

Supplemental Table 1. OPALS scores for various species (Ogren 2000). OPALS has been in print since 1999 and is a plant-allergy scale that runs from 1-10, where 1 is best (the most allergy-free), and 10 the most allergenic (with the highest allergy potential). The scale is updated every five years. Individual species within a genus may have a different score.

Species	Common name	Overall	Female	Male
<i>Abies</i>	firs	2		
<i>Acer negundo</i>	box elder		1	10
<i>Acer platanoides</i>	Norway maple	8		
<i>Acer rubrum</i>	red maple		1	9
<i>Acer saccharinum</i>	silver maple		1	9
<i>Albizia</i>	mimosa / silk tree	8		
<i>Amelanchier spp.</i>	shadbush / service berry	3		
<i>Arbutus spp.</i>	madrone / strawberry tree	3		
<i>Betula spp.</i>	birch	7		
<i>Broussonetia papyrifera</i>	paper mulberry		1	10
<i>Callistemon spp.</i>	bottlebrush	9		
<i>Carya spp.</i>	hickory / pecan	8		
<i>Casuarina spp.</i>	she-oak		1	10
<i>Cedrus deodara</i>	Deodar cedar		1	5
<i>Celtis spp.</i>	hackberry	8		
<i>Ceratonia spp.</i>	carob		1	8
<i>Chilopsis spp.</i>	desert willow	5		
<i>Chionanthus spp.</i>	fringetree		1	10
<i>Cinnamomum spp.</i>	camphor tree	8		
<i>Cornus spp.</i>	dogwood	5		
<i>Crataegus spp.</i>	hawthorn	4		
<i>Cryptomeria japonica</i>	Japanese cedar	10		
<i>Cupressus spp.</i>	cypress	10		
<i>Diospyros spp.</i>	persimmon		1	6
<i>Eucommia spp.</i>	hardy rubber tree		1	8
<i>Fagus spp.</i>	beech	7		
<i>Ficus spp.</i>	fig	2		
<i>Foresteria spp.</i>	desert olive		1	9
<i>Fraxinus americana</i>	white ash		1	9
<i>Ginkgo spp.</i>	ginkgo / maidenhair		2	7
<i>Gleditsia spp.</i>	honeylocust	4	1	7
<i>Gymnocladus dioica</i>	Kentucky coffee tree		1	9
<i>Idesia polycarpa</i>	wonder tree		1	7
<i>Ilex spp.</i>	holly		1	7
<i>Jacaranda spp.</i>	jacaranda	4		
<i>Juniperus virginiana</i>	eastern red cedar		1	10
<i>Kalopanax spp.</i>	castor oil tree	4		
<i>Koelreuteria spp.</i>	golden rain tree	4		
<i>Laburnum spp.</i>	golden chain	7		

<i>Lagerstroemia spp.</i>	crape myrtle	5		
<i>Lagunaria patersonii</i>	primrose tree	9		
<i>Larix spp.</i>	tamarack / larch	2		
<i>Laurus nobilis</i>	bay laurel		2	9
<i>Ligustrum spp.</i>	privet	8		
<i>Liquidambar spp.</i>	sweetgum	7		
<i>Liriodendron spp.</i>	tulip tree / yellow poplar	4		
<i>Maclura spp.</i>	osage orange		2	9
<i>Magnolia grandiflora</i>	Southern magnolia	5		
<i>Malus spp.</i>	apple	4		
<i>Melaleuca spp.</i>	paperbark	7		
<i>Metasequoia spp.</i>	dawn redwood	4		
<i>Morus alba</i>	white mulberry		1	10
<i>Nyssa spp.</i>	sour gum / tupelo		1	9
<i>Olea spp.</i>	olive	10		
<i>Paulownia spp.</i>	empress tree	4		
<i>Persea spp.</i>	avocado	3		
<i>Phellodendron spp.</i>	cork tree		1	7
<i>Phoenix spp.</i>	date palm		1	9
<i>Picea spp.</i>	spruce	3		
<i>Pinus spp.</i>	pine	4		
<i>Pistachia spp.</i>	Chinese pistache		1	8
<i>Podocarpus spp.</i>	yew pines		1	9
<i>Populus spp.</i>	poplar / aspen		1	9
<i>Pseudotsuga spp.</i>	Douglas fir	3		
<i>Pyrus spp.</i>	pear	3 ^a		
<i>Quercus spp.</i>	oak	8 ^b		
<i>Robinia spp.</i>	black locust	5		
<i>Salix spp.</i>	willow		1	10
<i>Sapindus spp.</i>	soapberry		3	8
<i>Schinus spp.</i>	pepper tree		7	10
<i>Sorbus spp.</i>	mountain ash	4		
<i>Tabebuia spp.</i>	trumpet tree	5		
<i>Taxus spp.</i>	yew		1	7
<i>Thuja spp.</i>	arborvitae	8		
<i>Tilia spp.</i>	basswood / linden	7		
<i>Triadica sebifera</i>	tallow tree		5	10
<i>Ulmus spp.</i>	elm	8		
<i>Vitex spp.</i>	chaste tree	4		
<i>Washingtonia spp.</i>	Mexican fan palm	3		
<i>Xylosma spp.</i>	xylosma		1	6
<i>Zelkova spp.</i>	zelkova	10		

