

FACT SHEET

Genetic Diversity of Willow

The genetic diversity of willow cultivars is critical since new diseases and pests could arise over the 25+ years of the crop. Willow cultivars can be planted in blocks or in a random mixture to reduce the impact and spread of pests and diseases. If a cultivar becomes susceptible to a new pest or disease, that block of willow could be replanted with a resistant cultivar. Current cultivars represent seven of the many diversity groups that exist.

Diversity group 1

Salix x dasyclados

‘SV1’



Diversity group 3

Salix caprea hybrid

‘S365’



Diversity group 5

Salix miyabeana

‘SX61,’ ‘SX64,’ ‘SX67,’
‘Canastota,’
‘Marcy,’ and
‘Sherburne’



Diversity group 4

Salix eriocephala

‘S25’



Diversity group 6A

Salix purpurea

‘Wolcott’ and ‘Fish
Creek’



Diversity group 6B

Salix koriyanagi x
S. purpurea

‘Onondaga’ and
‘Allegany’



Diversity group 8

Salix viminalis x *S. miyabeana*

‘Fabius,’ ‘Tully Champion,’
‘Otisco,’ ‘Preble’ and
‘Owasco’



Diversity group 9

Salix purpurea x *S. miyabeana*

‘Millbrook,’ ‘Oneonta,’
‘Saratoga’ and ‘Oneida’



A number of insect pests can influence the growth and productivity of willow bioenergy plantations. Prior to wide-spread deployment, trials with new cultivars should be completed to determine if any show susceptibility to regionally prevalent pests and pathogens. Despite successful testing in yield trials, deviations in the populations of pests, the virulence of pathogens, and unusual environmental conditions can occur over time that can overwhelm the defenses of particular cultivars. Thus, in order to try to minimize the potential for major losses, it is strongly advisable to plant a genetically diverse mixture of cultivars available from Double A Willow (www.doubleawillow.com).

Diversity Group	Species	Cultivar	Pest & Disease Susceptibility				
			Rust	Beetle Damage	Aphids	Deer Browse	Potato Leaf Hopper Damage
1	<i>Salix x dasyclados</i>	SV1	Med	High	Med	High	Low
3	<i>Salix caprea</i> hybrid	S365	-	Low	-	Med	-
4	<i>Salix eriocephala</i>	S25	High	Low	Med	Low	Low
5	<i>Salix miyabeana</i>	SX61	None	Med	Low	Low	Low
		SX64	None	Low	Med	Med	None
		SX67	None	Low	Low	Med	None
		Canastota	None	Med	-	Med	None
		Marcy	None	Low	Low	Med	None
		Sherburne	None	Low	Low	Med	None
6A	<i>Salix purpurea</i>	Wolcott	Low	Med	Med	Low	None
		Fish Creek	Med	Med	Med	Low	None
6B	<i>Salix koriyanagi</i> x <i>S. purpurea</i>	Onondaga	None	Low	Med	Low	None
		Allegany	Low	Low	Med	Low	None
8	<i>Salix viminalis</i> x <i>S. miyabeana</i>	Fabius	None	Low	Med	Med	None
		Tully Champion	None	High	Med	Med	Med
		Otisco	None	Med	Low	Med	Low
		Preble	None	Low	Low	Low	Low
		Owasco	None	High	Med	Med	Med
9	<i>Salix pupurea</i> x <i>S. miyabeana</i>	Millbrook	None	Low	Med	Med	Med
		Oneonta	None	Low	-	Med	None
		Saratoga	None	Low	Low	Med	None
		Oneida	None	Low	-	Med	None

Fred Gouker and Lawrence Smart*

Horticulture Section, School of Integrative Plant Science, Cornell University
New York State Agricultural Experiment Station, Geneva, NY 14456

*Contact: lbs33@cornell.edu, 315-787-2490

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