

The  
UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE  
and  
MINNESOTA  
AGRICULTURAL EXPERIMENT STATION  
and  
NORTH DAKOTA  
AGRICULTURAL EXPERIMENT STATION  
and  
SOUTH DAKOTA  
AGRICULTURAL EXPERIMENT STATION

ANNOUNCE THE RELEASE OF THE CULTIVAR  
**'LEGACY' LATE LILAC**

Legacy late lilac *Syringa villosa* VAHL. is a seed propagated cultivar suitable for planting in multi-row farmstead and field windbreaks, wildlife habitat, and plantings associated with recreational development.

Late lilac is an introduced, coarse, upright shrub with leaves much larger than common lilac. Leaves are deeply veined giving the impression of wrinkling. Growth is dense and shrub height at maturity averages approximately 8 feet. The flowers are borne in dense pyramidal panicles, 3 to 7 inches long. The florets are pink, fading to white as the flowers mature. The fruit is a capsule containing four seeds. Growth rate is slow to medium. Late lilac has a non-suckering habit, which is often desirable for windbreaks and ornamental plantings. Disease and insect pests have not been a problem in the Northern Great Plains. This plant does not readily "volunteer" in shelterbelts.

Accession ND-83, P.I. 540443, originated from three pounds of seed collected in 1956 from established plants at Agricultural Canada, Morden Research Centre at Morden, Manitoba.

The USDA, Natural Resources Conservation Service has evaluated the adaptation and performance of Legacy late lilac at their Plant Materials Centers at Bismarck, North Dakota; Bridger, Montana; Manhattan, Kansas; East Lansing, Michigan; and Quicksand, Kentucky.

Field evaluation studies were conducted cooperatively with the Natural Resources Conservation Service and North Dakota Game and Fish Department, Bismarck, North Dakota; North Dakota Forest Service, Bottineau, North Dakota; Morton County Parks Department, Sweet Briar Recreation Area, North Dakota; North Dakota State University Experiment Station, Dickinson, North Dakota; South Dakota State University, Central Research Station, Highmore, South Dakota; USDI, Fish and Wildlife Service, Lake Andes National Wildlife Refuge, Lake Andes, South Dakota; US Forest Service, Buffalo Gap National Grasslands, Cottonwood, South Dakota; University of Minnesota, West Central Experiment Station, Morris, Minnesota, and Northwest Experiment Station, Crookston, Minnesota; and Minnesota Department of Natural Resources, Rochester, Minnesota.

A total of 61 field plantings in actual use situations were conducted in cooperation with state and federal agencies and soil conservation district cooperators in North Dakota, South Dakota and Minnesota. Field-testing is currently underway to determine its adaptation in Montana, Nebraska,

Missouri and Iowa. It is well adapted to parts of Manitoba and Saskatchewan, as large numbers of late lilac are planted there each year in shelterbelts.

Legacy has performed suitably on most soil types, but grows best on loam, silt loam and silty clay loam soils. It will survive on sandy loam soils, but annual growth and vigor will be reduced. A weed free environment is needed to ensure good growth and survival on all soils.

Legacy is a non-suckering lilac cultivar and is not an invasive species. The seeds are not eaten by birds, nor has it been seen to spread in the 30 year old planting at the Bismarck PMC. In the area where it is adapted, it has shown no inclination to move off site.

The USDA, Natural Resources Conservation Service, Plant Materials Center, 3308 University Drive, Bismarck, North Dakota 58504, will maintain the breeders seed. Seed will be available from nurseries in North Dakota, South Dakota, and Minnesota.