^a fruiting (3), ornamental (4)

^b deciduous (8), evergreen (9)

Supplemental Table 2. Percent leaf area among allergy classes and average allergy index scores among city' land uses. Note: Not all cities had appropriate land use data.

City	Land Use	Percent Leaf Area				AI ^e	HMAI ^f
		L ^a	M ^b	H ^c	Unk ^d		
Albuquerque, NM	Comm/Ind/Trans	0.0	38.1	61.9	0.0	7.3	7.6
	Forest/Open	0.0	70.1	29.9	0.0	6.0	7.1
	Other	0.0	40.6	59.4	0.0	7.1	7.2
	Residential	0.7	59.0	40.3	0.0	6.4	7.1
Atlanta, GA	Comm/Ind/Trans	0.5	83.1	16.4	0.0	5.6	5.7
	Forest/Open	1.6	65.1	32.9	0.5	6.1	6.2
	Other	0.0	34.2	65.8	0.0	6.8	7.0
	Residential	1.1	63.5	35.1	0.3	6.0	6.2
Baltimore, MD	Comm/Ind/Trans	0.6	42.4	56.9	0.1	6.9	7.7
	Forest/Open	0.2	64.2	35.6	0.0	6.4	6.5
	Other	0.2	73.8	25.9	0.0	6.0	6.4
	Residential	17.3	53.0	29.8	0.0	5.7	6.4
Boise, ID	Comm/Ind/Trans	18.0	63.7	18.3	0.0	5.3	5.7
	Forest/Open	0.8	38.2	61.0	0.0	7.0	7.7
	Other	14.4	66.6	19.0	0.0	5.3	5.8
	Residential	15.7	49.6	34.7	0.0	5.8	6.4
Boston, MA	Comm/Ind/Trans	0.0	35.8	64.2	0.0	7.3	7.5
	Forest/Open	2.1	43.1	54.9	0.0	6.9	7.3
	Other	4.3	30.3	65.4	0.0	6.8	7.0
	Residential	16.5	35.3	48.1	0.0	6.2	6.6
Calgary, AB, Canada	Comm/Ind/Trans	0.0	100.0	0.0	0.0	4.7	5.5
	Forest/Open	31.3	65.2	3.6	0.0	4.5	5.8
	Other	16.7	78.7	4.6	0.0	4.7	6.2
	Residential	49.9	36.3	13.8	0.0	4.6	4.9
Casper, WY	Comm/Ind/Trans	0.0	29.2	68.9	1.9	7.3	7.8
	Forest/Open	8.3	73.9	17.8	0.0	5.3	6.7
	Other	97.3	1.9	0.7	0.0	3.1	3.1
	Residential	20.5	66.6	12.8	0.1	4.8	5.9
Chester, PA	Comm/Ind/Trans	1.3	70.6	28.1	0.0	6.6	6.7
	Forest/Open	2.1	49.3	48.6	0.0	6.6	6.8
	Other	4.8	62.8	32.4	0.0	6.6	6.6
	Residential	8.5	42.4	49.1	0.0	6.6	6.9
Chicago, IL	Comm/Ind/Trans	0.0	65.9	34.1	0.0	6.3	7.4
	Forest/Open	0.1	59.5	40.0	0.4	6.8	7.2
	Other	0.6	80.3	19.1	0.0	5.8	6.7
	Residential	4.8	55.1	38.9	1.1	6.4	7.1
Edmonton, AB, Canada	Comm/Ind/Trans	33.3	37.3	29.4	0.0	5.3	5.7
	Forest/Open	16.9	46.6	36.4	0.0	6.0	6.5
	Other	56.2	43.2	0.6	0.0	4.1	4.8
	Residential	26.0	64.3	9.4	0.3	4.9	5.8
Freehold, NJ	Comm/Ind/Trans	0.7	61.6	37.7	0.1	6.3	7.3
	Forest/Open	0.0	70.8	28.7	0.5	6.0	6.9

