CLAIMS

The invention is claimed as follows:

1. A method of balancing an aseptic ~~a continuous product~~ production ~~flow~~ rate with an aseptic ~~a~~ package filling rate performed by a continuous food product production system, the method comprising:
applying an averaging level control scheme to a food manufacturing process;
wherein the averaging level control scheme to a food manufacturing process, ~~characterized in that:~~
~~(i) the averaging level control scheme comprises setting a target flow rate for continuous product production for the food manufacturing process;~~
~~(ii) wherein the target flow rate is changed based on a package filling rate;~~
~~(iii)~~ wherein the averaging level control scheme comprises:
setting a target flow rate for ~~a~~the continuous food product production system comprising a buffer tank and a speed indicating controller;
setting a maximum level for a product in the buffer tank at any level that prevents overflow of the food product in the buffer tank and a shutting down of an aseptic sterilizer provided within the continuous food product production system;
measuring a level of the product in the buffer tank; and
triggering the speed indicating controller to lower the target flow rate when a~~the~~ measured level rises above the set maximum level.

2. The method according to Claim 1, wherein the food manufacturing process comprises aseptic sterilization of a food product.

3. The method according to Claim 1 or Claim 2, wherein the food manufacturing process comprises package filling.

4. The method according to Claim 3, wherein the package filling is aseptic package filling.

5. The method according to any one of Claims 1~~-4 to Claim 4~~, wherein the speed indicating controller controls a flow rate of the food product.~~food manufacturing process comprises a speed indicating controller.~~

6. The method according to any one of Claims 1-5 ~~Claim 5~~, wherein the level of the food product in the buffer tank is measured by a level indicating controller by measuring a characteristic of the food product selected from the group consisting of weight, depth, volume, pressure, differential pressure, and combinations thereof.~~speed indicating controller controls a flow rate of the food product.~~

~~7. The method according to any one of Claims 1 to Claim 6, wherein the food manufacturing process comprises a buffer tank and a level indicating controller, wherein the level of the food product in the buffer tank is measured.~~

~~8. The method according to Claim 7, wherein the level is measured by a characteristic of the food product selected from the group consisting of weight, depth, volume, pressure, differential pressure, and combinations thereof.~~

~~9~~7. The method according to Claim ~~7~~6, wherein the level is measured through instrumentation methods selected from the group consisting of ultrasonics, radar, load cells, and combinations thereof.

8. The method according to any one of Claims 1-7, wherein the target flow rate is changed based on a package filling rate.

~~10~~9. The method according to any one of Claims 1-8~~Claim 1~~, wherein the speed indicating controller controls a pump that pumps a product supply into the continuous food product production system.

~~11. The method according to Claim 1, wherein the controller controls a variable speed pump that pumps a product supply into the continuous food product production system.~~

~~12~~10. The method according to any one of claims 1-9~~Claim 1~~, wherein the averaging level control scheme comprises:

aseptically sterilizing ~~a~~the food product using the aseptic sterilizer;~~a sterilization system;~~

filling packages with the product using a package filling machine; and

coordinating a rate of aseptic sterilization of the product with a rate of aseptic package filling.

~~13~~11. The method according to any one of Claims 1-10 ~~to Claim 12~~, wherein the product is a baby food product.

~~14~~12. The method according to any one of Claims 1-10 ~~to Claim 12~~, wherein the product is a pureed food.

~~15~~13. The method according to any one of claims 1-12~~Claim 1~~, wherein the method prevents aseptic sterilizer stoppage during an aseptic package filling process by adjusting a rate of flow of the product from at least one supply tank to at least one aseptic sterilizer and at least one buffer tank based on measurements of a product supply flow rate and a product level in the at least one buffer tank.

14. A food manufacturing system for balancing an aseptic sterilization production rate with an aseptic package filling rate configured to perform any one of the method as claimed in claims 1-13.

~~16~~15. The~~A~~ food manufacturing system according to claim 14 comprising:

a product supply;

a machine for continuous product production comprising a variable speed pump;

a buffer tank;

a level indicating controller that measures product level in the buffer tank;

a speed indicating controller responsive to the level indicating controller; and

a package filling machine that when stopped causes the product level in the buffer tank to rise, causing the speed indicating controller to change a speed of the variable speed pump.~~;~~

~~and an averaging level control scheme adapted to carry out the method of any of claims 1 to 15.~~