APPROVALS:

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Director, Ecological Sciences Division  
United States Department of Agriculture  
Natural Resources Conservation Service  
Washington, DC

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Date

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State Conservationist  
United States Department of Agriculture  
Natural Resources Conservation Service  
St. Paul, Minnesota

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Agricultural Experiment Station  
St. Paul, Minnesota

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Director  
North Dakota State University  
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South Dakota State University  
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Brookings, South Dakota

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Date

### DATA TO SUPPORT THE RELEASE OF LEGACY LATE LILAC

**Cultivar:** Legacy

**Accession No.:** ND-83, 9006228, PI-540443

**Common Name:** Late lilac

**Scientific name:** *Syringa villosa* VAHL.

**Symbol:** SYVI3

**Description:** Late lilac is a coarse, upright shrub with leaves much larger than common lilac. Leaves are deeply veined, giving the impression of wrinkling. Growth is dense and shrub height at maturity averages 8 feet. The flowers are borne in dense pyramidal panicles, 3 to 7 inches long. The florets are pink, fading to white as the flowers mature. The flowers are not as fragrant as those of the common lilac are. The fruit is a capsule containing four seeds. Growth rate is slow to medium. Late lilac has a non-suckering habit, which is often desirable for windbreaks and ornamental plantings.

**Origin:** This lilac is native to China, and in the early 1880s was first made known to western horticulture from plants grown at the Arnold Arboretum in Massachusetts. The source of Legacy late lilac is the Morden Research Centre, Morden, Manitoba Canada. Open pollinated seed was collected in the fall of 1956, and used to grow plants, which were established at the USDA, NRCS Plant Materials Center, Bismarck, North Dakota. The progeny were tested in advanced evaluation and field plantings to determine soil and climatic adaptation.

**Uses:** Legacy late lilac is a seed propagated cultivar suitable for planting in multi-row farmstead and field windbreaks, wildlife habitat, and plantings associated with recreational development.

**Performance:** USDA, Natural Resources Conservation Service has evaluated the adaptation and performance of ND-83 late lilac for windbreak and wildlife habitat purposes in the Great Plains states. Initial evaluation studies have been conducted at the NRCS, Plant Materials Centers at Bismarck, North Dakota; Bridger, Montana; Manhattan, Kansas; East Lansing, Michigan; and Quicksand, Kentucky (Table 6). The plantings in Michigan and Kentucky showed some susceptibility to mildew due to higher precipitation.

Field evaluation studies have been conducted in North Dakota, South Dakota, Minnesota, Nebraska, Kansas, Iowa and Missouri. These plantings were established on land provided by cooperating state and federal agencies to determine adaptation and performance on a wide range of soils. In addition, ND-83 late lilac has been field tested since 1959 on over 60 sites on conservation district cooperators' land in windbreak and wildlife habitat plantings in North Dakota, South Dakota and Minnesota (Tables 1-3). Tables 4-5 summarize the field plantings in Iowa, Missouri, Nebraska and Kansas.

Legacy late lilac is adapted to a wide range of soils and climatic conditions. Most of the successful field plantings were evaluated for 5 years.

In Minnesota the average height after 5 years was 4 feet, the average for all plantings was 4.4 feet after 6.1 years. Poor weed control significantly reduced the height on many of the plantings.

The late lilac did very well in South Dakota. On a number of the field plantings, the plants averaged over 5 feet tall after 5 years. The average height of late lilac in the South Dakota plantings is 7.6 feet after 18.7 years. There were a number of plantings in the southeastern part of the state where the lilac averaged 14 feet tall.

The tallest plantings in North Dakota were several feet shorter, but the average height was about the same as in South Dakota. The mean height was 7.7 feet after 17.5 years. The plantings in North and South Dakota benefited from better weed control.

In a number of the field plantings other lilac species were included as standards of comparison. In some of the oldest plantings, the growth of the late lilac was superior to Hungarian lilac (*Syringa josikaea*). In some of the more recent plantings in Minnesota, late lilac was superior to common lilac (*Syringa vulgaris*). However, the late lilac suffers more during extended droughts. A number of the older plantings exhibited some stem dieback in the dry years of the late 1980s.

**Adaptation:** Based on performance studies conducted by the USDA, Natural Resources Conservation Service, the primary area of adaptation for Legacy late lilac is projected to include the states of North Dakota, South Dakota, Minnesota, Nebraska, and Kansas. Adaptation outside of this area has not been adequately tested.

