**Grass Growth**

- Grass growth rates provides the constant challenge of maintaining grass quality.

- Grass can decrease in quality very quickly as growth rates soar.

- Reduced grass quality, less than 80% digestibility leads to lower milk proteins.

- Lower growth rates leads to inadequate amounts of grass available for grazing.

- Reduced grass amounts for grazing leads to lower intakes and lower milk proteins.

- To optimise milk composition and milk solid production the cows intake needs to be consistent.

**Milk Composition**

- Milk composition varies with breed, genetic potential within the breed and stage of lactation.

- Cow nutrition influences the ability of the cow to express her milk composition potential.

- The annual cycle of milk composition starts high, reduces in early lactation and increases thereafter.

- Both proteins and fats are high just after calving.

- Both proteins and fats bottom out at around 2 to 3 months into lactation as milk yield peaks.
• Both proteins and fats start to rise again as yield decreases as lactation progresses.

• If total energy intake is reduced at any stage during lactation milk proteins reduce.

• To produce high levels of milk protein herds need to be fed very well.

• Additional dietary protein intake has little effect on milk protein concentration.

• The diet needs to be very low in dietary protein quality and quantity to see a reduction in milk protein.

• Milk fat is influenced by the amount of fibre in the diet.

• Very leafy soft grass can reduce milk fat as the cow does not chew the cud and she gets acidic.

• Chewing the cud boosts saliva production which helps prevent acidosis and reduced diet intake.

• Providing long fibre in the form of hay or straw or baled silage will help milk fat concentration.

**Fertility**

• Low milk proteins also predict a pending poor fertility season.

• Thin cows with low milk proteins will have reduced fertility.
• If the cows ribs are clearly visible, then it is already too late.

• Fertility is a cycle, the damage was done too months earlier when the restriction was there.

• Cows need to be on a rising place of nutrition as they head towards the breeding season.

• Bad weather conditions reduce fertility as the energy gap is not filled.