

# Time-Lapse Photography and Sunlight Penetration

by **ROBERT A. BRAME**

Agronomist, Mid-Atlantic Region, USGA Green Section

**W**E ALL QUICKLY acknowledge that trees play an important role on many golf courses. Trees can contribute to aesthetic appeal and are often important in hole design and overall course playability. However, trees are optional to the game of golf; grass is not.

While trees are valued and important to the game, they should be kept in their place. When trees interfere with the growth of strong, healthy turf, corrective action must be taken. Selective branch thinning or tree removal not only will enhance the growth of grass in many situations, it also will encourage any remaining trees to develop into healthier, more attractive specimens. Proper tree management is vitally important to quality turfgrass management.

Tree management involves more than simply cutting down trees. The selective removal of dead and damaged limbs is also part of the package. At times, root pruning is needed to prevent trees from robbing moisture and nutrients from nearby grass plants. The planting of new or replacement trees is sometimes needed. When tree removal is necessary, it should be done on a selective basis, rather than indiscriminately. Tree management is an evolving, ongoing process.

A major problem with tree management programs lies in convincing course officials of the need. Far too often, trees become sacred and untouchable. This makes the golf course superintendent's job difficult and at times impossible. Regardless of how qualified the turf manager may be, it is simply impossible to grow healthy grass without adequate sunlight. Air movement is also important to the growth of healthy turf, and trees often restrict these two vital components of grass growth. As a rule of thumb, a grass plant needs eight hours of direct sunlight each day, especially under golf course play conditions. How can this need be clearly demonstrated to those who do not manage golf course turf?

Terry Laurent, golf course superintendent at Saucon Valley Country Club, in Bethlehem, Pennsylvania, came up with a very good strategy to demonstrate how trees can adversely affect sunlight penetration and proper turf growth. The 12th green on the Grace Course at Saucon Valley has had a history of being troublesome. In the past, trees around this green have blocked both sunlight penetration and air movement. In July 1991, Terry decided to document this problem. One of his assistants was sent out with Polaroid in hand at hourly intervals, beginning at 7:00 a.m. and continuing

through to 5:00 p.m. to take a series of pictures from the same spot and angle. By the end of the day, 11 pictures had been shot and labeled, clearly showing the shade and sunlight interaction on this green throughout the day.

This time-lapse photography technique clearly demonstrated the need for additional sunlight penetration. The photos further demonstrated that the weakest areas on the green were also those areas receiving the least amount of sunlight. As a matter of fact, Terry was able to document that some portions of this green received no more than five hours of sunlight, much less than the eight-hour minimum required for healthy grass growth.

This simple strategy has allowed Terry to sell course officials on the need to take positive action. Some tree and limb removal has already been completed. Plans also are being made to install an air circulation fan for the 1992 season. Terry has put the old adage "a picture is worth a thousand words" to work for him. The idea allowed him to communicate more efficiently and effectively. Knowing the answers in life is not enough; we must be able to communicate the answers to those with the questions. Give time-lapse photography a try on your course. It worked for Saucon Valley, and it can work for you.

*A time-lapse sequence, illustrating the shade/sunlight interaction as the day progresses.*



#12, 8:00 a.m., 7-24-91

#12, 9:00 a.m., 7-24-91

#12, 10:00 a.m., 7-24-91

#12, 11:00 a.m., 7-24-91