Within these states, the late lilac is potentially adapted to a wide range of Major Land Resource Areas (MLRA). Within these MLRAs the soils and climate varies considerably. A series of drought years in the late 1980s and early 1990s seriously hurt the establishment of the late lilac in the field plantings. During these dry years, adequate cultivation and some supplemental irrigation was needed to ensure survival of the lilac. Where cultivation was lacking, the plants did not survive.

**Soils:** Legacy is currently recommended for planting on soils that are in the USDA, Natural Resources Conservation Service, Field Office Technical Guide, Windbreak Suitability Groups (WSG) 1 through 6. It is not recommended on very droughty soils (WSG 7), as well as soils, which are saline (WSG 9 & 10) or have strong calcareous layers at or near the surface (WSG 8).

**Climate:** The average annual precipitation of the area of adaptation for Legacy varies from 14 to 30 inches, increasing from the northwest to the south and east. In the Plains states of North Dakota, South Dakota, Nebraska and Kansas, approximately 75% of this precipitation falls during the growing season, while in Minnesota slightly over 50% of the annual precipitation falls during the growing season. Increased amounts of precipitation cause greater incidence of mildew and other foliar diseases. The temperatures in the adapted region vary from a January mean of -2 degrees F. in North Dakota (Plant Hardiness Zone 3) to a July mean of 80 degrees F. in southern

Kansas. The average minimum temperature ranges -40 degrees in the north to 0 degrees in the south. The average frost-free period in this region varies from 100 days in the north to 180 days in the south.

**Propagation:** Legacy late lilac is a seed propagated cultivar. The fruit of lilac is an oblong, smooth, leathery, brown, two-celled capsule that ripens in late summer or fall. Each capsule contains four thin, flat, lozenge-shaped seeds about 1/2 inch long and 3/16 inch broad. The capsules or pods are hand harvested when they turn brown in color, but have not yet begun to open in mid to late September. The pods are air-dried for 1 to 2 months, and then run dry through a Dybvig-type macerator to break the clusters into individual pods. A fanning mill then separates clean seed from the opened pods. The remaining unopened pods are sent through a hammermill at low speed, and then once again over the fanning mill to remove the clean seed.

The seed requires a cold stratification period of 45 to 60 days for germination to take place. Seed may be fall planted in October at a depth of approximately 1/4-inch in mulched beds and kept moist until freezeup. Seed may be artificially stratified for 30 to 45 days in moist silica sand or pulverized peat moss at 36 to 38 degrees F. Seed is planted after danger of frost has passed in the spring.

Seedlings are 4 to 12 inches in height in one year, while two year old stock is 12 to 36 inches high (Morgenson 1998). These two-year-old seedlings are the best size for field plantings.

**Sources of Seed and Planting Stock:** The USDA, NRCS, Plant Materials Center, 3308 University Drive, Bismarck, North Dakota 58504, will maintain breeder seed and foundation stock of Legacy late lilac.

#### **References:**

- Morgenson, G. 1998. (Personal communication) Bismarck, North Dakota: Lincoln-Oakes Nurseries, Bismarck, North Dakota.
- Rudolf, P.O., and P.E Slabaugh. 1974. *Syringa* L. IN: Seeds of Woody Plants in the United States, USDA, Forest Service, Agric. Handbook 450, pp. 791-793.
- Spongberg, S.A. 1990. A Reunion of Trees. Harvard University Press, Cambridge, Massachusetts. 270 p.
- USDA. 1941. Climate and Man. Yearbook of Agriculture. Washington, D.C.
- USDA Soil Conservation Service. 1981. Land Resource Regions and Major Land Resource Areas of the United States. Agric. Handbook 296, 156 p.
- USDA Soil Conservation Service, Plant Materials Center. 1956-1997. Initial and Field Planting Performance Data.

