

# Seeding Depth Critical For Pasture, Hay Plantings

Establishing new stands of forage for hay or grazing requires precise planning. Ideally, producers should plan well ahead (six months to a year) of the planting season. This allows time to adjust soil pH and fertility levels and to control weeds. All of this planning and preparation could be wasted if the farmer ignores the basic seeding principles, such as setting a proper planting depth.

Many forages have small seeds that require shallow planting for rapid and maximum emergence.

We conducted trials at Rocksprings to demonstrate the effect of planting depth on different grasses and Puna chicory. Seeds (100 in each plot) were planted by hand to ensure precise placement. Seeding depths were 0.4, 1.2, and 2.4 inches

on a Hagerstown silt loam soil. The number of emerged seedlings were counted at 35 days after planting. There was adequate rainfall during the trial to ensure good germination.

Percentage emergence of each forage is in Table 1. Seedling emergence was greatest and most rapid at the 0.4-inch depth. Perennial ryegrass had relatively good emergence from all depths. Although a number of seedlings emerged from the deep-planting depths, these seedlings were less vigorous than those from shallow planting depths.

Detailed experiments in the greenhouse showed that seedlings that emerged from deeper planting depths had fewer leaves, roots, and tillers than those planted at shallow depths (Table 2). Although a two-inch planting depth would be an ex-

treme occurrence, improperly set planters and poor seedbed prepara-

tion can easily result in planting depths of 1 inch.

Seeding Depth (inches)	Perennial Ryegrass <sup>a</sup>	Orchardgrass <sup>b</sup>	Matua Prairiegrass	Puna chicory
0.4	76	52	41	64
1.2	67	30	39	37
2.4	50	20	21	24

<sup>a</sup>Average of four varieties. <sup>b</sup>Average of two varieties

Seeding Depth	Puna chicory			Dawn orchardgrass		
	Leaf area <sup>a</sup>	Days to emergence	Root number	Leaf area	Days to emergence	Tillers per plant
0.4	5.0	5	35	1.2	8	2
1.2	4.0	6	21	1.0	8	1.8
2.4	2.5	10	14	0.8	10	1.3

<sup>a</sup>Square inches

Producers should remember the basics in planting forages: plan ahead, ensure a firm seedbed for good seed-to-soil contact, plant at the proper depth, and use recom-

mended seeding rates. Consult the Penn State Agronomy Guide (<http://AgGuide.agronomy.psu.edu/>) for more planting method and seeding rate recommendations.

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