What is claimed is:

1. A composition, comprising:

at least one water-soluble C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate; and

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 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 C5 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of at least about 2 to about 28.

3. A composition of claim 1,

wherein said water-soluble C5 oligosaccharide hydrolysate comprises a C5 oligosaccharide having a degree of polymerization of at least about 2 to about 16.

4. A composition of claim 1,

wherein said water-soluble C5 oligosaccharide hydrolysate comprises a C5 oligosaccharide having a degree of polymerization of at least about 2 to about 10.

5. A composition of claim 1,

wherein said water-soluble C5 oligosaccharide hydrolysate comprises a C6 oligosaccharide having a degree of polymerization of at least about 2 to about 5.

6. A composition of claim 1, further comprising:

at least one water-soluble C5 monosaccharide hydrolysate.

7. A composition of claim 6,

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

8. A composition of claim 1,

wherein the ratio of the total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition is greater than about 75:1.

9. A composition of claim 1, further comprising:

less than about 10 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of aluminum.

10. A composition of claim 1, further comprising:

less than about 2300 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of calcium.

11. A composition of claim 1, further comprising:

less than about 50 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of iron.

12. A composition of claim 1, further comprising:

less than about 150 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of sulfur.

13. A composition of claim 1,

wherein said water-soluble C5 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 level of said elements are measured by inductively coupled plasma emission spectroscopy.

15. A composition of claim 1, further comprising:

less than about 350 mg of nitrogen per kg of total weight of water-soluble C5 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 C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate is less than about 0.14.

17. A composition, comprising:

at least one water-soluble C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate;

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

less than about 2300 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of calcium;

less than about 50 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of iron; and

less than about 150 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of sulfur.

18. A composition of claim 17, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 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 C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate; and

less than about 10 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of aluminum.

20. A composition of claim 19, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 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 C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate; and

less than about 2300 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of calcium.

22. A composition of claim 21, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 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 C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate; and

less than about 50 mg by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of iron.

24. A composition of claim 23, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 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 C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate; and

less than about 150 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of sulfur.

26. A composition of claim 25, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 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 C5 oligosaccharide hydrolysate comprises:

about 15% by weight, to about 30% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 disaccharides;

about 10% by weight, to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 trisaccharides;

about 5% by weight, to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 tetrasaccharides;

about 2% by weight, to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 pentasaccharides; and

about 10% by weight, to about 35% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 saccharides having at a degree of polymerization of at least about 6.

28. A composition of claim 27, further comprising:

about 10% by weight, to about 25% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 monosaccharides.

29. A composition, comprising:

about 15% by weight, to about 30% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 disaccharides;

about 10% by weight, to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 trisaccharides;

about 5% by weight, to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 tetrasaccharides;

about 2% by weight, to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 pentasaccharides; and

about 10% by weight, to about 35% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 saccharides having at a degree of polymerization of at least about 6.

30. A composition of claim 29,

wherein said C5 disaccharides are present at a level of about 17.5% by weight to about 25% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition.

31. A composition of claim 29,

wherein said C5 trisaccharides are present at a level of about 12.5% by weight to about 17.5% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition.

32. A composition of claim 29,

wherein said C5 tetrasaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition.

33. A composition of claim 29,

wherein said C5 pentasaccharides are present at a level of about 2.5% by weight to about 15% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition.

34. A composition of claim 29,

wherein said C5 saccharides having at a degree of polymerization of at least about 6 are present at a level of about 12.5% by weight to about 30% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition.

35. A composition of claim 29, further comprising:

about 10% by weight, to about 25% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 monosaccharides.

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

37. A composition, comprising:

about 75% by weight to about 90% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of water-soluble C5 oligosaccharides;

wherein said water-soluble C5 oligosaccharides have a degree of polymerization of about 2 to about 28.

38. A composition of claim 37,

wherein said water-soluble C5 oligosaccharides are present at a level of about 80% by weight to about 90% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition.

39. A composition of claim 37,

wherein said water-soluble C5 oligosaccharides have a degree of polymerization of about 2 to about 16.

40. A composition of claim 37,

wherein said water-soluble C5 oligosaccharides have a degree of polymerization of about 2 to about 10.

41. A composition of claim 37,

wherein said water-soluble C5 oligosaccharides have a degree of polymerization of about 2 to about 5.

42. A composition of claim 37, further comprising:

about 10% by weight, to about 25% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 monosaccharides.

43. A composition of claim 31, further comprising water.

What is claimed is:

1. A composition, comprising:

at least one water-soluble C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate; and

12.5% by weight to about 17.5% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 trisaccharides,

wherein said hydrolysates are processed from biomass.

2. A composition of claim 1,

wherein said water-soluble C5 oligosaccharide hydrolysate comprises a C5 oligosaccharide having a degree of polymerization of at least 2 to about 28.

3. A composition of claim 1,

wherein said water-soluble C5 oligosaccharide hydrolysate comprises a C5 oligosaccharide having a degree of polymerization of at least 2 to about 16.

4. A composition of claim 1,

wherein said water-soluble C5 oligosaccharide hydrolysate comprises a C5 oligosaccharide having a degree of polymerization of at least 2 to about 10.

5. A composition of claim 1,

wherein said water-soluble C5 oligosaccharide hydrolysate comprises a C5 oligosaccharide having a degree of polymerization of at least 2 to about 5.

