

Black Walnut Sawtimber
A Review of Growth vs. Drain
In
Nine States

American Walnut Manufacturers Association

Jefferson City, Missouri

March, 2017

Compiled By

Shelby G. Jones, CF #989

Midwest Forest Consultants LLC

Jefferson City, Missouri

Study Area

This analysis was completed utilizing Evaluator Tool of the USFS Forest Inventory & Analysis Program. FIA data from the following states was used: Missouri, Iowa, Illinois, Indiana, Ohio, Pennsylvania, Kentucky, Tennessee, and Virginia. This is the major black walnut producing area of the U.S.

Table of Contents

	Page
Average Annual Net Growth of Walnut Sawtimber on Timberland by Ownership	3
Average Harvest Removals of Walnut Sawtimber on Timberland by Ownership	4
Average Annual Mortality of Walnut Sawtimber on Timberland by Ownership	5
Comparison of Walnut Sawtimber Growth vs. Harvest, 2010-2015	6
Timber Products Output by Product Category by State, 2012	6

Discussion Points

1. An overwhelming majority of the walnut sawtimber volume occurs on *Private* land within all nine states included in the analysis.
2. No state is harvesting more than the calculated net annual growth for that state.
3. Harvest rates appear to be sustainable for all state in the analysis, however a more thorough analysis of growing stock characteristics and diameter distributions would need to be completed to fully answer the sustainability question.
4. Public lands do not appear to contribute significantly to the total walnut harvest.
5. Sampling error (included in the spread sheets) is very high, even at the state-wide level. This is to be expected for a single species within the plot sampling methodology and intensity of FIA.
6. The data does not include components which would address harvest levels of larger diameter, high quality trees (veneer logs). TPO data for production volumes of veneer logs is questionable and may not reflect a true representation of harvest volumes.

Walnut Sawtimber Net Annual Growth on Timberland, 2010-2015, by Ownership

(Board Feet)

State	Species	Ownership group				
		Total	National Forest	Other Federal	State & Local	Private
Missouri	Black walnut	82,632,836	-41,656	1,417,090	507,592	80,749,809
Sampling error		10.04	-2,231.20	56.05	621.74	9.44
# non-zero plots		299	20	4	9	267

Iowa	Black walnut	46,792,819		408,186	2,606,595	43,778,038
Sampling error		14.88		101.28	40.61	15.71
# non-zero plots		105		1	7	97

Illinois	Black walnut	44,429,653	-2,067,776	-	1,825,167	44,672,262
Sampling error		13.2	-65.72	-	58.33	12.55
# non-zero plots		113	6	-	3	104

Indiana	Black Walnut	42,884,863	473,946	-35,970	1,328,723	41,118,164
Sampling error		11.7	59.62	-103.91	45.38	12.12
# non-zero plots		151	5	1	8	138

Ohio	Black walnut	49,846,311	281,121	831,952	3,200,760	45,532,478
Sampling error		13.78	71.85	70.82	55.53	14.51
# non-zero plots		137	2	2	7	126

Pennsylvania	Black walnut	30,976,112	-	1,816,561	11,786,004	17,373,546
Sampling error		18.25	-	101.5	69.41	53.23
# non-zero plots		66	-	3	7	59

Kentucky	Black walnut	23,992,739	-1,556,173	-9,601	1,560,839	23,997,675
Sampling error		16.99	-101.54	-102.78	94.18	16.77
# non-zero plots		125	1	1	3	121

Virginia	Black walnut	17,999,025	219,413	-	1,316,965	16,462,647
Sampling error		22.56	95.74	-	97.49	23.39
# non-zero plots		69	1	-	1	67

Tennessee	Black walnut	21,102,400	-	-63,119	1,446,487	19,719,031
Sampling error		16.37	-	-242.7	68.97	17.19
# non-zero plots		121	-	2	8	112

Sawtimber Harvest on Timberland, 2010-2015, by Ownership
(Board Feet)

