WE CLAIM:

1. A macerator for processing a slurry, the macerator comprising:

a housing that defines a chamber, an inlet, and an outlet, the inlet configured to receive a flow of slurry, and

three or more concentric bodies, each concentric body comprising a plurality of apertures to define a flow path through each concentric body, and one or more of the concentric bodies rotates relative to an adjacent concentric body,

wherein the slurry traverses the flow path from the inlet to the outlet via the apertures of each concentric body to produce an outlet slurry, and

wherein the apertures cut particles of the slurry as the particles traverse the apertures in the flow path to produce cut particles that are smaller than the particles in the slurry.

2. The macerator of claim 1, wherein each concentric body is separated from each other by up to about 0.2 mm.

3. The macerator of claim 1, wherein the apertures comprise a plurality of slots that are angled with respect to a vertical or axial axis of the concentric body, or the axis of rotation of the macerator.

4. The macerator of claim 3, wherein the slots of adjacent concentric bodies are angled opposite to each other relative to the axis of rotation of the macerator.

5. The macerator of claim 3 wherein the slots are angled 3 to 15 ° relative to the axis of rotation of the macerator.

6. The macerator of claim 3 wherein the width of the slot of the concentric body is at least 3.5 to 8.5x of an average particle size of the particles traversing the slot of that concentric body.

7. The macerator of claim 3, wherein the three or more concentric bodies comprise an inner concentric body and an outer concentric body and the slots of the outer concentric body are 1.5 to about 2.5 times wider than the slots of the inner concentric body.

8. The macerator of claim 6, wherein the slots vary in width from an outer surface of the concentric body to an inner surface of the concentric body and wherein the width of the slots at the outlet surface is greater than a width of the slots at the inner surface.

9. The macerator of claim 6, wherein the width of the slots at an outlet side or surface is greater than a width of the slots at an inlet side or surface.

10. The macerator of claim 7, wherein

- the inner concentric body is rotatable about an axial axis, and the outer concentric body is stationary, or
- the outer concentric body is rotatable about an axial axis, and the inner concentric body is stationary, or
- the inner concentric body and the outer concentric body are rotatable about an axial axis, wherein the inner concentric body and the outer concentric body rotate in opposite directions.

11. The macerator of claim 7, wherein the macerator comprises

an inner body shaft, the inner body shaft configured to be coupled to one or more of the inner concentric bodies to allow for rotation of the one or more inner concentric bodies relative to an axial axis of the one or more inner concentric bodies, and

an outer body shaft, the outer body shaft configured to be coupled to one or more of the outer concentric bodies to allow for rotation of the one or more outer concentric bodies relative to an axial axis of the one or more outer concentric bodies.

12. The macerator of claim 1, wherein a first concentric body, of the three or more concentric bodies, comprises an inlet body and an oulet body, wherein a width or largest dimension of the apertures of the inlet body is "A" mm, and a width or largest dimension of the apertures of the outlet body is about 0.8 x "A" mm.

13. The macerator of claim 5 wherein the slots of successive concentric bodies are angled oppositely to each other.

14. The macerator of claim 1 comprising 4, 5, 6, or 7 concentric bodies.