

USE SCIENCE TO INCREASE YIELD

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Everyone wants to increase yield. Usually it means providing more of some type of input. Maybe more fertilizer, or irrigation, or some other thing that will make plants grow at a faster rate. But there is a simple way to make our pastures grow faster and produce greater yield. It involves simply understanding and manipulating a simple principle of plant physiology. That principle is that plants grow at the fastest rate when they have plenty of leaves to capture sunlight, and the leaves are relatively young so they are very efficient at the photosynthetic process.

Figure 1 illustrates the three phases of plant growth. In phase 1, the plant doesn't have much leaf area to capture sunlight. In order to grow leaves, it has to take stored energy from the roots and crown of the plant for the growth. It then moves into phase 2, when the plant has plenty of young, efficient leaves. During this phase, the plant produces plenty of energy for growth, as well as replace the stored energy used during phase 1. As the plant continues to grow, the leaves get older and less efficient at photosynthesis. The plant also produces a seedhead, which means it is trying to produce seed instead of leaves. This results in a decrease in the growth rate of the plant.

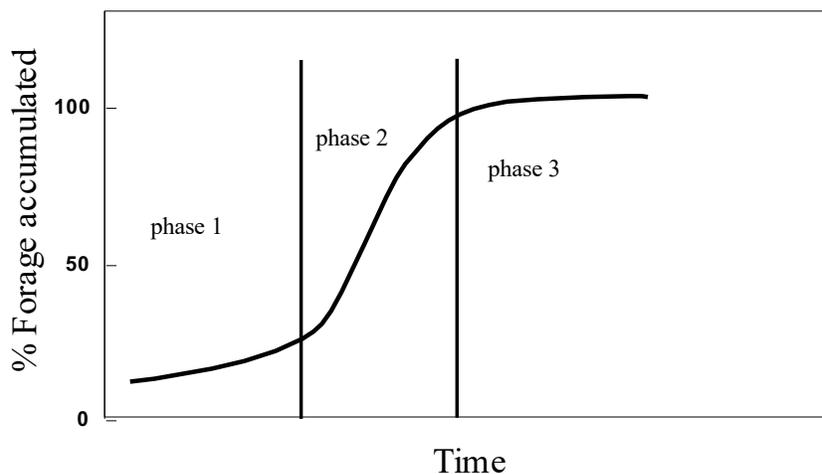


Figure 1. Three phases of plant growth

A simple way to increase the yield of a pasture is to concentrate on keeping your grasses in the phase 2 of plant growth. That means to make sure you leave enough leaf area so the plants can capture plenty of sunlight. But don't let the plants go to a reproductive state, meaning they are producing seedheads. Staying in phase 2 will improve yield, because that is the phase where the growth rate is the highest.

How do you accomplish that? You have to have some type of rotational grazing program, where you control where the animals graze and how long they stay in the paddock. If you find that the forage growth is getting ahead of you in the spring, then cut hay from some of the fields. If you

find forage growth is getting slow during the summer, you can do a better job preventing overgrazing.

There is no need to make rotational grazing extremely complicated. The principle is controlling plant growth through where the animals graze. This will ultimately improve yield, plant persistence, and the production of forage and beef on your farm.