Canopy Photosynthesis, Respiration, Growth, and Partitioning to Plant Components During Regrowth of Bahiagrass. (C02-rymph120315-Oral)

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Abstract:

Plant growth and photosynthesis (PN) were evaluated on established bahiagrass (Paspalum notatum) for two 8-week harvest periods (P1, 20 July - 12 Sep 2001; P2, 14 Sep - 7 Oct 2001). Sod cores (0.20 m X 0.35 m X 0.15 m) were dug weekly, and separated into leaf blade (cut at ligule, no sheath), stem, rhizome, and root. Canopy PN was measured at mid-day with a mobile gas analysis system, and leaf-to-canopy equations solved for the corresponding light-saturated leaf PN. P1 was characterized by a higher ratio of vegetative to root+storage tissue. There was an increase in leaf mass (3015 kg ha-1) with a small decrease in stem mass (-456 kg ha-1). Rhizome mass increased slightly (612 kg ha-1) while root mass decreased (-8010 kg ha-1). P2 exhibited a marked shift in partitioning to storage with a larger increase in rhizome mass (2350 kg ha-1) and a smaller decrease in root mass (-344 kg ha-1). Vegetative growth was less in P2 with lower leaf growth (2511 kg ha-1) and similar stem loss (-1396 kg ha-1). Green area index (leaf+stem) was greater in P1 than P2 (2.48 vs. 1.03 m2 tissue m-2 land). Solved leaf PN did not differ by period (P1 vs. P2: 44.22 vs. 39.86 umol CO2 umol-1 PAR).

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Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 8:30 am

Keywords:

Bahiagrass, Growth, Partitioning, Photosynthesis