Perennial forages are a renewable resource. They don’t require planting every year, but they grow with predictable annual cycles. With the basic understanding of how grasses grow (Fig. 10), knowledgeable manipulation of the grazing animal can enhance grass growth. Grazing without knowledge of grass growth could be compared to attempting artificial insemination without knowing the reproductive cycle of the cow.

1. Bud and carbohydrate management: Buds are formed during the season prior to winter dormancy. Carbohydrates are stored late in the growing season. Consequently, fall management is a very critical period and adequate time should be provided after grazing and before dormancy for carbohydrate accumulation and bud development.

2. Remaining leaf area management: Adequate remaining leaf area will minimize carbohydrate depletion. This will insure continued root growth and carbohydrate storage for winter. Remaining leaf material also enhances the microclimate for growth during the growing season and improves rain interception, insulation and snow capture.

3. Defoliation: Optimum grazing management avoids repeated, severe defoliation of a tiller without a recovery period (planned non-use). Fresh growth is highly palatable and livestock will graze selectively. Therefore, the duration of livestock occupation must be controlled to optimize plant and animal production. Repeated severe defoliation of desirable plants or areas in pasture can be reduced by increasing stocking density and reducing the duration of grazing.

**FIG. 10 How grasses grow.**
4. **Tiller management:** Timely canopy removal can be used to stimulate tilling (regrowth). This will be dependent on the species, environment and previous management.

5. **Livestock nutritional needs:**
   To optimize animal performance (gain/head) and pasture production (gain/acre), the duration of non-use is critical. Non-use periods should be long enough to allow the plant to recover from defoliation, but short enough to avoid plant maturity when pastures are used more than once per season. Successful grazing management must also consider the type of livestock and their nutritive needs. Producers must match the nutritive needs of their livestock and management goals for livestock performance with the seasonal quality of available forages.

6. **Grazing program:** Appropriate grazing management will be dependent on the individual operation. Controlled grazing programs allow stocking rates to be sustained at higher levels compared to continuous, season-long grazing because of improved harvest efficiency. Grazing distribution, season of grazing, and degree of use must all receive emphasis in the grazing program. On occasion, it may be necessary to intensively graze a pasture late in the season. If the grass has been properly managed in previous years, it will recover from this late season grazing; however, the same pasture should not be the last pasture grazed the following year.

**REMEMBER:** Successful livestock production cannot be accomplished by ignoring either plant or animal requirements. It will require several kinds of forages, several pastures and a grazing plan.