State	Species group	Ownership group			
		Total	National Forest	State and local	Private
Missouri	Black walnut	33,624,894	-	1,956,982	31,667,912
Sampling error		34.34	-	96	35.98
# non-zero plots		13	-	1	12
Iowa	Black walnut	16,132,970	-		16,132,970
Sampling error		52.08	-		52.08
# non-zero plots		4	-		4
Illinois	Black walnut	3,568,012	-		3,568,012
Sampling error		66.35	-		66.35
# non-zero plots		2	-		2
Indiana	Black walnut	7,054,122	-	-	7,054,122
Sampling error		50.27	-	-	50.27
# non-zero plots		5	-	-	5
Ohio	Black walnut	14,377,463	-		14,377,463
Sampling error		40.09	-		40.09
# non-zero plots		8	-		8
Pennsylvania	Black walnut	8,307,406	-	-	8,307,406
Sampling error		52.27			52.27
# non-zero plots		3			3
Kentucky	Black walnut	6,023,435	-	-	6,023,435
Sampling error		48.78	-	-	48.78
# non-zero plots		5			5
Virginia	Black walnut	1,081,194			1,081,194
Sampling error		100.31			100.31
# non-zero plots		1			1
Tennessee	Black walnut	6,525,714	-	-	6,525,714
Sampling error		32.41	-	-	32.41
# non-zero plots		12	-	-	12

Walnut Sawtimber Mortality on Timberland, 2010-2015, by Ownership

(Board Feet)

State	Species group	Ownership group				
		Total	National Forest	Other federal	State and local	Private
Missouri	Black walnut	6,622,114	707,880	-	-	5,914,235
	Sampling error	45.63	70.93	-	-	50.38
	# non-zero plots	7	2	-	-	5
Iowa	Black walnut	8,206,738	-	-	1,917,773	6,288,965
	Sampling error	41.25	-	-	101.28	44.1
	# non-zero plots	7	-	-	1	6
Illinois	Black walnut	5,309,059	2,325,717	-	-	2,983,342
	Sampling error	46.05	63.29	-	-	65.44
	# non-zero plots	4	2	-	-	2
Indiana	Black walnut	1,822,300	-	-	-	1,822,300
	Sampling error	57.58	-	-	-	57.58
	# non-zero plots	3	-	-	-	3
Ohio	Black walnut	1,762,216	-	-	457,544	1,304,671
	Sampling error	59.15	-	-	100	71.78
	# non-zero plots	3	-	-	1	2
Pennsylvania	Black walnut	3,828,870	-	335,992	-	3,492,878
	Sampling error	56.5	-	111.03	-	61.01
	# non-zero plots	4	-	1	-	3
Kentucky	Black walnut	981,618	-	-	-	981,618
	Sampling error	62.59	-	-	-	62.59
	# non-zero plots	3	-	-	-	3
Virginia	Black walnut	919,923	-	-	-	919,923
	Sampling error	70.64	-	-	-	70.64
	# non-zero plots	17	-	-	1	16
Tennessee	Black walnut	1,936,000	-	-	-	1,936,000
	Sampling error	53.61	-	-	-	53.61
	# non-zero plots	4	-	-	-	4

Comparison of Walnut Sawtimber Growth vs. Harvest, 2010-2015
(Board Feet, International 1/4" Scale)

State	Total ST Volume	Net Annual Growth	Avg. Annual Harvest Removals	% Harvest	% of Total
Missouri	1,937,551,234	82,632,836	33,624,894	40.7	1.7
Iowa	1,040,445,791	46,792,819	16,132,970	34.5	1.6
Illinois	971,635,062	44,429,653	3,568,012	8.0	0.4
Indiana	1,073,773,457	42,884,863	7,054,122	16.4	0.7
Ohio	1,203,908,939	49,846,311	14,377,463	28.8	1.2
Pennsylvania	779,634,076	30,976,112	8,307,406	26.8	1.1
Kentucky	518,215,881	23,992,739	6,023,435	25.1	1.2
Virginia	384,294,933	17,999,025	1,081,194	6.0	0.3
Tennessee	593,357,464	21,102,400	6,525,714	30.9	1.1

Timber Products Output (TPO)-Black Walnut, 2012
(Thousand Cubic Feet)

State	All Products	Saw Logs	Veneer Logs	Pulpwood	Composite Products	Residential Fuelwood	Post-poles-pilings	Other Industrial
MO	5,660	4,836	206	8	0	609	1	0
IA	2,561	2,037	324	0	0	200	0	0
IL	1,413	1,046	99	0	0	267	0	0
IN	3,350	2,489	336	0	0	524	0	0
OH	2,758	863	55	134	0	1,694	2	10
PA	476	202	21	138	21	87	3	4
KY	2,179	1,583	28	148	0	415	0	5
TN	4,992	3,028	17	1,068	0	877	1	2
VA	2,335	997	522	330	1	484	0	1