

Protocol Information

USDA NRCS - Appalachian Plant Materials
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Plant Materials Program

Family Scientific Name: **Lamiaceae**

Family Common Name: **mint**

Scientific Name: *Monarda clinopodia* L.

Common Name: **white bergamot**

Species Code: **MOCL**

Ecotype: **Monongahela National Forest**

General Distribution: **White bergamot is widely distributed throughout eastern North America from Vermont south to Georgia and Alabama and west to Missouri.**

Known Invasiveness: **none**

Propagation Goal: **Plants**

Propagation Method: **Seed**

Product Type: **Container (plug)**

Stock Type: **1+0 container plug**

Time To Grow: **6 Months**

Target Specifications: **A well-developed plant suitable for mechanical transplanting that has at least 6 inches of top growth and a dense, fibrous root system.**

Propagule Collection: **Seed of Monongahela National Forest ecotype white bergamot was hand harvested from existing populations within the West Virginia confines of the Monongahela National Forest.**

Pre-Planting Treatments: **Seed is planted into round cell greenhouse flat liners with 38 cells per flat that have been filled with coarse processed bark and composted pine bark growing medium. Seed is surface sown at a rate of 3-5 seeds per cell and lightly covered with**

starter sized, 1/16" - 1/8" diameter, granite poultry grit to combat damping off diseases. Prepared flats are lightly hand watered to slightly moisten the growing medium and cold stratified at 35 degrees Fahrenheit for a minimum of 21 days.

Growing Area Preparation/

Annual Practices for Perennial Crops: **Stratified seed is placed in a greenhouse maintained under natural lighting and at a minimum temperature of 70 degrees Fahrenheit. Soil moisture is maintained during germination by an automatic overhead watering system set to cycle for 20 seconds every thirty minutes during daylight hours.**

Establishment Phase: **Germination typically occurs 7 - 10 days after placement in the greenhouse.**

Length of Establishment Phase: **7-10 days**

Active Growth Phase: **After germination, seedlings are maintained in a greenhouse environment 2-4 months to promote development of a plug with at least 6 inches of top growth and a dense, fibrous root system suitable for mechanical transplanting. Watering is reduced to overhead hand watering once daily. Seedlings receive a water soluble complete fertilizer bi-weekly until hardening.**

Length of Active Growth Phase: **2-4 months**

Hardening Phase: **Acclimation is typically accomplished through placement of seedlings outdoors in a protected location for a 1-2 week period prior to transplanting.**

Length of Hardening Phase: **1-2 weeks**

Outplanting performance on typical sites: **To re-establish white bergamot into natural landscapes, plugs are randomly hand transplanted into an unprepared (untilled) seedbed.**

References: **USDA, NRCS. 2013. The PLANTS Database (<http://plants.usda.gov>, 21 March 2013). National Plant Data Team, Greensboro, NC 27401-4901 USA.**

Citation:

Vandevender, John 2013. Propagation protocol for production of container *Monarda clinopodia* L. plants (1+0 container plug); USDA NRCS - Appalachian Plant Materials Center, Alderson, West Virginia. In: Native Plant Network. URL: <http://www.nativeplantnetwork.org> (accessed 13 September 2013). Moscow (ID):

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