



2017 Philippine Golf Course Management Conference



Dealing With Shade & Solving Shade Related Issues

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Excerpt from article written by;
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“Most plants do not grow well in a shade environment, this is especially true for turf. All plants require sunlight for photosynthesis to make the energy and compounds they need to sustain life”.

“Morning sun versus afternoon sun. The most critical sun for healthy turf is morning sun. If turf grass doesn't receive morning sun, it will not do well.”

“The opposite is also true; the turf that receives the morning sun but not the afternoon sun will do just fine”.



Exert from article posted in
Viridescent the Asian Turfgrass Center Blog

“The most important time for full sunlight to reach a turfgrass surface corresponds to the optimum temperatures for photosynthesis for that species. More specifically, the longer the duration of time at which the PPRD on the turf surface is near the maximum the grass can use, while at the same time the air temperature is close to an optimum for photosynthesis, will optimize turf performance.”

“My hypothesis would predict that morning sun, when temperatures are cool, would be better for cool-season grass in the heat of the summer, when afternoon temperatures are better for photorespiration than for photosynthesis. My hypothesis also predicts that morning sun is less important for warm-season grass in hot weather because it is the afternoon sun combined with high temperatures that produces the maximum carbohydrates for those species.”



Rankings



Rankings of popular tropical turf grasses, from highest to lowest, by shade tolerance, salt tolerance, acid tolerance, heat and cold tolerance

Intervals between successive rankings are not constant

SHADE	SALT	ACID	HEAT	COLD
St. Augustine	Seashore Paspalum	Carpet Grass	Zoysia	Zoysia
Zoysia	Cynodon	Centipede	Cynodon	Cyndon
Centipede	Zoysia	Cynodon	Carpet Grass	Seashore Paspalum
Carpet Grass	St. Augustine	Seashore Paspalum	Seashore Paspalum	Bahia Grass
Bahia Grass	Bahia Grass	Zoysia	Centipede	Centipede
Seashore Paspalum	Carpet Grass	St. Augustine	St. Augustine	Carpet Grass
Cyndon	Centipede	Bahia Grass	Bahia Grass	St. Augustine

Taken from:
 Fundamentals Tropical Turf Management
 G. Wiecko



Molasses

via Yahoo Search



Molasses is not just one chemical compound, but many. The main content is sugar (sucrose) ($C_{12}H_{22}O_{11}$). The rest is complex and will vary depending if the molasses is from sugar beets, cane sugar (the two most common sources), or other.

Some of the minerals found in molasses are potassium, sodium, calcium and magnesium. **BLACK STRAP MOASSES IS BETTER**



MOLASSES



Ian MacMillan

Photosynthesis is a complex series of chemical reactions involving a transition in forms of energy. The process uses light energy to make food and is a process by which plants make organic compounds from simple inorganic compounds using energy from the sun. End result of these many chemical reactions is a hexose sugar: **carbohydrates**



MOLASSES



Carbohydrates have three main uses:

- Drive all the processes that result in increased growth
- Energy storage, for use when the grass cannot photosynthesize, for example under environmental stress or excessive use
- Feeding soil microbes by excretion through the plant leaf and roots

It can therefore be concluded that healthy growth is not possible without photosynthesis and carbohydrate production. The rate of natural photosynthesis is affected by:

- Light: limited light, often found in modern stadia and golf courses, slows the rate of photosynthesis



Thank You!