

Pasture residual in surplus or in the overdraft

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Productive pastures remain the key to positive margin over feed cost for many dairy businesses in the Subtropical Dairy region. Growing the pasture is one thing, but grazing management has a dramatic influence on pasture yield and returns. There is often a focus on how much feed we have on offer for the cows, but it is equally important to consider the amount of pasture left behind after grazing. Pasture residual has a major influence on pasture performance over the season.

After a grazing event a pasture residual of approximately 5cm is recommended. This is about 1300-1500 kg DM/ha for a ryegrass sward. At this level, very little leaf will be visible and only the stem remains. In the process of developing a new leaf the plant must draw on the energy reserves in the stem and perhaps roots if stem reserves are not adequate. Over 50% of the ryegrass plants' carbohydrate reserves are in the bottom 5cm of the stem. For this reason it is important to leave adequate residual for a full recovery and satisfactory yield in the next rotation.

If too little residual is left after grazing, less than about 5cm, the plant will be short of energy stores to regrow the first leaf. Grazing below 5cm reduces plant carbohydrate reserves by removing too much of the main storage organ, the stem. The problem of continual short residuals is a decrease of the energy storage reserves resulting in slower regrowth, less total production and reduced persistence of plants. The next place the plant draws on to produce the first leaf is the energy in the roots. Plants continually grazed below 5cm will have a smaller root mass. This will result in the plants pulling out easily and the smaller root area will reduce the plants ability to utilise moisture and nutrients, suppressing growth even further. Additionally plants with a low root mass may be more susceptible to pest and disease attack. Constantly grazing below 5cm reduces the population of desirable plants in the sward.

Continually leaving more than 5cm of residual behind after each grazing presents some different issues. Firstly if leaves are present after grazing they can generate energy from the sun, which increases growth rates which is positive, however, there are other ramifications. If there is an increasing residual after each grazing a thatch may form, creating a bulk of fibrous, stemmy material of lower nutritive quality than the leaf. When considering ryegrass there could be the occurrence of what is termed aerial tillering. From establishment ryegrass plants continue to develop tillers. Tillers are like another plant. To survive, tillers need to get their own roots into the soil. If aerial tillers develop as a result of an elevated growing point there is a great risk that their roots will not make contact with the soil before drying out or being trampled. If this eventuates the pasture has an increased potential of thinning out. With a thinning of the sward there is reduced dry matter yield and increased space for weeds to populate. In addition, the bulk of material could also harbour unwanted insects and plant pathogens. As we move into spring and warmer



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weather, high residuals could hasten the event of plants becoming reproductive. When grazed to 5cm, the reproductive stems are eaten, however, as pasture residuals increase the stems presented at grazing are quite lignified and unpalatable and the onset of seeding progresses quickly. Finally, there is the issue of how to manage a substantial residual if a decision is made to remove it later in the season, mechanically harvesting the stem maybe the only option. Further work is being conducted by DAF to understand the effect of increasing residual height on forage production and quality and the subsequent effect on dry matter intake.

Managing pastures to achieve optimum production is challenging yet very rewarding. Post-grazing residual affects many facets of pasture performance including the regrowth, quality and overall density. With purchased feeds being expensive, increasing quality pasture intake this winter and spring will help improve margin over feed cost. ■■