**Prepared by:** The data to support release of Legacy late lilac was assembled by Michael J. Knudson, Assistant Plant Materials Center Manager, Russell J. Haas, Plant Materials Specialist, and Dwight A. Tober, Plant Materials Center Manager, Natural Resources Conservation Service, Bismarck, North Dakota. May 1998.

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# TABLE 1 - FIELD PLANTINGS AND FIELD EVALUATION PLANTINGS (FEP) - MINNESOTA

## Summary of Plant Performance Data - ND-83 Late Lilac

Area	Field Office	SCD Cooperator	Purpose	MLRA	Soil (WSG)	Year Planted	Number Planted	Age	Height (ft.)	Crown Width (ft.)	Weed Comp.(1)	Adaptation (2)	Survival %	Remarks
2	Moorhead	D. Borgen	WBFS	56	1K	1968	393	20	12.0	10.0	7	3	21	
3	Aitkin	H. Hesse	WLDF	88	3	1989	10	5	0.9	0.6	9	5	50	
3	Hinckley	C. Espeseth	WLDF	90	3	1990	25	5	4.0	3.0	5	3	60	
5	Redwood Falls	A. Schmidt	WLDF	103	2W	1989	162	5	2.5	0.1	9	3	20	Damaged by grasshoppers
5	Redwood Falls	D. French	WLDF	103	8	1989	36	5	1.8	1.5	3	9	100	Grass taken over
5	Redwood Falls	D. Zwach	WLDF	103	NA	1989	124	5	3.0	3.5	6	2	98	
6	Glencoe	D. Stoltenow	WBFS	103	3	1991	25	5	5.5	6.5	1	3	64	
6	Glencoe	Glencoe School	SPEC	103	2K	1988	20	5	2.0	0.5	5	6	70	Drought affected establishment
6	Mankato	D. Schuster	WIND	103	2	1990	30	5	6.0	3.0	6	2	97	
6	Mankato	G. Rye	WBFS	103	4L	1990	50	5	4.0	2.5	6	4	56	
6	Mankato	W. Brielmaier	WBMR	103	10	1990	30	5	3.0	2.0	4	8	78	
6	Sleepy Eye	Brown Co. Park	WLDF	103	3	1991	25	5	5.0	4.0	4	2	60	
7	Albert Lea	D. Adix	WBFS	103	2	1992	120	5	5.0	4.0	5	5	77	Wet site, leading to disease problems
7	Faribault	B. Daly	WLDF	103	3	1991	25	5	3.5	3.0	7	3	70	Weeds!
7	Ddodge Center	P. Hadler	WBFS	104	1	1992	100	5	4.7	3.0	7	5	79	
7	Lewiston	D. Martin	WBFS	105	3	1976	25	12	12.0	8.0	3	3	80	
2	Morris	G. Libbon	WBFS	102A	1K	1991	51	5	6.6	6.4	1	3	96	Black plastic & drip irrigation
2	Morris	R. Stark	WLDF	102A	6G	1991	100	5	4.4	3.4	8	3	65	Grass taking over
5	Marshall	B. Aufenthie	WLDF	102A	3	1975	50	7	6.0	5.0	5	5	90	
5	Ivanhoe	D. Thomsen	WLDF	102A	3	1992	50	5	4.1	2.5	3	3	99	Grass taken over
5	Madison	J. Connor	WLDF	102A	2K	1992	20	5	4.8	4.0	1	2	95	Fabric used
5	Luverne	J. Ask	WBFS	102B	3	1991	60	5	5.0	5.0	8	2	83	
<b>AVG</b>								<b>6.1</b>	<b>4.8</b>	<b>3.7</b>	<b>5</b>	<b>4</b>	<b>73</b>	
	Crookston	U of M	FEP	56	1K	1988	20	10	8.0	11.4		3	100	Fair to good vigor
	Grand Rapids	U of M	FEP	57		1996	10	2	1.3	0.7			100	Fair to good vigor
	Becker	U of M	FEP	91	7	1996	10	2	1.3	0.7			100	Fair vigor
	Rochester	DNR	FEP	105	3	1986	20	10	4.4	4.5			85	Fair to good vigor
	Morris	U of M	FEP	102A	3	1988	20	10	8.7	12.3	1	3	100	Good vigor
<b>AVG</b>								<b>6.8</b>	<b>4.7</b>	<b>5.9</b>	<b>1</b>	<b>3</b>	<b>97</b>	

