WHAT IS CLAIMED IS:

1. A method comprising;

pretreating a cellulosic or lignocellulosic material with ionizing radiation under conditions selected to increase the brittleness of the cellulosic or lignocellulosic material and mechanically treating the ionized cellulosic or lignocellulosic material in the dry state;

enzymatically hydrolyzing the radiated cellulosic or lignocellulosic material to obtain a saccharification mixture comprising sugars; and

concentrating the saccharification mixture comprising sugars to provide a concentrate, wherein the sugar content of the concentrate comprises from about 10 to about 70 percent by weight glucose and from about 2 to about 35 percent by weight xylose.

2. The method of claim 1, wherein the concentrate comprises from about 15 to about 65 percent by weight glucose and from about 2 to about 30 percent by weight xylose.

3. The method of claim 1 or 2 in which the concentrate has a total sugar concentration of from about 17 to about 90 weight percent by weight.

4. The method of claim 3, wherein the total sugar concentration is from about 20 to about 75 percent by weight.

5. The method of claim 1, in which the concentrate further comprises water.

6. The method of claim 1, wherein the treated biomass material has been exposed to accelerated electrons to a dose of at least 10 Mrad.

7. The method of claim 1, wherein the biomass comprises corn cobs.