What is claimed is:

1. A composition, comprising:

at least one water-soluble C6 oligosaccharide hydrolysate;

optionally, at least one water-soluble C6 monosaccharide hydrolysate; and

less than about 5250 ppm in total by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide 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 C6 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of about 2 to about 15.

3. A composition of claim 1,

wherein said water-soluble C6 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of about 2 to about 13.

4. A composition of claim 1,

wherein said water-soluble C6 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of about 2 to about 10.

5. A composition of claim 1,

wherein said water-soluble C6 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of about 2 to about 6.

6. A composition of claim 1, further comprising:

at least one water-soluble C6 monosaccharide hydrolysate.

7. A composition of claim 6,

wherein said water-soluble C6 monosaccharide hydrolysate is glucose, galactose, mannose, fructose, or a mixture thereof.

8. A composition of claim 1,

wherein the ratio of the total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate to said elements is greater than about 45:1.

9. A composition of claim 1, further comprising:

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

10. A composition of claim 1, further comprising:

less than about 3000 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of calcium.

11. A composition of claim 1, further comprising:

less than about 350 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of iron.

12. A composition of claim 1, further comprising:

less than about 1000 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of sulfur.

13. A composition of claim 1,

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

14. A composition of claim 1,

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

15. A composition of claim 1, further comprising:

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

16. A composition of claim 1,

wherein the weight ratio of collective mass of hydrogen and nitrogen to mass of carbon present in said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate is less than about 0.14.

17. A composition, comprising:

at least one water-soluble C6 oligosaccharide hydrolysate;

optionally, at least one water-soluble C6 monosaccharide hydrolysate; and

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

less than about 3000 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of calcium;

less than about 350 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of iron; and

less than about 1000 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of sulfur.

18. A composition of claim 17, further comprising:

less than about 5250 ppm in total by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide 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, comprising:

at least one water-soluble C6 oligosaccharide hydrolysate;

optionally, at least one water-soluble C6 monosaccharide hydrolysate; and

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

20. A composition of claim 19, further comprising:

less than about 5250 ppm in total by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide 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.

21. A composition, comprising:

at least one water-soluble C6 oligosaccharide hydrolysate;

optionally, at least one water-soluble C6 monosaccharide hydrolysate; and

less than about 3000 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of calcium.

22. A composition of claim 21, further comprising:

less than about 5250 ppm in total by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide 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.

23. A composition, comprising:

at least one water-soluble C6 oligosaccharide hydrolysate;

optionally, at least one water-soluble C6 monosaccharide hydrolysate; and

less than about 350 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of iron.

24. A composition of claim 23, further comprising:

less than about 5250 ppm in total by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide 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.

25. A composition, comprising:

at least one water-soluble C6 oligosaccharide hydrolysate;

optionally, at least one water-soluble C6 monosaccharide hydrolysate; and

less than about 1000 ppm by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of sulfur.

26. A composition of claim 25, further comprising:

less than about 5250 ppm in total by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide 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.

27. A composition of claim 1, 17, 19, 21, 23, or 25,

wherein said water-soluble C6 oligosaccharide hydrolysate comprises:

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 disaccharides;

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 trisaccharides;

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 tetrasaccharides;

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 pentasaccharides; and

about 10% by weight to about 50% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 saccharides having at a degree of polymerization of at least about 6.

28. A composition of claim 27, further comprising:

about 7.5% by weight to about 20% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 monosaccharides.

29. A composition, comprising:

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 disaccharides;

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 trisaccharides;

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 tetrasaccharides;

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 pentasaccharides; and

about 10% by weight to about 50% by weight, based on total weight of C6 saccharides present in said composition, of C6 saccharides having at a degree of polymerization of at least about 6.

30. A composition of claim 29,

wherein said C6 disaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

31. A composition of claim 29,

wherein said C6 trisaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

32. A composition of claim 29,

wherein said C6 tetrasaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

33. A composition of claim 29,

wherein said C6 pentasaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

34. A composition of claim 29,

wherein said C6 saccharides having at a degree of polymerization of at least about 6 are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

35. A composition of claim 29, further comprising:

about 5% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition, of C6 monosaccharides.

36. A composition of claim 29, further comprising water.

37. A composition, comprising:

about 80% by weight to about 95% by weight, based on total weight of C6 saccharides present in said composition, of water-soluble C6 oligosaccharides;

wherein said water-soluble C6 oligosaccharides have a degree of polymerization of about 2 to about 15.

38. A composition of claim 37,

wherein said water-soluble C6 oligosaccharides are present at a level of about 80% by weight to about 92.5% by weight, based on total weight of C6 saccharides present in said composition.

