

## 1-37 Surplus Management - Identifying a Surplus

Maintaining high quality pasture while feeding cows well during a period of feed surplus is one of the greatest skills of pasture management. Temporary periods of pasture surplus develop mainly in spring and if not managed ryegrass forms stems, flowers and seed heads, resulting in a low pasture quality (*Holmes et al., 2002*). If pastures are allowed to become stemmy, milk production will fall even though there appears to be plenty of pasture (a rapid fall from peak milk production is an indicator of poor pasture control). The benefits on summer production to maintaining a low residual pasture cover during the period of spring pasture surplus have been demonstrated in many trials.

This Farm Fact covers the first of three areas of surplus management:

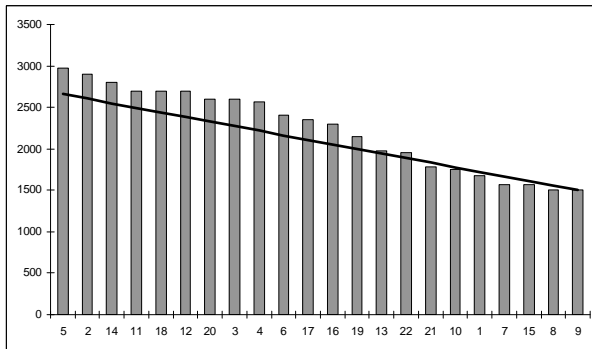
- How to identify a surplus
- Options to manage a surplus
- How much area to shut up

**Table 1 How to Identify a Surplus**

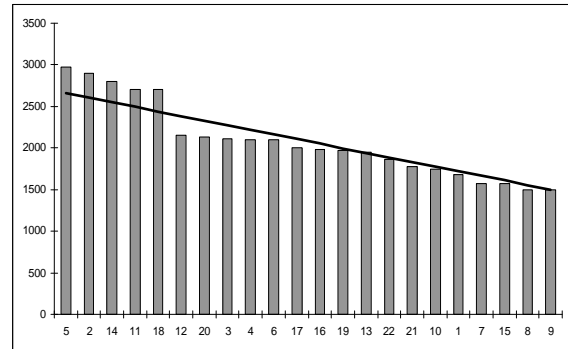
|                 | 10% Clumps   | Pre-grazing covers higher than target   | Pasture Growth rates greater than demand   | Average Pasture Growth Greater than target   | Feed Wedge Paddocks above the target line  |
|-----------------|--|---|--|--|--|
| <b>Pros</b>     | Quick & easy<br>Can be assessed daily  | Quick & easy<br>Can be assessed daily   | Quick as only need to monitor a few paddocks   | Whole farm assessment  | Whole farm assessment.<br>Shows where the feed is distributed<br>Can be used to predict feed surpluses & deficits 10-14 days in advance    |
| <b>Cons</b>     | Too late, once 10% clumps seen farm already in a surplus<br>Not predictive<br>May not be a genuine surplus just a few long paddocks with APC lower than that required to feed the cows | Need to know target pre-grazing<br>Not predictive<br>May not be a genuine surplus just a few long paddocks with average pasture cover (APC) lower than that required to feed the cows | Does not tell you where the feed surplus is or if APC is sufficient to feed the cows<br>Need to know feed demand | Accuracy dept on method used to assess APC<br>Time and discipline to do on a regular basis.<br>Needs to be done round length divided by 3 e.g. 21 day round need to be weekly farm walks | Time and discipline to do on a regular basis.<br>Needs to be done round length divided by 3 e.g. 21 day round need to be weekly farm walks |
| <b>Accuracy</b> | —————→   |   |  |  |  |
| <b>Effort</b>   | —————→   |   |  |  |  |