	Other	15.3	72.9	11.9	0.0	4.5	4.9
	Residential	6.1	44.5	49.4	0.0	6.5	6.8
Gainesville, FL	Comm/Ind/Trans	16.1	23.0	60.8	0.1	7.0	7.0
	Forest/Open	0.7	68.2	29.9	1.1	5.9	6.2
	Other	na	na	na	na	na	na
	Residential	1.6	43.5	53.8	1.1	6.8	6.9
Golden, CO	Comm/Ind/Trans	15.4	73.3	11.3	0.0	4.9	5.7
	Forest/Open	1.8	54.3	42.5	1.4	6.2	7.1
	Other	0.0	36.5	63.5	0.0	6.7	6.9
	Residential	15.8	38.9	45.3	0.0	6.3	6.7
Hartford, CT	Comm/Ind/Trans	5.5	69.7	24.8	0.0	5.9	6.7
	Forest/Open	0.6	70.6	28.7	0.1	6.1	6.9
	Other	12.7	59.8	27.5	0.0	5.9	6.4
	Residential	4.5	52.2	43.3	0.1	6.3	7.1
Jersey City, NJ	Comm/Ind/Trans	4.5	66.5	29.0	0.0	5.7	6.7
	Forest/Open	0.5	30.1	69.5	0.0	7.6	8.0
	Other	0.6	36.6	62.8	0.0	7.6	7.8
	Residential	3.7	36.6	59.7	0.0	7.1	7.3
Las Cruces, NM	Comm/Ind/Trans	0.0	67.8	32.2	0.0	6.4	6.4
	Forest/Open	0.6	93.7	5.7	0.0	4.6	4.7
	Other	0.0	99.2	0.8	0.0	5.1	5.1
	Residential	2.1	73.6	24.3	0.0	5.9	6.3
Lincoln, NE	Comm/Ind/Trans	32.9	65.9	1.1	0.0	4.3	4.5
	Forest/Open	7.8	60.5	19.4	12.3	5.4	6.5
	Other	10.9	14.4	65.7	9.0	7.1	7.2
	Residential	6.9	59.3	29.0	4.7	6.0	6.5
London ON	Comm/Ind/Trans	1.6	85.1	13.3	0.0	6.3	6.3
	Forest/Open	0.3	47.2	52.1	0.5	7.1	7.1
	Other	9.3	86.6	4.1	0.0	5.1	5.1
	Residential	11.9	46.1	41.7	0.3	6.2	6.2
Los Angeles, CA	Comm/Ind/Trans	8.3	73.5	18.2	0.0	6.0	6.4
	Forest/Open	1.0	44.7	44.5	9.8	7.4	7.5
	Other	na	na	na	na	na	na
	Residential	9.6	52.2	36.2	2.0	6.2	6.4
Moorestown, NJ	Comm/Ind/Trans	0.4	64.5	35.1	0.0	6.1	6.4
	Forest/Open	0.1	74.8	25.1	0.0	6.1	6.8
	Other	0.0	89.5	10.5	0.0	5.3	5.3
	Residential	7.8	63.5	28.6	0.1	5.7	6.2
Morgantown, WV	Comm/Ind/Trans	3.1	63.1	33.9	0.0	6.2	7.2
	Forest/Open	1.3	72.5	25.9	0.3	6.4	6.8
	Other	13.9	33.1	53.1	0.0	6.3	6.9
	Residential	12.9	59.4	27.7	0.0	5.8	6.1
Oakville, ON, Canada	Comm/Ind/Trans	7.1	46.2	46.0	0.6	6.5	6.9
	Forest/Open	9.2	59.4	31.3	0.2	6.5	6.7
	Other	0.0	0.0	100.0	0.0	8.0	8.0
	Residential	13.8	46.3	39.6	0.2	6.1	6.7