6. A composition of claim 1, further comprising:

at least one water-soluble C5 monosaccharide hydrolysate.

7. A composition of claim 6,

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

8. A composition of claim 1,

wherein said water soluble C5 monosaccharide hydrolysate is present; and

wherein the ratio of the total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition is greater than about 75:1.

9. A composition of claim 1, further comprising:

less than about 10 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of aluminum.

10. A composition of claim 1, further comprising:

less than about 2300 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of calcium.

11. A composition of claim 1, further comprising:

less than about 50 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of iron.

12. A composition of claim 1, further comprising:

less than about 150 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of sulfur.

13. A composition of claim 1,

wherein said water-soluble C5 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 level of said elements are measured by inductively coupled plasma emission spectroscopy.

15. A composition of claim 1, further comprising:

less than about 350 mg of nitrogen per kg of total weight of water-soluble C5 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 C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, is less than about 0.14.

17. A composition, comprising:

at least one water-soluble C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate; and impurities,

wherein said impurities are present at a level of:

less than about 10 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of aluminum;

less than about 2300 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of calcium;

less than about 50 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of iron; and

less than about 150 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of sulfur; and

12.5% by weight to about 17.5% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 trisaccharides,

wherein said hydrolysates are processed from biomass.

18. A composition of claim 17, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, 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 C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate;

impurities,

wherein said impurities are present at a level of less than about 10 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of aluminum; and

12.5% by weight to about 17.5% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 trisaccharides,

wherein said hydrolysates are processed from biomass.

20. A composition of claim 19, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, 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 C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate;

impurities,

wherein said impurities are present at a level of less than about 2300 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of calcium; and

12.5% by weight to about 17.5% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 trisaccharides,

wherein said hydrolysates are processed from biomass.

22. A composition of claim 21, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, 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 C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate; and

impurities,

wherein said impurities are present at a level of less than about 50 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of iron; and

12.5% by weight to about 17.5% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 trisaccharides,

wherein said hydrolysates are processed from biomass.

24. A composition of claim 23, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, 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 C5 oligosaccharide hydrolysate;

optionally, at least one water-soluble C5 monosaccharide hydrolysate;

impurities,

wherein said impurities are present at a level of less than about 150 ppm by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, in said composition, of sulfur; and

12.5% by weight to about 17.5% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 trisaccharides,

wherein said hydrolysates are processed from biomass.

26. A composition of claim 25, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, 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 C5 oligosaccharide hydrolysate comprises:

about 15% by weight, to about 30% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 disaccharides;

about 5% by weight, to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 tetrasaccharides;

about 2% by weight, to about 20% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 pentasaccharides; and

about 10% by weight, to about 35% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 saccharides having at a degree of polymerization of at least about 6.

28. A composition of claim 27, further comprising:

about 10% by weight, to about 25% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 monosaccharides.

29. A composition, comprising:

about 15% by weight, to about 30% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 disaccharides;

about 12.5% by weight, to about 17.5% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 trisaccharides;

about 5% by weight, to about 20% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 tetrasaccharides;

about 2% by weight, to about 20% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 pentasaccharides; and

about 10% by weight, to about 35% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 saccharides having at a degree of polymerization of at least about 6;

wherein said hydrolysates are processed from biomass.

30. A composition of claim 29,

wherein said C5 disaccharides are present at a level of 17.5% by weight to about 25% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition.

31. A composition of claim 29,

wherein said C5 tetrasaccharides are present at a level of about 10% by weight to about 20% by weight, based on total weight of said water-soluble C5

oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition.

32. A composition of claim 29,

wherein said C5 pentasaccharides are present at a level of about 2.5% by weight to about 15% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition.

33. A composition of claim 29,

wherein said C5 saccharides having at a degree of polymerization of at least about 6 are present at a level of about 12.5% by weight to about 30% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition.

34. A composition of claim 29, further comprising:

about 10% by weight, to about 25% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate in said composition, of C5 monosaccharides.

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

36. A composition, comprising:

about 75% by weight to about 90% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of water-soluble C5 oligosaccharides;

wherein said water-soluble C5 oligosaccharides have a degree of polymerization of 2 to about 28; and

12.5% by weight to about 17.5% by weight, based on total weight of water-soluble C5 oligosaccharide hydrolysate and water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 trisaccharides,

wherein said hydrolysates are processed from biomass.

37. A composition of claim 36,

wherein said water-soluble C5 oligosaccharides are present at a level of about 80% by weight to about 90% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition.

38. A composition of claim 36,

wherein said water-soluble C5 oligosaccharides have a degree of polymerization of 2 to about 16.

39. A composition of claim 36,

wherein said water-soluble C5 oligosaccharides have a degree of polymerization of about 2 to about 10.

40. A composition of claim 36,

wherein said water-soluble C5 oligosaccharides have a degree of polymerization of about 2 to about 5.

41. A composition of claim 36, further comprising:

about 10% by weight, to about 25% by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide hydrolysate, if present, in said composition, of C5 monosaccharides.

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

43. A composition of claim 1, further comprising:

less than about 3700 ppm in total by weight, based on total weight of said water-soluble C5 oligosaccharide hydrolysate and said water-soluble C5 monosaccharide, if present, 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.