

WOODY BIOENERGY SYSTEMS IN THE UNITED STATES

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In the United States, dedicated wood biomass cropland is expected to increase to more than 2 million ha with an average production rate of 18 t/ha. Another 334 million dry t/yr can come from forest residues and wood wastes. However, most wood bioenergy crop systems in the United States are still in the early stages of development, with a wide variety of approaches under test in different regions of the country. The most advanced work focused primarily on energy is with willows in New York grown at stand densities of over 14,300 stems/ha with the first commercial harvest at 4 yrs and a total of seven coppice rotations expected. Ten commercial clones are now available and newer clones with up to 40 percent improvement in yield are under test. Work on fast-growing poplar selections and cultural practices for growing them is also well-advanced in several regions of the country with the current emphasis on bioproducts. This production infrastructure will facilitate future shifts to include biofuels. The largest concentration of plantations is in the Pacific Northwest with about 17,000 ha. Cultural practices vary from irrigated plantations, harvested at ages from 6 to 15 yrs for different products, to 11,000 ha planted to primarily one clone (210 clones under test) on 12-yr rotations in Minnesota, to agroforestry plantings of hybrid aspens yielding 22 t/ha in Iowa at 10 yrs of age. A variety of studies show wood biomass energy production to be the most sustainable, environmentally favorable crop that can be grown in many areas, but much research is still needed to answer specific concerns. Major impediments are the time and cost for establishment, competition with annual crops for land, price competition with bioproduct markets, social resistance to monoculture plantations, the need for more efficiency in harvests, and techniques for drying wood for some energy applications.

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*** INVITED SPEAKER ***