What is claimed is:

1. A composition, comprising:

at least one C6 monosaccharide hydrolysate; and

less than about 6750 ppm in total by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of elements;

wherein said elements are Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn.

2. A composition of claim 1,

wherein said C6 monosaccharide hydrolysate is extracted from lignocellulosic biomass.

3. A composition of claim 2,

wherein said C6 monosaccharide hydrolysate is processed from lignocellulosic biomass using supercritical, subcritical, or near critical fluid extraction, or a combination thereof.

4. A composition of claim 1, further comprising:

water.

5. A composition of claim 1,

wherein said C6 monosaccharide hydrolysate is present at a concentration of at least about 0.5 g/L.

6. A composition of claim 1,

wherein said C6 monosaccharide is glucose, galactose, mannose, fructose, or a mixture thereof.

7. A composition of claim 1, further comprising:

less than about 10 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of aluminum.

8. A composition of claim 1, further comprising:

less than about 350 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of calcium.

9. A composition of claim 1, further comprising:

less than about 425 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of iron.

10. A composition of claim 1, further comprising:

less than about 4500 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of sulfur.

11. A composition of claim 1,

wherein the weight ratio of said C6 monosaccharide hydrolysate to said elements is greater than about 25:1.

12. A composition of claim 1,

wherein level of said elements are measured by inductively coupled plasma emission spectroscopy.

13. A composition of claim 1, further comprising:

less than about 1500 mg of nitrogen per kg of total weight of water-soluble C6 saccharides.

14. A composition of claim 1, further comprising:

a weight ratio of the total mass of hydrogen and nitrogen to carbon of less than about 0.17.

15. A composition of claim 1, further comprising:

at least one water-soluble C6 oligosaccharide having a degree of polymerization of about 2 to about 15.

16. A composition, comprising:

at least one C6 monosaccharide hydrolysate;

less than about 10 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of aluminum;

less than about 350 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of calcium;

less than about 425 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of iron; and

less than about 4500 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of sulfur.

17. A composition of claim 16, further comprising:

less than about 6750 ppm in total by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of elements;

wherein said elements are Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn.

18. A composition, comprising:

at least one C6 monosaccharide hydrolysate; and

less than about 10 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of aluminum.

19. A composition of claim 18, further comprising:

less than about 6750 ppm in total by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of elements;

wherein said elements are Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn.

20. A composition, comprising:

at least one C6 monosaccharide hydrolysate; and

less than about 350 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of calcium.

21. A composition of claim 20, further comprising:

less than about 6750 ppm in total by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of elements;

wherein said elements are Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn.

22. A composition, comprising:

at least one C6 monosaccharide hydrolysate; and

less than about 425 mg, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of iron.

23. A composition of claim 22, further comprising:

less than about 6750 ppm in total by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of elements;

wherein said elements are Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn.

24. A composition, comprising:

at least one C6 monosaccharide hydrolysate; and

less than about 4500 ppm by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of sulfur.

25. A composition of claim 24, further comprising:

less than about 6750 ppm in total by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of elements;

wherein said elements are Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn.

What is claimed is:

1. A composition, comprising:

at least one water-soluble C5 monosaccharide hydrolysate;

at least one water-soluble C5 oligosaccharide hydrolysate having a degree of polymerization of about 2 to about 15; and

impurities; wherein said impurities comprise:

less than about 1950 ppm in total by weight, based on total weight of water-soluble C6 saccharide hydrolysate in said composition, of elements;

wherein said elements are Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn.

2. A composition of claim 1,

wherein said water-soluble C5 monosaccharide hydrolysate is extracted from lignocellulosic biomass.

3. A composition of claim 2,

wherein said C5 monosaccharide hydrolysate is processed from lignocellulosic biomass using supercritical, subcritical, or near critical fluid extraction, or a combination thereof.

4. A composition of claim 1, further comprising: water.

5. A composition of claim 1,

wherein said water-soluble C5 monosaccharide hydrolysate is present at a concentration of at least about 0.5 g/L.

6. A composition of claim 1,

wherein said waters-soluble C5 monosaccharide is xylose, arabinose, lyxose, ribose, or a mixture thereof.

7. A composition of claim 1, further comprising:

less than about 5 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of aluminum.

8. A composition of claim 1, further comprising:

less than about 300 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of calcium.

9. A composition of claim 1, further comprising:

less than about 10 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of iron.

10. A composition of claim 1, further comprising:

less than about 1000 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of sulfur.

11. A composition of claim 1,

wherein the weight ratio of said water-soluble C5 monosaccharide hydrolysate to said elements is greater than about 90:1.

12. A composition of claim 1,

wherein the level of said elements is measured by inductively coupled plasma emission spectroscopy.

13. A composition of claim 1, further comprising:

less than about 350 mg of nitrogen per kg of total weight of water-soluble C5 saccharide hydrolysate.

14. A composition of claim 1, further comprising:

a weight ratio of the total mass of hydrogen and nitrogen to carbon of less than about 0.17.

15. A composition of claim 1, further comprising:

at least one water-soluble C6 saccharide having a degree of polymerization of about 1 to about 15.

16. A composition of claim 1,

wherein said at least one water-soluble C5 oligosaccharide hydrolysate has a degree of polymerization of about 2 to about 6.

17. A composition, comprising:

at least one water-soluble C5 monosaccharide hydrolysate;

at least one water-soluble C5 oligosaccharide hydrolysate having a degree of polymerization of about 2 to about 15; and

impurities; wherein said impurities comprise:

less than about 5 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of aluminum;

less than about 300 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of calcium;

less than about 10 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of iron; and

less than about 1000 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of sulfur.

18. A composition of claim 17, further comprising:

less than about 1950 ppm in total by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of elements;

wherein said elements are Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Se, Si, Sn, Sr, Ti, Tl, V, and Zn.

19. A composition of claim 17, further comprising:

at least one water-soluble C6 saccharide having a degree of polymerization of about 1 to about 15.

20. A composition, comprising:

at least one water-soluble C5 monosaccharide hydrolysate;

at least one water-soluble C5 oligosaccharide hydrolysate having a degree of polymerization of about 2 to about 15; and

impurities; wherein said impurities comprise:

less than about 5 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of aluminum.

21. A composition, comprising:

at least one water-soluble C5 monosaccharide hydrolysate;

at least one water-soluble C5 oligosaccharide hydrolysate having a degree of polymerization of about 2 to about 15; and

impurities; wherein said impurities comprise:

less than about 300 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of calcium.

22. A composition, comprising:

at least one water-soluble C5 monosaccharide hydrolysate; and

at least one water-soluble C5 oligosaccharide hydrolysate having a degree of polymerization of about 2 to about 15; and

impurities; wherein said impurities comprise:

less than about 10 ppm, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of iron.

23. A composition, comprising:

at least one water-soluble C5 monosaccharide hydrolysate; and

at least one water-soluble C5 oligosaccharide hydrolysate having a degree of polymerization of about 2 to about 15; and

impurities; wherein said impurities comprise:

less than about 1000 ppm by weight, based on total weight of water-soluble C5 saccharide hydrolysate in said composition, of sulfur.