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Shrub willow for bioenergy and ecosystem services

Short-rotation coppice (SRC) systems, like shrub willow (*Salix* spp.) and poplar (*Populus* spp.), are projected to supply over 200 million dry tons of biomass annually in the U.S. by 2040. Shrub willow can be grown on a wide range of sites to generate biomass for heat, power, liquid fuels and renewable bioproducts while providing additional environmental and rural development benefits. Shrub willow has many characteristics that make it an ideal biomass feedstock including high yields, the ability to resprout after coppice, two to four year harvest cycles, ease of propagation from dormant stem cuttings, ease of breeding, a broad genetic base and a feedstock composition similar to other sources of woody biomass. Research on shrub willow for biomass energy and alternative applications (bioremediation, vegetative covers, treatment of organic wastes, riparian buffers, living snow fences) has been ongoing in the U.S. for over 30 years. Collaborative efforts involving both private, NGOs and public entities at the local, state and federal level have been critical to facilitating the commercialization of this system. The current expansion of willow in New York has been possible because of government incentive programs, commitment by an end user for the production of renewable power and heat, breeding and commercial scale up of improved cultivars and the development of reliable planting and harvesting systems. Deploying willow in multifunctional value-added systems provides opportunities for potential producers and end users to learn about the system and characteristics of the biomass feedstock, which will help remove barriers to deployment.

Biography

Timothy A Volk is a Senior Research Associate at State University of New York College of Environmental Science and Forestry (SUNY ESF), USA. He has over 25 years of experience working in the fields of forestry, agroforestry, short-rotation woody crops, bioenergy and phytoremediation in the Northeastern United States and West Africa. In his current position, he is responsible for projects focused on the development of shrub willow biomass production systems for bioenergy and bioproducts and incorporating willow into sustainable landscape designs. He is also actively involved in the development of harvesting systems for woody crops and sustainability assessments of willow and forest based bioenergy systems.

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