Let Growth Cycle Dictate Fertilization Cycle

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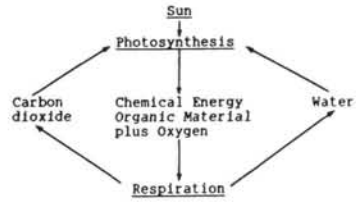
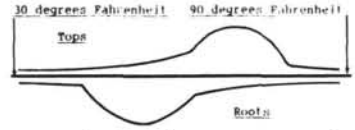
Dr. John Dunn has been studying growth cycles of various grasses as they relate to fertilization cycles during the year. Here he presents some relationships worthy of consideration. The example used is Kentucky bluegrass.

- Kentucky bluegrass has a rhizomatous growth habit.
- Fall days get shorter and soils cool at this time of year.
- More rhizomes, more shoots, plants emerge and produce more tillers at this time. White rhizomes form; a thickening process and a healing process within plant development takes place.
- With patience, these rhizomes will heal in summer thinning.
- Fall fertilization involving nitrogen makes leaves green, gets tillering started, as long as the fertilizer is adjusted to apply sufficient phosphorus and potassium.
- In the fall, use of vertical mowers to de-thatch will do the job well and any injury to grass plants will heal readily. At this time, the grass can be mown closer so as to form a tighter turf cover.
- The basic reaction involves:



- The net effect of these reactions in the fall will be increased root growth including rhizomes.
- Then, in early spring, tillering will start again following winter dormancy. Spring temperature influences growth:



cool=less tops, more roots
warm=more tops, less roots

- Spring mowing height is better at a higher level.
- High nitrogen in the spring makes less roots. The response can be drastic.
- Medium nitrogen causes less root development as temperatures increase.
- Low nitrogen causes less root development because foliar growth is affected at a time when higher temperatures increase respiration and decrease energy reserves.
- The result of this spring growth is often disease increases. Fertilizer applications based on turf responses at this time can be hazardous to the plants.
- The question is asked, "Why promote turf growth?" The answer includes:
  - recovery from injury;
  - replace lost nutrients;
  - maintain density;
  - encourage early growth.

Note: green color is not a justifiable reason. The two more important reasons are replacement of nutrients removed in clipping and lost in leaching.