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## MANAGING COASTAL BERMUDAGRASS IN AUTUMN FOR ANNUAL RYEGRASS PRODUCTION

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**Background.** Overseeding warm-season perennial grasses such as 'Coastal' bermudagrass with ryegrass and clovers in autumn is a common practice in East Texas. Annual ryegrass provides earlier production of high quality forage and spring weed control. Cool-season annual forages such as ryegrass and clovers are seldom planted on a well-prepared seedbed. Heavy disking of the sloping East Texas soils would result in erosion of the top soil and sedimentation of ponds, creeks, rivers, and lakes. This would harm water quality and aquatic habitat.

Slow early growth is the main disadvantage of overseeding ryegrass compared to drilling in a well prepared seedbed. Reduced early growth is due to a 3- to 6-week later planting date than on prepared seedbed, placing the seed on or near the soil surface, and competition for light, moisture, and nutrients from the grass sod. Various autumn sod management practices were evaluated for improved early ryegrass production in a Coastal bermudagrass sod.

**Research Findings.** 'TAM 90' ryegrass was overseeded on a Coastal bermudagrass hay meadow at 25 lb/ac on 22 October 1991. Sod treatments were application of 0, 50, or 100 lb N/ac applied 6 weeks before planting, spraying Roundup (1 qt/ac), disking lightly, or untreated control, and mowing the bermudagrass sod to a 1- or 4-in. height before planting.

Applying N fertilizer 6 weeks before planting did not influence annual ryegrass stands or production and is not reported. Cutting bermudagrass to a 1-in. height allowed the most light to reach the soil surface which is important for ryegrass establishment (Table 1). Applying Roundup or disking further improved light penetration over the control. Annual ryegrass seedling density was always better in the 1-in. than 4-in. bermudagrass sod (Table 2). Within each sod height, disking had the best seedling density followed by Roundup and then the untreated control. Effects of sod treatments on early ryegrass production were small (Table 3). Yields at the two sod heights were about the same in the control but 17 and 9% higher at the 1-in. height in the disk and Roundup treatments, respectively. Disking or using Roundup resulted in a slight yield increase. Total ryegrass production was best when the low sod height was disked and the lowest in the untreated tall sod height (Table 4).

**Application.** Annual ryegrass is not as sensitive as clovers to warm-season grass competition in autumn. However, planting annual ryegrass in a short sod disked lightly, will increase early forage production about 25% over planting ryegrass in an undisturbed grass sod about 4-in. tall.

Table 1. Percentage of sunlight reaching the soil surface in autumn sod treated Coastal bermudagrass.

Sod height	Control	Disk	Roundup
in.	-----% light-----		
1	74	82	88
4	35	60	58

Table 2. Influence of autumn sod treatments on annual ryegrass seedling density.

Sod height	Control	Disk	Roundup
in.	-----seedlings/16 in. <sup>2</sup> -----		
1	6.8	7.5	6.9
4	5.6	6.6	6.4

Table 3. Influence of autumn sod treatments on early annual ryegrass forage production.

Sod height	Control	Disk	Roundup
in.	-----dry matter (lb/ac)-----		
1	875	1079	1025
4	841	926	939

Table 4. Influence of autumn sod treatments on total annual ryegrass forage production.

Sod height	Control	Disk	Roundup
in.	-----dry matter (lb/ac)-----		
1	5029	5449	5156
4	4732	5131	4955