CLAIMS

1. A process for the treatment of organic waste comprising the steps of:
introducing a feed stream comprising organic waste into a first reactor;
generating an effluent from the first reactor; and
providing the effluent from the first reactor to a second reactor,
wherein the first reactor is maintained at a pH of from about 6.5 to about 10.0.

2. The process of Claim 1, wherein the first reactor is maintained at a pH of from about 7.0 to about 9.0.

3. The process of Claim 2, wherein the first reactor is maintained at a pH of from about 7.5 to about 8.5.

4. The process of Claim 3, wherein the first reactor is maintained at a pH of about 8.0.

5. The process of any one of the preceding claims, wherein the first reactor is primarily a hydrolysis/acidogenic reactor.

6. The process of any one of the preceding claims, wherein the second reactor is primarily a methanogenic reactor or is a single stage anaerobic reactor.

7. The process of any one of the preceding claims, wherein the first reactor and/or second reactor is operated at a temperature of from about 35 to about 60°C.

8. The process of Claim 7, wherein the first reactor is operated at a temperature of from about 50 to about 60°C.

9. The process of Claim 7 or Claim 8, wherein the second reactor is operated at a temperature of from about 35 to about 49°C.

10. The process of any one of the preceding claims, wherein the first reactor is operated with a hydraulic retention time of from about two hours to about five days.

11. The process of Claim 10, wherein the first reactor is operated with a hydraulic retention time of from about three days to about five days.

12. The process of any one of the preceding claims, wherein the second reactor is operated at a pH of from about 6.5 to about 7.9.

13. The process of Claim 12, wherein the second reactor is operated at a pH of from about 6.8 to about 7.4.

14. The process of Claim 13, wherein the second reactor is operated at a pH of about 7.1.

15. The process of any one of the preceding claims, wherein the organic waste comprises biodegradeable solids.

16. The process of Claim 15, wherein the organic waste is a sludge, food waste, oily waste, solid waste with a high organic content or any combination thereof.

17. The process of Claim 16, wherein the sludge is a waste sludge, a secondary sludge, an oily sludge, an industrial sludge or a sewage sludge, or any combination thereof.

18. The process of any one of the preceding claims, wherein the first and second reactors further comprise pH, oxidation reduction potential (ORP) and temperature controllers.

19. A waste treatment plant using the process of Claims 1 to 18.

20. The waste treatment plant of Claim 19, wherein the waste treatment plant is a wastewater treatment plant.

21. A reactor system for the treatment of biodegradeable waste, comprising a first reactor and a second reactor that is downstream of the first reactor and is in fluid connection therewith, wherein the first and second reactors are adapted to use the process of Claims 1 to 18.

22. The reactor system of Claim 21, wherein the first reactor is primarily a hydrolysis/acidogenic reactor.

23. The reactor system of Claim 21 or Claim 22, wherein the second reactor is primarily a methanogenic reactor or is a single stage anaerobic reactor.

24. The reactor system of any one of Claims 21 to 23, wherein the first and second reactors further comprise pH, oxidation reduction potential (ORP) and temperature controllers.

CLAIMS

1. A process for the treatment of organic waste comprising the steps of:
introducing a feed stream comprising organic waste into a first reactor;
generating an effluent from the first reactor; and
providing the effluent from the first reactor to a second reactor,
wherein the first reactor is maintained at a pH of from 8.0 to 10.0.

2. The process of Claim 1, wherein the first reactor is maintained at a pH of from 8.0 to 9.0.

3. The process of Claim 2, wherein the first reactor is maintained at a pH of from 8.0 to 8.5.

4. The process of Claim 3, wherein the first reactor is maintained at a pH of 8.0.

5. The process of any one of the preceding claims, wherein the first reactor is primarily a hydrolysis/acidogenic reactor.

6. The process of claim 1, wherein the second reactor is primarily a methanogenic reactor or is a single stage anaerobic reactor.

7. The process of claim 1, wherein the first reactor and/or second reactor is operated at a temperature of from 35 to 60°C.

8. The process of Claim 7, wherein the first reactor is operated at a temperature of from 50 to 60°C.

9. The process of Claim 7, wherein the second reactor is operated at a temperature of from 35 to 49°C.

10. The process of claim 1, wherein the first reactor is operated with a hydraulic retention time of from two hours to five days.

11. The process of Claim 10, wherein the first reactor is operated with a hydraulic retention time of from three days to five days.

12. The process of claim 1, wherein the second reactor is operated at a pH of from 6.5 to 7.9.

13. The process of Claim 12, wherein the second reactor is operated at a pH of from 6.8 to 7.4.

14. The process of Claim 13, wherein the second reactor is operated at a pH of 7.1.

15. The process of claim 1, wherein the organic waste comprises biodegradeable solids.

16. The process of Claim 15, wherein the organic waste is a sludge, food waste, oily waste, solid waste with a high organic content or any combination thereof.

17. The process of Claim 16, wherein the sludge is a waste sludge, a secondary sludge, an oily sludge, an industrial sludge or a sewage sludge, or any combination thereof.

18. The process of claim 1, wherein the first and second reactors further comprise pH, oxidation reduction potential (ORP) and temperature controllers.

19. A waste treatment plant using the process of Claim 1.

20. The waste treatment plant of Claim 19, wherein the waste treatment plant is a wastewater treatment plant.

21. A reactor system for the treatment of biodegradeable waste, comprising a first reactor and a second reactor that is downstream of the first reactor and is in fluid connection therewith, wherein the first and second reactors are adapted to use the process of Claim 1.

22. The reactor system of Claim 21, wherein the first reactor is primarily a hydrolysis/acidogenic reactor.

23. The reactor system of Claim 21, wherein the second reactor is primarily a methanogenic reactor or is a single stage anaerobic reactor.

24. The reactor system of Claim 21, wherein the first and second reactors further comprise pH, oxidation reduction potential (ORP) and temperature controllers.