Using Grass budgeting software

Grass budgeting software tools such as Agrinet, Kingswood or Pasture Base, are very useful in making the most benefit from the data generated from grass measuring. Such programmes can easily calculate the amount of grass available for grazing, help to accurately calculate the grass demand from various groups of stock and provide figures including daily grass growth (kg DM/ha/day), grass demand /ha (kg DM//day), grazing days ahead and average farm cover (kg DM). An example from the Agrinet software used by CAFRE is shown in Figure 1.

![Grass budgeting software example](image)

**Figure 1. CAFRE grass budgeting Information calculated by AgriNet from pasture measurements**

**Grass wedge**

From the data entered, these programmes are designed to produce a grass wedge. A grass wedge is a simple bar chart of the grass covers in each paddock, ordering the paddocks from the highest to lowest pasture cover, creating ‘the grazing wedge’. It is an easy to follow visual display of the quantity of grass available across the grazing platform, with the width of the bars in the chart indicating paddock area.

Below in Figure 2 is an example of a grass wedge created by the grass management software programme AgriNet. Each paddock is represented by a green bar, the width of the bar indicating paddock size. Paddock number is identified along the bottom x-axis of the graph and the vertical y-axis shows the pasture cover (kg DM/ha). The blue line is the grazing demand line and the numbers above the green bars are the number of days since the paddock was last grazed.
Alongside the grass wedge, the ‘data view’ tab allows the user to look at each paddock more carefully and attain precise details including paddock growth rate and paddock area etc as shown in Figure 3.

Figure 2. Grass wedge example taken from AgriNet

Figure 3. An example of the data view tab taken from AgriNet
Some grass management software programmes allow the impact of different decisions to be assessed on a 'what if' basis before they are carried out. For example if there is a surplus of grass, a paddock can be taken out for 'short term' or 'long term' silage.

If it is for long term (to tie in with a 1st or 2nd cut) the programme will adjust the stocking rate on the grazing platform, the daily demand /ha (kg DM/day) and the demand line accordingly. If short term is selected, it is assumed the paddock will be taken out for bales immediately and the paddock will be available for grazing again in the next rotation therefore not affecting the stocking rate of the grazing platform.

For example in Figure 4 below, the blue demand line shows that there is a surplus of grass on the grazing platform. We can see there is a surplus of 4134 kg DM/ha from the green text. As shown in the bar chart, paddock number 16 has the highest pre grazing cover and therefore should be the first paddock to remove to address the surplus. By right clicking on the green bar for paddock 16 the option box shown in Figure 4 will appear, to select when the paddock will be taken out for silage.

Predicted grass wedge from potential management actions
Grass software programmes also allow the user to view what the grass wedge would look like in the future, based on the predicted grass growth and grass demand. This can be a very helpful function, for example if it is known grass growth will decrease, if it is known that the grazing demand will increase, or if a small surplus exists but you are worried that removing it this week will leave you short next week. Figure 5 shows...
the original grass wedge with the predicted wedge being calculated for 7 days’ time, at a predicted grass growth of 50 kg DM/ha. Figure 6 shows the predicted grass wedge where we can see the surplus grass has decreased from 4134 kg DM in Figure 5, to 2113 kg DM in Figure 6.

Figure 5. Inputting predicted grass growth into original grass wedge
Additional features of grass budgeting software programs
Grass budgeting software programs usually offer a range of additional features alongside the calculation of grass budgeting information. Figure 7 shows the AgriNet software home page. This provides the option to record fertiliser applications, soil sampling results, spray applications and the sowing of grass seeds. This information will all feed into the reports which can be generated on a farm or paddock basis. The ‘paddock cards’ tab allows you to view each event which has happened within the paddock on a year by year basis, including each grass measurements, grazing’s, fertiliser applications etc. Farm reports allow total fertiliser application rates across the season to be monitored etc and provides comparisons between paddocks on the amount of grass grown between specific dates.
The length of the grazing season will be largely based on the success of the spring and autumn grazing rotations. Spring and autumn rotation plans are very useful tools to manage grass budgeting through these important periods of the season. Figure 8 shows an example of creating an autumn rotation plan on AgriNet. The software will calculate the target area to be grazed per day based on the information you provide. This includes the start date for the final grazing rotation, a housing date, a start and final target cover (kg DM/ha) and an interim date with a target % of how much should grazed by that point. The red line shown in the graph in Figure 8 is the target area to be grazed off and closed up per week. As paddocks are closed a green line will appear to show the actual area closed per week. Spring rotation plans will follow a similar layout.
Figure 8. Creating an autumn rotation planner on AgriNet