (Nureq)                  | 91.4         | 134.5                 |                  |                  |       |
|                                |                   |                        |                | Starch (g)                   | 780.0        | 1763.1                | 18.14            |                  |       |

## Step 4

|                                |        |        |        |
|--------------------------------|--------|--------|--------|
| Milk Yield (kg)                | 35.0   | 30.0   | 25.0   |
| Fat mobilisation change (kg/d) | -0.50  | -0.40  | 0.20   |
| Milk fat (g/100g)              | 3.8    | 3.9    | 3.9    |
| Milk protein (g/100g)          | 3.1    | 3.2    | 3.2    |
| Days calved                    | 50     | 100    | 150    |
| Grazing - Expected av intake   | 78.000 | 78.000 | 80.000 |
| Buffer TMR - expected intake   | 12.000 | 12.000 | 14.000 |
| Parlour concentrate            | 4.000  | 2.000  | -      |
| DM intake (kg/d)               | 20.2   | 18.4   | 17.8   |
| Forage DM (%DM)                | 14.0   | 14.0   | 14.7   |
| ME (MID)                       | 12.2   | 12.1   | 12.0   |
| ME (% req)                     | 100.5  | 100.3  | 100.7  |
| Protein (%DM)                  | 19.5   | 19.3   | 18.9   |
| MP (% req)                     | 114.7  | 113.8  | 116.4  |
| ERDP (% req)                   | 127.3  | 129.7  | 128.3  |
| DUP (% req)                    | 142.2  | 140.1  | 151.1  |
| Starch (%DM)                   | 15.7   | 15.3   | 16.2   |
| Sugar (%DM)                    | 8.6    | 8.7    | 8.6    |
| NDF (%DM)                      | 33.0   | 33.7   | 34.3   |

In every herd there will be a range of production levels, stages of lactation, animal condition, etc. and so a feedplan showing the balance of the diet for a wider range of production levels should be prepared. Where just a single TMR mix is being offered then it must be assumed (quite reasonably) that there will be a difference in intake. Where concentrate is offered through the milking parlour this can be shown for each yield level.

## Step 5 & at each stage

DietCheck is not a financial model and it would be wrong for it to attempt to show the full financial implication of any diet. The value of the diet does not just depend on the current value of the milk produced (volume and quality) but the longer term value of improved herd health and fertility. Thus some of the economic benefit of a diet will not be seen immediately and indeed may affect profitability for a long time after being fed.

However, DietCheck does show clearly the cost of each change in the daily ration. Using the “What If” option allows the user to see at each stage not only the changes to the nutritional balance but changes in the cost of the diet being proposed.

|                    |      |          |            |                |          |                    |      |      |             |      |      |            |
|--------------------|------|----------|------------|----------------|----------|--------------------|------|------|-------------|------|------|------------|
| Close              | Save | Optimise | DM Fresh   | Save row order | Show DSS | Hand mixed         |      |      |             |      |      |            |
| Fresh intake kg/d: | 90.0 | 94.0     | Diet DM %: | 16.5           | 19.4     | Milk Yield (kg/d): | 30.0 | 30.0 | Cost (£/t): | 2.10 | 2.82 | Hand mixed |

## **Grazing & sub clinical acidosis**

There is often a debate about whether cows suffer from acidosis whilst grazing high D value grass. Although the signs are more difficult to see than with housed animals (for example loose dung is not necessarily a problem) the fall in butterfat % if nothing else may suggest sub-optimal rumen function.

DietCheck, with its ability to take account of NDF degradability, can help show the effect of dietary change. In particular, if extra feed is required to support target yields, it can help to decide what type of feed is required to maintain rumen function.

For example, it is often the case that with high protein grass all that is needed to increase milk yield potential (apart from minerals & vitamins) is some extra energy. Adding some wheat to the diet may solve the energy problem but also reduce the RSV (Rumen Stability Value) to a dangerously low value. Adding more fibre, perhaps as straw, may increase the RSV but if too much is added, the straw will start to replace grass in the diet.

To achieve optimal performance, the answer to two simple questions is needed:-

1. Is extra structural fibre needed to maintain rumen function?
2. What is the minimum amount needed to stabilise the rumen?

Only DietCheck with its ability to consider forage NDF degradability and the unique “What If” option, allows the effects of proposals to be clearly seen and enables the nutritionist to decide the best feeding solution.

## **DietCheck Development**

The team at DietCheck continue to work hard developing the program to ensure that it takes account of the latest nutritional knowledge and herd management techniques. Many of the ideas for changes to the program come from our many users throughout the world. This feedback from existing DietCheck users ensures that we have a “wish list” of program enhancements to add to our ongoing nutritional developments.

The next major update to DietCheck is due to be released in September and, amongst other enhancements, will include:-

- A new definition of rumen bug growth and supply, to help clarify the sometimes confusing area of rumen protein metabolism.
- The addition of a model showing the effect of temperature and humidity on dairy cow performance.
- Improvements to the Compound reports.
- The ability to show the machine loading order in the TMR report.
- Enhancements in the way Farm Premixes are stored making it easier to “restore feed amounts” and make further changes to the premix.

## **DietCheck Maintenance & Support**

The ability for DietCheck staff to solve program problems directly using TeamViewer is proving to be extremely valuable both for individual users and the IT departments of larger companies. In addition to this type of support, membership of the maintenance and support scheme will ensure that you receive updates to the program free of charge.

If you are not already a member of the scheme please do not hesitate to call us to discuss the many advantages it offers.

**Don't forget DietCheck on the Web [www.dietcheck.co.uk](http://www.dietcheck.co.uk)**

*We hope you have found this edition of the Newsletter of interest – please keep visiting the DietCheck website for updates and technical information - if you have any questions, do not hesitate to contact us.*