

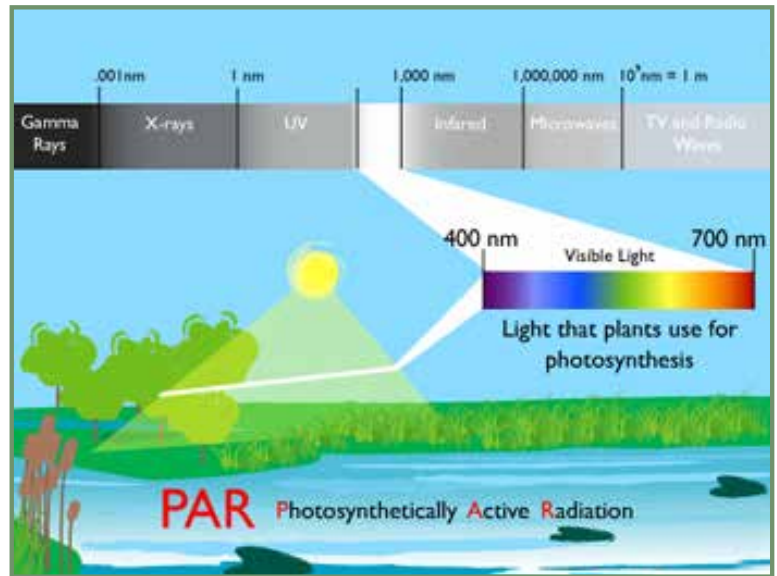
THE SCIENCE BEHIND

What is PAR® SG?

Some think it just a simple colorant to enhance the aesthetic color of the playing surface. Others think **PAR® SG** relates to a golf acronym. The letters "**PAR**" actually stand for "Photosynthetically Active Radiation."

What is PAR on a Plant Physiology Level?

PAR is the amount of light available for photosynthesis. The chlorophyll within the plant utilizes available light in the 400 to 700 nanometer wavelength range, see illustration. Several external factors can reduce the amount of **PAR** available to plants. This may include anything that reduces the amount or quality of sunlight. Seasonal changes are primarily the largest component, by affecting light angle and the photoperiod interval. Some secondary regulators may be cloud cover, shading by trees, and buildings. Also, air pollution has also been documented to affect **PAR** by filtering out the amount of sunlight that can reach plants.



How is PAR® SG Useful and Important?

By applying consistent applications of Harrell's **PAR® SG**, you are in essence reducing the severity of harmful UV and infrared wavelengths. So what **PAR® SG** is providing the plant is a selective light filter by reducing UV-b and UV-a, and allowing the transmission of blue to red wavelengths into the plant (Snyder, 2011). These blue to red wavelengths are the key wavelengths used by the plant for photosynthesis. Ultimately, by providing the correct light spectrum to the plant and reducing UV-b and UV-A, you achieve increased turf quality and color.

How does PAR® SG Aid in Plant Health?

Many turf managers remove **PAR® SG** applications from their spray rotation as summer ends. When entering into the fall and winter months, the light quality severely diminishes. By adding **PAR® SG** to your overall nutritional program, you are potentially providing the plant greater opportunities to build root mass and achieve maximum plant health. Ultimately, this may include increased carbohydrate production to help overcome any abiotic stresses the winter months may present. Depending upon color intensity and frequency of spray interval, *apply **PAR® SG** at 8 to 16 oz. per acre.*

References:

Snyder, R. 2011. Investigation of UV Blocking Pigments and Known UV Protectants. PHD Laboratory, Davie, FL.

