

## SOD INDUSTRY SECTION

### Management Factors Affecting Sod Heating

The production of turfgrass to be sold for sod has become one of the fastest growing areas of agricultural production in Maryland, says an agronomist from the University of Maryland. Production methods have relied upon a combination of trial and error and research data on turfgrass for other uses.

"Until recently research in the area of sod production has been negligible," says Charles H. Darrah.

He conducted a study to increase the level of knowledge in the area of quality sod production. Specifically the research was concerned with post-harvest injury of turfgrass sod.

The affect of sod heating after harvest has been under investigation at the University of Maryland since the summer of 1969. Pre-harvest treatments have included different mowing heights, nitrogen rates, clipping removal, cutting depths and time of day of harvest. Each of these treatments has been evaluated

for its effects on sod heating and regrowth.

Small pads of Kentucky bluegrass-red fescue sod, 18 inches by 18 inches, were harvested and stacked in insulated boxes, where they were allowed to heat for three days, reports Darrah. Temperatures were measured and recorded in two hour intervals by means of thermocouples placed in the center of the stack. At the termination of the experiment, eight inch diameter plugs were cut from the center pads.

"Plugs were then transplanted into pots filled with a sand-soil-peat mixture and allowed to grow for 20 days," says the agronomist. "At this time root and top regrowth measurements were made."

Results indicate that mowing at one inch and removing the clippings are the most effective ways to reduce sod heating injury, he reports. Close cutting and clipping removal reduced the temperature build-up

and respiration rate. Top regrowth was significantly increased and root production was equal to or better than sod mowed at either two or three inches.

The researcher notes that high rates of nitrogen (2 lbs/1000) have also been shown to be detrimental to sod recovery. The rate of heating and final temperature of high nitrogen sod were much higher than sod maintained at low nitrogen levels.

Time of day at which the sod is harvested also affects temperature buildup in the stack. Temperatures between a 6 a.m. and a 3 p.m. harvest differed by as much as 10 degrees F and 101 degrees F, respectively, after only 24 hours of heating.

Darrah concludes that experiments involving cutting depth have shown one-half to three-fourths inches give optimum results. Although a no soil treatment gave root regrowth equal to that of the one-half and three-fourths inch depth, its heating rate was excessive. The average was 8-10 degrees F higher than the three-fourths inch cut. Although one inch depth of cut showed less heating, root initiation was exceptionally slow at this thickness.

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