Omaha, NE	Comm/Ind/Trans	0.0	70.6	22.5	6.9	6.2	7.0
	Forest/Open	0.1	46.9	48.1	4.9	7.0	7.4
	Other	3.4	30.0	57.7	9.0	7.0	7.2
	Residential	5.7	48.3	34.7	11.3	6.2	6.7
Philadelphia, PA	Comm/Ind/Trans	0.0	47.4	52.6	0.0	7.3	8.0
	Forest/Open	0.0	54.4	45.6	0.0	6.6	7.0
	Other	5.4	77.1	17.5	0.0	6.2	6.7
	Residential	2.3	38.0	59.7	0.0	7.2	7.5
Phoenix, AZ	Comm/Ind/Trans	5.4	70.0	21.8	2.8	5.9	6.6
	Forest/Open	0.0	45.9	40.2	13.9	7.4	7.5
	Other	na	na	na	na	na	na
	Residential	11.0	65.8	14.5	8.8	5.2	5.6
Sacramento, CA	Comm/Ind/Trans	7.1	51.6	41.4	0.0	6.7	6.9
	Forest/Open	3.4	27.1	69.5	0.0	7.5	7.9
	Other	4.1	33.4	62.4	0.0	7.4	7.7
	Residential	8.3	35.0	56.7	0.0	7.1	7.3
San Francisco, CA	Comm/Ind/Trans	8.6	56.1	30.6	4.7	6.0	6.0
	Forest/Open	4.9	52.0	41.5	1.6	7.2	7.3
	Other	0.2	90.4	9.4	0.0	5.2	5.2
	Residential	12.4	58.3	28.5	0.9	5.7	5.8
Scranton, PA	Comm/Ind/Trans	8.6	44.8	46.7	0.0	6.3	6.8
	Forest/Open	0.7	60.0	39.3	0.0	6.4	7.0
	Other	37.9	38.5	23.6	0.0	4.9	5.6
	Residential	25.8	33.2	41.0	0.0	5.6	5.9
Seattle, WA	Comm/Ind/Trans	0.7	60.6	38.6	0.0	6.5	6.7
	Forest/Open	10.1	12.9	77.0	0.0	7.6	7.6
	Other	12.4	35.6	52.0	0.0	6.8	7.2
	Residential	28.8	30.8	40.2	0.2	5.6	5.7
Seoul, South Korea	Comm/Ind/Trans	3.2	75.6	21.2	0.0	5.9	6.2
	Forest/Open	1.0	60.6	37.9	0.5	6.2	6.3
	Other	16.0	54.2	29.8	0.0	5.8	5.9
	Residential	27.9	51.7	19.9	0.4	5.1	5.3
Syracuse, NY	Comm/Ind/Trans	0.5	80.9	18.6	0.0	5.7	7.1
	Forest/Open	1.8	62.3	35.9	0.0	6.9	7.2
	Other	25.1	43.4	31.5	0.0	5.6	6.0
	Residential	16.8	36.5	46.7	0.0	6.2	6.5
Tennessee	Comm/Ind/Trans	1.0	55.2	43.8	0.0	6.6	7.0
	Forest/Open	1.9	50.6	47.4	0.1	6.7	7.0
	Other	1.6	48.8	49.6	0.0	6.7	7.0
	Residential	1.0	50.4	48.0	0.6	6.6	6.9
Toronto, ON, Canada	Comm/Ind/Trans	5.9	55.4	38.7	0.0	6.3	6.9
	Forest/Open	4.4	67.3	27.0	1.3	6.4	6.8
	Other	3.9	71.9	24.1	0.0	6.4	6.9
	Residential	11.0	49.0	39.9	0.0	6.3	6.7
Washington, DC	Comm/Ind/Trans	0.0	29.7	70.3	0.0	7.7	8.2
	Forest/Open	0.3	67.1	32.6	0.1	6.2	6.6

	Other	9.3	16.3	74.4	0.0	7.5	7.6
	Residential	2.4	38.3	59.3	0.0	6.8	7.2
Woodbridge, NJ	Comm/Ind/Trans	0.5	78.6	20.4	0.5	6.2	6.7
	Forest/Open	0.3	66.5	33.1	0.2	6.3	7.0
	Other	2.2	75.0	22.8	0.0	5.3	5.8
	Residential	4.8	56.8	38.4	0.0	6.3	7.0

^a Low allergy scores (1-3) for AI

^b Medium allergy scores (4-7) for AI

^c High allergy scores (8-10) for AI

^d Unknown allergy scores (not rated)

^e Average allergy index score for city

^f High male allergy index score; average index score with dioecious species assumed as 80% male