

PLANTING NATIVE GRASSES USING PURE LIVE SEED METHOD

by

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Warm season natives such as big bluestem, eastern gama grass, indiagrass, and switchgrass are found in isolated areas, road ditches, and some fields in Tennessee. Under proper management, these grasses can provide high quality summer forage. In recent years, Mississippi State University has conducted research on switchgrass yield and quality as well as grazing trials. Hay yields in excess of 7 tons/acre and animal gains of 1.5 lbs./day in late summer without supplements have been documented. As results like these are publicized, producers will begin to make requests on these native grasses.

Seeding rates for establishing native grasses are different than standard seeding rates of other species such as fescue, clover, and alfalfa. Native grass seeding rates are planted on a pure live seed (PLS) basis. Seeding rates are listed below for native grasses.

Big Bluestem - Drill 10 lbs./ac. pure live seed (PLS) or broadcast 12-14 lbs./acre.

Eastern Gamagrass - Drill 12 lbs./acre PLS.

Indiagrass - Drill 10 lbs./ac. PLS or broadcast 12-14 lbs./acre PLS.

Switchgrass - Drill 8 lbs./acre PLS or broadcast 12 lbs./acre PLS.

To help explain PLS planting rates, consider the following seed analysis tag:

Commercial Company Name:

Kind: Alamo Switch Grass
 Lot: SSG 1-94
 Test Date: 12/94
 Origin: MO
 Net Weight 44 (lbs. PLS)
 Purity: 99.98%
 Other Crop: 0.1%
 Inert: 0.01%

Weed Seed: 0.00
 Bulk Wt.: 50 lbs.
 MO Permit 459
 Noxious Weed Seed: 0
 Germination: 88.00%
 Hard Seed: 5.00%
 Dormant Seed: 5.00%

Pure live seed is an indication of seed quality. Using the tag analysis, PLS is determined by multiplying percent purity by percent germination and dividing by 100 (99.98 x 88 divided 100 = 87.98 percent). If the recommended seeding rate is 12 lbs./acre PLS, and you wish to calculate actual bulk amount needed per acre, divide 12 by 87.98 and multiply by 100. It will take 13.6 lbs. of bulk seed from this lot to plant 12 lbs./acre PLS.

A helpful reference for determining the number of bulk lbs. needed to plant a lot of seed with a specified percent purity and percent germination is shown on the attached chart. Information on the chart is in 5 percent gradations, and seed analyses seldom are presented as whole numbers. To calculate, use whole numbers to the nearest increment of 5. Using the tag analysis for percent purity and percent germination, calculate the number of bulk lbs. needed to plant 12 lbs./acre PLS. Find the nearest whole number to 99.98 percent in the percent purity column, which is 100 percent and 88 percent in the percent germination column, which is 90 percent. At the point of intersection is found the number 1.2. This means for every 1 lb. of PLS desired, 1.2 bulk lbs. of seed must be planted. Using the seeding rate of 12 lbs./acre PLS, multiply 12 times 1.2. Using this method, it would take 14.4 bulk lbs. to plant 12 PLS/acre.

Native grass seed may also be sold on a PLS basis. To calculate the actual cost/lb. of PLS, consider the following example:

Big bluestem is sold at \$4.50/lb., and this particular seed lot has a purity of 99.5 percent and germination of 90 percent. To determine the actual cost/lb. of PLS, you must first calculate PLS:

$$\frac{99.5 \times 90}{100} = 89.55 \text{ percent PLS}$$

Calculate the actual cost/lb. of PLS:

$$\frac{\$4.50 \times 100}{90} = \$5.00$$

The price per lb. of PLS and not the bulk seed price determines the best buy. Those who purchase native grass seed on a PLS basis for the first time may be concerned because the price/PLS lb. is more than the bulk seed price. The cost of the seed that will grow is no greater and in some cases may be less than that offered at a low bulk seed rate price. Also, keep in mind that PLS planting rates are based on the amount of live seed required to produce the desired stand.

Bulk Pounds of Grass Seed Required to Plant One Pound of Pure Live Seed

Germination

Purity	100	95	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10
100	1.0	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.7	1.9	2.0	2.3	2.5	2.9	3.4	4.0	5.0	6.7	10.0
95	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.0	2.2	2.4	2.7	3.1	3.6	4.3	5.3	7.1	10.6
90	1.2	1.2	1.3	1.4	1.4	1.5	1.6	1.8	1.9	2.1	2.3	2.5	2.8	3.2	3.8	4.5	5.6	7.5	11.2
85	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.9	2.0	2.2	2.4	2.7	3.0	3.4	4.0	4.8	5.9	7.9	11.8
80	1.3	1.4	1.4	1.5	1.6	1.7	1.8	2.0	2.1	2.3	2.5	2.8	3.2	3.6	4.2	5.0	6.3	8.4	12.5
75	1.4	1.5	1.5	1.6	1.7	1.8	2.0	2.1	2.3	2.5	2.7	3.0	3.4	3.9	4.5	5.4	6.7	8.9	13.4
70	1.5	1.6	1.6	1.7	1.8	2.0	2.1	2.2	2.4	2.6	2.9	3.2	3.6	4.1	4.8	5.8	7.2	9.6	14.3
65	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.4	2.6	2.8	3.1	3.4	3.9	4.4	5.2	6.2	7.7	10.3	15.4
60	1.7	1.8	1.9	2.0	2.1	2.2	2.4	2.6	2.8	3.1	3.4	3.8	4.2	4.8	5.6	6.7	8.4	11.2	16.7
55	1.9	2.0	2.1	2.2	2.3	2.5	2.6	2.8	3.1	3.4	3.7	4.1	4.6	5.2	6.1	7.3	9.1	12.2	18.2
50	2.0	2.2	2.3	2.4	2.5	2.7	2.9	3.1	3.4	3.7	4.0	4.5	5.0	5.8	6.7	8.0	10.0	13.4	20.0
45	2.3	2.4	2.5	2.7	2.8	3.0	3.2	3.5	3.8	4.1	4.5	5.0	5.6	6.4	7.5	8.9	11.2	14.9	22.3
40	2.5	2.7	2.8	3.0	3.2	3.4	3.6	3.9	4.2	4.6	5.0	5.6	6.3	7.2	8.4	10.0	12.5	16.7	25.0
35	2.9	3.1	3.2	3.4	3.6	3.9	4.1	4.4	4.8	5.7	5.8	6.4	7.2	8.2	9.6	11.5	14.3	19.1	28.6
30	3.4	3.6	3.8	4.0	4.2	4.5	4.8	5.2	5.6	6.1	6.7	7.5	8.4	9.6	11.2	13.4	16.7	22.3	33.4
25	4.0	4.3	4.5	4.8	5.0	5.4	5.8	6.2	6.7	7.3	8.0	8.9	10.0	11.5	13.4	16.0	20.0	26.7	40.0
20	5.0	5.3	5.6	5.9	6.3	6.7	7.2	7.7	8.4	9.1	10.0	11.2	12.5	14.3	16.7	20.0	25.0	33.4	50.0
15	6.7	7.1	7.5	7.9	8.4	8.9	9.6	10.3	11.2	12.2	13.4	14.9	16.7	19.1	22.3	26.7	33.4	44.5	66.7
10	10.0	10.6	11.2	11.8	12.5	13.4	14.3	15.4	16.7	18.2	20.0	22.3	25.0	28.6	33.4	40.0	50.0	66.7	100.0