(1) Weed competition severity: 1= none, 3=slight, 5=moderate, 7=severe, 9=very severe

(2) Adaptation: 1=excellent, 3=good, 5=average, 7=fair, 9=poor

**TABLE 2 - FIELD PLANTINGS AND FIELD EVALUATION PLANTINGS (FEP) - NORTH DAKOTA**

**Summary of Plant Performance Data - ND-83 Late Lilac**

Area	Field Office	SCD Cooperator	Purpose	MLRA	Soil (WSG)	Year Planted	Number Planted	Age	Height (ft.)	Crown Width (ft.)	Weed Comp.(1)	Adaptation (2)	Survival %	Remarks
3	New England	Pierce Church	SPEC	54	6G	1966	50	22	7.5	6.0	3	3	97	
3	Beach	Golden Valley SCD	WIND	54	1	1989	100	5	4.0	3.0	1	1	64	
3	Hazen	M. Heller	WBFS	54	5	1989	300	5	2.2	1.4	5	5	34	
1	Grand Forks	Clark Farms	WBFS	56	1K	1965	375	23	10.0	5.0	3	1	97	
1	Grand Forks	O. Forseth	WBFS	56	1K	1965	124	23	8.0	4.0	5	3	79	
2	West Fargo	Cass Co. Park Board	SPEC	56	3	1990	37	5	3.0	2.5	5	3	90	
3	Williston	D. Christopherson	WBFS	53A	3	1967	100	21	8.5	5.0	3	1	99	
3	Crosby	A. Jacobson	WBFS	53A	3	1975	39	13	5.5	3.5	3	3	100	
1	Minot	V. Stevick	WBFS	53B	3	1966	78	22	6.0	6.0	7	1	80	
2	Valley City	J. Kunze	WBFS	55B	1	1966	41	22	12.0	18.0	1	1	40	
2	Valley City	J. Franklin	WBFS	55B	3	1968	28	20	12.0	10.0	1	1	100	5 to 9 feet tall after 5 years
2	Lisbon	R. Schaller	WBFS	55B	M4 6-2-1	1965	115	23	9.2	14.0	5	1	98	Extensive dieback in 1988
2	Lisbon	N. Nelson	WBFS	55B	M4G-4-1	1965	300	24	12.0	12.0	5	1	70	
<b>AVG</b>								<b>17.5</b>	<b>7.7</b>	<b>7.0</b>	<b>4</b>	<b>2</b>	<b>81</b>	
	Sweet Briar	Morton County	FEP	54	6	1975	5	15	10.7	7.0	3	5	100	
	Dickinson	ND State University	FEP	54	5	1988	5	10	7.0	8.2	5	5	60	Good vigor
	McKenzie	Game & Fish	FEP	53B	4	1972	6	25	11.3	11.0	3	3	100	Fair vigor
	McKenzie	Game & Fish	FEP	53B	1	1973	6	25	10.9	14.8	3	3	100	Drought caused dieback
	Bottineau	ND Forest Service	FEP	55A	3	1974	5	20	8.2	6.7	5	3	100	Fair vigor
	Leeds	A. Herman	FEP	55A	3	1973	4	5	4.7	4.4		3	100	Good vigor
<b>AVG</b>								<b>16.7</b>	<b>8.8</b>	<b>8.7</b>	<b>4</b>	<b>4</b>	<b>93</b>	
(1) Weed competition severity: 1= none, 3=slight, 5=moderate, 7=severe, 9=very severe														
(2) Adaptation: 1=excellent, 3=good, 5=average, 7=fair, 9=poor														