## Identifying a true surplus using the Feed Wedge approach

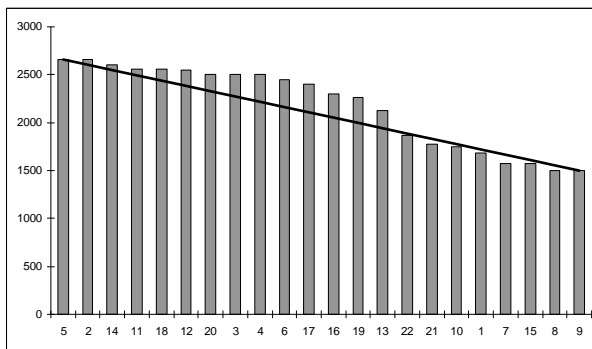
A farm in a “Classic” surplus



A farm in a “False” surplus



A farm in an “Early” surplus



### Target Line

To use the feed wedge or to observe when pre-grazing mass is above target requires calculating the pre-grazing target mass and having a post-grazing residual target.

### Grazing Residual Target

To have quality feed at the next grazing requires leaving a consistent, even grazing residual (few or no clumps). For ryegrass dominant pastures that are not pugged and are weed free this will be a residual of 7-8 clicks on the rising plate meter (RPM) or 1500 -1600 kg DM per ha on the standard winter equation (RPM height x 140 + 500).

### How to Calculate Target Pre-grazing Mass

$$(\text{Stocking rate} \times \text{Intake} \times \text{Rotation}) + \text{Optimum residual} = \text{Pre-grazing Cover}$$

$$(\text{___ cows/ha} \times \text{___ kgDM/cow} \times \text{___ days}) + \text{___ kg DM/ha} = \text{___ kgDM/ha}$$

E.g. (3.0 cows/ha x 18 kg DM/cow x 22 days) + 1500 kg DM/ha = 2700 kg DM/ha

## How to Calculate Average Pasture Cover (APC)

This is the mid point between the target grazing residual and the target pre-grazing cover on the feed wedge.

|  |                        |
|--|------------------------|
| Average of the target pre-grazing and optimum residual = Average Pasture Cover |                        |
| <b>(Target pre-grazing + Optimum residual)/2</b>                               | <b>= _____ kgDM/ha</b> |
| E.g. (2700 + 1500)/2   | = 2100 kg DM/ha APC    |

The following tables show how the pre-grazing mass varies depending on the stocking rate, cow intake and rotation length.

**Table 2 Cow Intake 16 kg DM/cow/day, 1500 kg DM/ha residual**

| Rotation Length (days) | Stocking Rate (cows/ha) |      |      |      |      |      |      |      |
|------------------------|-------------------------|------|------|------|------|------|------|------|
|                        | 2.25                    | 2.5  | 2.75 | 3.0  | 3.25 | 3.5  | 3.75 | 4.0  |
| 20                     | 2220                    | 2300 | 2380 | 2460 | 2540 | 2620 | 2700 | 2780 |
| 22                     | 2290                    | 2380 | 2470 | 2560 | 2640 | 2730 | 2820 | 2910 |
| 24                     | 2360                    | 2460 | 2560 | 2650 | 2750 | 2840 | 2940 | 3040 |
| 26                     | 2440                    | 2540 | 2640 | 2750 | 2850 | 2960 | 3060 | 3160 |

**Table 3 Cow Intake 18 kg DM/cow/day, 1500 kg DM/ha residual**

| Rotation Length (days) | Stocking Rate (cows/ha) |      |      |      |      |      |      |      |
|------------------------|-------------------------|------|------|------|------|------|------|------|
|                        | 2.25                    | 2.5  | 2.75 | 3.0  | 3.25 | 3.5  | 3.75 | 4.0  |
| 20                     | 2310                    | 2400 | 2490 | 2580 | 2670 | 2760 | 2850 | 2940 |
| 22                     | 2390                    | 2490 | 2590 | 2690 | 2790 | 2890 | 2990 | 3080 |
| 24                     | 2470                    | 2580 | 2690 | 2800 | 2900 | 3010 | 3120 | 3230 |
| 26                     | 2550                    | 2670 | 2790 | 2900 | 3020 | 3140 | 3260 | 3370 |

## References

Holmes, C.W. et al 2002. Milk Production from Pasture. Pages 104-105

Macdonald, K.A. 1997. Profitable Dairying. The Dairyman. Supplement, occasional publication. September 1997