UNIVERSITY OF DELAWARE
COOPERATIVE
EXTENSION

Provisional Seashore Mallow Planting, Growing, and Harvesting Protocol

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1. Seed bed preparation

We've prepared the seedbed by either tilling or by no-till using herbicides (glyphosate and gramoxone) to kill the weeds. Where we have non-saline soil, weeds are a problem since we do not have herbicide-ready seashore mallow. Since mallow is a perennial, a buildup of a seed bank of weeds can be a problem. Morning glory, marestail, poke weed, dandelion, Virginia creeper, and some grasses (foxtail, fall panicum) are some of the offending plants. If the time between spraying and seeding is short, glyphosate is not a good choice since the seedlings are sensitive to that herbicide. If perennial weeds are part of the mix, then tilling is probably the best option because the gramoxone probably won't be effective on older perennial weeds.

2. Planting

We have used a row planter with 19 inch rows with seeds ~3-5 inches apart and about 1 inch deep. Sorghum plates are the right size for the mallow seeds. We haven't tried drilling the seeds, but that approach could be used. In small plots we have used 12 inch rows and that worked fine with the DE 22 line of mallow. We planted it in mid-May to Mid-June.

3. Pre-emergent herbicides

In the initial planting year, we have used the pre-emergent herbicide, Dual Max 1 pt per acre plus 0.25% surfactant in 25 gallons of water/acre. In subsequent years, a quart of Atrazine and 0.5 oz of Sandea was added to the mixture. A quart of glyphosate per acre can be applied to kill winter and early spring perennial and annual weeds. The Atrazine use was determined safe in trials by Mark VanGessel (University of Delaware), and that for Sandea and glyphosate by Tony Freeman (Lewes, DE) in field tests.

4. Fertilizer

Fertilizer application is generally made based on soil testing. As a relative of cotton and okra, we believe Seashore mallow has a high feeding rate on potash and is sensitive to nitrogen. High nitrogen will favor stem growth over fruit development. The very absorbent stem fibers are useful as bedding for poultry; consequently, high nitrogen is desirable. Of the micronutrients, boron is especially important to prevent abortion of seed pods. The optimum pH is probably between 6.2 and 6.5. At the Freeman farm, we applied 85 N 34 P 104K per acre.

5. Irrigation

Some years, we have irrigated at the Freeman farm, and some years we have not. Irrigation, when it was done, was once or twice during the season. Obviously, a newly planted crop is more vulnerable to drought than an established one, and those in the second year and older are most resistant. Some of the physiological characteristics that confer salt tolerance to seashore mallow also enhance drought tolerance. In areas where soils or irrigation water are salty, the ability of the plants to tolerate salt makes those soils and water resources, rather than liabilities.

6. Insect Pests

Occasionally, we have found in older stands a build-up of flea-beetles and scentless plant bugs. We have found some flea-beetle resistance in several accessions, but none for the plant bugs as yet. Once we sprayed the Freeman's field from the air with Warrior and Lannate. We have sprayed from the ground several times in our plots in Lewes for insects.

7. Post-emergent herbicides

Southern States came from Milford with a large sprayer to apply Post as a grass herbicide.

8. Cutting and combining

We cut the plants with a Ford version of a Haybine in early September. The time is chosen to be when the oldest seed pods are just beginning to shatter and the youngest are still not mature. We try to time the harvest to give us the maximum yield of mature, good seeds. After the plants dry, they are combined with a machine with a pickup head. We have directly combined on occasion, but we feel that the rough handling of the stems by that method results in more seed loss.

9. Baling

After combining, the straw is then windrowed and baled.

10. Winter cover crop

We have planted a winter cover crop for many years to reduce nutrient loss and give freeze protection to the crowns of seashore mallow. Wheat or rye was better than barley, which proved hard to kill in the spring burn-down.

11. Seed availability

Seeds of various selections of seashore mallow are available from the USDA Cape May Plant Materials Center in Cape May, NJ.

References

"New Jersey - Cape May Plant Materials Center." Natural Resources Conservation Service, www.nrcs.usda.gov/plant-materials/njpmc

About the Authors

After more than three decades of research on salt-tolerant plants, Jack and Denise are retired and living in Lewes, DE.

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About this Publication

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