

Guidelines for Establishing Eastern Gamagrass

Sites: Any lowland, subirrigated, or irrigated location that is not alkaline. To achieve the maximum productive capacity of this species, plant only on the suggested sites or irrigate.

Seed Source: There are no commercial variety releases of this species, therefore, there is no certification process for commercial eastern gamagrass. Since there is great variability in the growth habits and production potential of the species, producers should be encouraged to learn as much as possible about their seed source to increase the opportunity that it will meet their expectations.

Seedbed: Clean tilled or dead standing mulch.

Planter: Corn row planter.

Row Spacing: Three-foot rows for a solid stand, or
Five-foot rows for cultivation (also best for hay harvest),

Many of the plants will have a base at least two feet wide after three years. This leaves only two to three feet between rows to cultivate. Cultivation will stimulate growth, incorporate phosphate fertilizer, control competition, and maintain an open path for haying equipment. Haying equipment traveling over the huge plant bases cannot do a good job of uniformly cutting the grass at the right height. It is also hard on equipment and operators.

Seeding Rate: As yet, germination tests are not a dependable guide as to plant establishment. We can depend on an analysis that tells the number of seed joints in a pound of planting material and the percent fill (of fully developed caryopses) in the joints. One times the other tells us the number of full caryopses (or potentially live seeds) in a pound of seed material.

This factor times 40 percent (assumed germination) gives the potential live plants per pound (also the number of feet of row to plant to average one live plant per foot of row).

To find the seeding rate: Divide the feet of row in one acre by the number of potential live plants per pound to get pounds/acre.

Example: $43,560 \div 3 = 14,520$ (number of feet of row with a 3-foot spacing).
 $43,560 \div 5 = 8,712$ (number of feet of row with a 5-foot spacing).

7,870 joints/pound of seed material
64 percent fill

$7,870 \times .64 = 5,037$ (number of full caryopses in 1 pound of seed material)

$5,037 \times .40 = 2,015$ (potential live plants in 1 pound of seed material)

$14,520 \div 2,015 = 7.2$ pounds/acre for a 3-foot row spacing.

$8,712 \div 2,015 = 4.3$ pounds/acre for a 5-foot row spacing.

These recommendations should be considered minimum seeding rates.

Planting Times:

1. Fall plant (November 1 thru December 31) and expect three years to get a full stand. From 10 to 60 percent will come up the first year.
2. Pre-Chill — Use on seed sources from Oklahoma and south — Not on Kansas sources. Pre-chill the seed 8 to 12 weeks and plant April 15 to May 15. To pre-chill, wet the seed 8 hours in a solution of 1 part thiram to 10 parts water, then hold the seed at a controlled temperature of 33 to 40 degrees F. in layers of not over 4 inches thick. Thiram controls mold and fungi.

Planting Depth: One inch.

Although researchers have successfully utilized chemical seedbeds, no preemergent herbicides are approved for this use in Kansas. The best alternative is a relatively weed free seedbed, plant in rows, and cultivate to control most competition.

After the seedling stand is acceptable, apply 30 to 50 pounds of nitrogen/acre to promote rapid growth and development.

Stand Management:

Control cool season grasses and annual broad-leafed weeds by burning March 1 to 15, in southern Kansas, or cultivate if in rows. 2,4D may be used to control excessive weed growth.

Obtain a soil test for fertilizer availability. Apply fertilizer March 15 to April 15. The following per acre rates of available nutrients are suggested for the three levels of management.

	<u>N</u>	<u>P</u>	<u>K</u>
Dryland or Subirrigated or Irrigated	90 -	36 -	9
Subirrigated or Irrigated	108 -	72 -	18
Irrigated	250 -	100 -	25

For maximum hay yield: Cut eight inches high on June 1 to 10, July 1 to 10, and August 1 to 10.

For seed and hay: Harvest seed in July; cut hay at eight inches immediately following seed harvest.

Do not cut after August 10 to allow adequate regrowth to replenish root reserves. Leave the regrowth for winter protection and for use as burning fuel in the spring. Do not winter graze.

For grazing: Divide into 4 to 8 equal sized pastures. Rotate grazing to allow 21 days regrowth between grazing periods.

Example: 4 units: graze 7 days, rest 21

8 units: graze 3 days, rest 21

Rotate grazing starting about May 1 to 15 and stopping by August 15.

Allow regrowth after August 15 to replenish root reserves and for use as burning fuel in the spring. Do not winter graze.

Grazing Use: No closer than eight inches.

This is a guideline to assist those producers requesting information on the establishment of eastern gamagrass. SCS does not encourage widespread planting of this species until the technology has been developed to provide more consistent and better researched guidelines.