39. A composition of claim 37,

wherein said water-soluble C6 oligosaccharides have a degree of polymerization of about 2 to about 6.

40. A composition of claim 37, further comprising:

about 5% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition, of C6 monosaccharides.

41. A composition of claim 37, further comprising water.

What is claimed is:

1. A composition, comprising:

at least one water-soluble C6 oligosaccharide hydrolysate;

optionally, at least one water-soluble C6 monosaccharide hydrolysate; and

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate, if present, in said composition, of C6 disaccharides;

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate, if present, in said composition, of C6 tetrasaccharides; and

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate, if present, in said composition, of C6 pentasaccharides,

wherein said hydrolysates are processed from biomass.

2. A composition of claim 1,

wherein said water-soluble C6 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of 2 to about 15.

3. A composition of claim 1,

wherein said water-soluble C6 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of 2 to about 13.

4. A composition of claim 1,

wherein said water-soluble C6 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of 2 to about 10.

5. A composition of claim 1,

wherein said water-soluble C6 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of 2 to about 6.

6. A composition of claim 1, further comprising:

at least one water-soluble C6 monosaccharide hydrolysate.

7. A composition of claim 6,

wherein said water-soluble C6 monosaccharide hydrolysate is glucose, galactose, mannose, fructose, or a mixture thereof.

8. A composition of claim 1,

wherein said water-soluble C6 monosaccharide hydrolysate is present; and

wherein the ratio of the total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate to said elements is greater than about 45:1.

9. A composition of claim 1,

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

10. A composition of claim 1,

wherein the weight ratio of collective mass of hydrogen and nitrogen to mass of carbon present in said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate, if present, is less than about 0.14.

11. A composition, comprising:

at least one water-soluble C6 oligosaccharide hydrolysate;

at least one water-soluble C6 monosaccharide hydrolysate;

about 5% by weight to about 20% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 monosaccharides; and

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 pentasaccharides,

wherein said hydrolysates are processed from biomass.

12. A composition of claim 1,

wherein said water-soluble C6 oligosaccharide hydrolysate further comprises:

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate, if present, in said composition, of C6 trisaccharides;

about 10% by weight to about 50% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate, if present, in said composition, of C6 saccharides having at a degree of polymerization of at least about 6.

13. A composition of claim 12, wherein said C6 monosaccharides are present at a level of about 7.5% by weight to about 20% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition.

14. A composition, comprising:

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 disaccharides;

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 trisaccharides;

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 tetrasaccharides;

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 pentasaccharides;

about 10% by weight to about 50% by weight, based on total weight of C6 saccharides present in said composition, of C6 saccharides having at a degree of polymerization of at least about 6; and

about 5% by weight to about 20% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 monosaccharides,

wherein said hydrolysates are processed from biomass.

15. A composition of claim 14,

wherein said C6 disaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

16. A composition of claim 14,

wherein said C6 trisaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

17. A composition of claim 14,

wherein said C6 tetrasaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

18. A composition of claim 14,

wherein said C6 pentasaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

19. A composition of claim 14,

wherein said C6 saccharides having a degree of polymerization of at least about 6 are present at a level of about 10% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition.

20. A composition of claim 14, further comprising water.

21. A composition, comprising:

about 80% by weight to about 95% by weight, based on total weight of C6 saccharides present in said composition, of water-soluble C6 oligosaccharides;

wherein said water-soluble C6 oligosaccharides have a degree of polymerization of 2 to about 15;

about 5% by weight to about 20% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 monosaccharides;

about 10% by weight to about 25% by weight, based on total weight of C6 saccharides present in said composition, of C6 tetrasaccharides; and

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 pentasaccharides,

wherein said hydrolysates are processed from biomass.

22. A composition of claim 21,

wherein said water-soluble C6 oligosaccharides are present at a level of about 80% by weight to about 92.5% by weight, based on total weight of C6 saccharides present in said composition.

23. A composition of claim 21,

wherein said water-soluble C6 oligosaccharides have a degree of polymerization of 2 to about 6.

24. A composition of claim 21, further comprising:

about 7.5% by weight to about 20% by weight, based on total weight of C6 saccharides present in said composition, of C6 monosaccharides.

25. A composition of claim 21, further comprising water.

26. A composition of claim 11,

wherein said water-soluble C6 oligosaccharide hydrolysate further comprises:

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 disaccharides;

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 trisaccharides; and

about 10% by weight to about 25% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate in said composition, of C6 tetrasaccharides.

27. A composition of claim 1,

wherein said C6 monosaccharides are present at a level of about 5% by weight to about 20% by weight, based on total weight of said water-soluble C6 oligosaccharide hydrolysate and said water-soluble C6 monosaccharide hydrolysate, is present, in said composition.