

Growing *Eucalyptus benthamii* and *Eucalyptus macarthurii* in the southeastern United States



10-year-old E. benthamii growing near Walterboro, SC

Why Eucalypts?

The United States Department of Energy has identified *Eucalyptus*, as well as several other tree species, as being important sources of biomass for the production of advanced biofuels. Advanced biofuels are needed in order to achieve our national objective of displacing 15% of the projected gasoline usage for 2017. This means that the annual renewable fuel supply will be required to expand from about 5 billion gallons of corn grain ethanol to about 35 billion gallons of alternative fuels that are generated from a variety of plant materials including grasses, woodchips, and agricultural wastes.

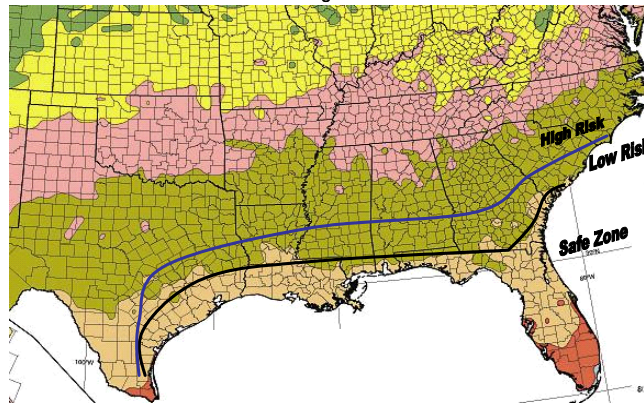
To be sustainable and environmentally responsible, that dry tonnage must be met by highly productive sources of cellulose, such as short rotation woody trees. Of all hardwood species studied for use as a biomass tree, *Eucalyptus* has the greatest potential to produce the greatest amount of biomass per acre compared to other potential biomass crops, thus better enabling ways to meet our bioenergy production needs sustainably.

Eucalyptus is being purpose grown on plantations for biomass in almost 100 countries because of its rapid

growth rate, highly desirable wood properties for multiple forest processing industries, and for its natural ability to withstand extremes in climate and fight off disease and insects. In parts of the Southeastern United States eucalypts are being considered as a short rotation woody biomass crop. *Eucalyptus* offers multiple advantages for short rotation woody biomass including high productivity, adaptability to marginal lands, high bulk density, short rotation times, excellent fiber properties and high carbon storage in its roots and the above ground tree.

Eucalyptus benthamii (“E. ben.”) and *Eucalyptus macarthurii* (“E. mac.”) are fast growing eucalypt species with sufficient frost tolerance for most of the Gulf and Atlantic Coastal Plains in the southern US.

Eucalyptus benthamii and *macarthurii*
Planting Zones



Best plantation growth will be realized with timely and adequate silvicultural management as described below. One of the key success elements is an early start in the process.

Site Selection. Late winter or early spring to allow a fall planting. (I thought we like to plant Eucalyptus in the spring)

Seedlings. Orders should be placed no later than May 15.

Spacing. Pulpwood 600 TPA. Bioenergy 1200 TPA.

Soils. Moderately well drained soils with some degree of clay content for water retention. Avoid excessively well drained and poorly drained sites.

Site Preparation. Chemical site preparation will be dependent on post-harvest regrowth, but generally will include a summer broadcast application of glyphosate or similar product at a rate of 8-10qts/acre, 15 gallons water /acre with a surfactant. Mechanical site preparation will consist of bedding or subsoiling. Eucalypts require both chemical and mechanical site preparation for best growth. Old-field sites will need to be subsoiled.

Planting. 100% containerized. Fall planting is preferred, mid-September to early November depending on adequate soil moisture and historical date of first frost. Hand planting is the norm but mechanical planting is possible depending on equipment and contractor experience with container stock.

Fertilization. Near the date of planting, broadcast application of 150-200 lbs/acre of TSP on P-deficient sites. After crown closure at age 2-3 years, broadcast application of 150-200 lbs/acre urea. Weed control must be adequate before any nitrogen application.

Weed control. Complete weed control in the 1st year and this will include HWC (?). Currently, the only practical means to accomplish this is a directed spray of glyphosate. A label is being requested for the use of Oust, which has been shown to be safe



on eucalypts up to 2 oz/acre. In the second year, a directed-spray of glyphosate may be required. Standard site preparation pine tank mixes will result in eucalypt mortality or stunted growth.

2-year-old *E. macarthurii* growing near
Greenville, AL

Rotation length and Yields:

Pulpwood

Biomass for Bioenergy

Eben 7 years, MAI 12-16 tons/acre/year. Eben 3 years, MAI 14-18 tons/acre/year

Emac 8 years, MAI 8-12 tons/acre/year. Emac 4 years, MAI 10-14 tons/acre/year

For more information contact ArborGen at

1 888 888 7158

info@arborgen.com