For the purpose of agricultural soil amendment, wood ash application is similar to lime application. Both materials can benefit crop productivity but wood ash has an added advantage of supplying additional nutrients. Both materials are also alkaline and could cause crop damage if over applied or misused.

Section: BIOPOWER

Range in Elemental Composition of Industrial Wood Ash Samples and Ground Limestone

Element	Wood Ash[a]	Limestone
Macroelements	**Concentration in %**	
Calcium	15 (2.5-33)	31.00
Potassium	2.6 (0.1-13)	0.13
Aluminum	1.6 (0.5-3.2)	0.25
Magnesium	1.0 (0.1-2.5)	5.10
Iron	0.84 (0.2-2.1)	0.29
Phosphorus	0.53 (0.1-1.4)	0.06
Manganese	0.41 (0-1.3)	0.05
Sodium	0.19 (0-0.54)	0.07
Nitrogen	0.15 (0.02-0.77)	0.01
Microelements	**Concentration in mg/kg**	
Arsenic	6 (3-10)	.
Boron	123 (14-290)	.
Cadmium	3 (0.2-26)	0.7
Chromium	57 (7-368)	6.0
Copper	70 (37-207)	10.0
Lead	65 (16-137)	55.0
Mercury	1.9 (0-5)	.
Molybdenum	19 (0-123)	.
Nickel	20 (0-63)	20.0
Selenium	0.9 (0-11)	.
Zinc	233 (35-1250)	113.0
	Other Chemical Properties	
$CaCO_3$ Equivalent	43% (22-92%)	100%
pH	10.4 (9-13.5)	9.9
% Total solids	75 (31-100)	100.0

Source:

Risse, Mark, and Glen Harris. Soil Acidity and Liming Internet Inservice Training Website: "Best Management Practices for Wood Ash Used as an Agricultural Soil Amendment." Website accessed 09/20/11.
http://hubcap.clemson.edu/~blpprt/bestwoodash.html

[a] Mean and (Range) taken from analysis of 37 ash samples.