

## Plants Need Sunlight

### AGRI-VIEWS

by Chuck Otte, Geary County Extension Agent

Plants are slaves to chlorophyll. Okay, that might be a bit harsh. Plants are dependent on chlorophyll. Chlorophyll is what makes plants green. It is a complex molecule and is essentially where photosynthesis happens. Well, it actually occurs in the chloroplasts and chlorophyll is in the chloroplasts so maybe we should say that plants are slaves to photosynthesis. Regardless, plants need light to allow photosynthesis to happen to make food so the plant can grow, bloom, and make seed or fruit. About now you may be saying to yourself, "Yes, I know that, so what?" Just stay with me a little bit longer here and I'll tell you "so what."

Not all plants need the same amount of light. If you go deep into a thick evergreen forest, the forest floor is usually barren, or very nearly barren. The amount of light that gets down to the floor is insufficient for even the simplest plants to grow. If you walk into a deciduous forest, like some of the timber we have around here, you often will find plants growing on the forest floor. However, if you make trips into the forest regularly throughout the spring you will find that the greenup starts on the forest floor and works its way up.

The plants at the bottom of the forest floor have to exist on very little light or capture the light early in the season before the tallest trees leaf over and block the direct sun. The plants low on the floor bloom early and get their seed produced very early so that once the canopy closes, they can just maintain themselves through the rest of the season. Some of the plants may even be short lived annual plants that produce seed and die before the end of June.

Certain plants, like many of the grasses, have the potential to take very high levels of light energy (we call this full sun) and convert it into food for the growing plant. Our warm season grasses are like that as are some of our food grasses such as corn and sorghum. Cereal grains that do better in cooler weather, like wheat, oats and, most importantly, barley, prefer cooler weather and can get by on lower light levels. To produce a lot of grain or a lot of plant mass requires a lot of solar energy.

Now let's segue to your yard. Highly prolific blooming flowers like petunias, zinnias or marigolds need full sun. If they are in full or partial shade, they just don't do very well at all! If you want lilac bushes to bloom prolifically, they need to be in full sun. If you want a garden to be productive, it needs to be in full sun. If you put gardens or flowering annuals in partial to full shade, the plants aren't very thrifty, they have few blossoms and fruit or seed production is very nominal.

Grasses are plants of the sunshine as well. Warm season grasses like zoysia, buffalograss and Bermudagrass have to have full sunshine. Bermuda will invade parts of a lawn that are only in full sun. Fescue and bluegrass can get by with partial shade but they still need some direct sunlight. The grass will tell you what the limits are. Plant new fescue under a tree in the fall. As the following spring and summer progress, and you notice that the grass is slowly thinning out to just scattered clumps, it is telling you that there isn't enough sunshine.

We do have options and those options are called foliage plants. Plants like vinca minor, English ivy, or the hostas, will grow pretty well even in fairly dense shade. If you can't grow grass, you can probably grow some of these.

I answer a lot of plant questions from homeowners, especially regarding turf. More often than not, the problem is a lack of sunshine. In plants, sunshine is intercepted by the chloroplasts and within the chloroplasts the miracle of photosynthesis occurs literally creating new food and energy. And that is why plants are slaves to the sunlight!