Claims

1. Method for waste processing of mixed waste comprising an organic compostable waste portion and an organic non-compostable waste portion, comprising the steps of:
- shredding a load of the mixed waste in a shredder unit (2) thereby generating a shredded mixed waste load;
- transferring the shredded mixed waste load into a composting unit (3);
- composting the organic compostable waste portion of the shredded mixed waste load in a microbial environment in the composting unit (3) thereby generating a mixed waste intermediate product;
- transferring the mixed waste intermediate product from the composting unit (3) into a heating unit (4);
- heating the mixed waste intermediate product to a temperature higher than in the composting unit (3) for drying the mixed waste intermediate product to a target moisture level lower than an initial moisture level, thereby generating a product comprising compost and Refuse Derived Fuel; and
- transporting the product to an exit unit (6) when the target moisture level is reached, whereby the product transported to the exit has in comparison with the load of the mixed waste, a reduced moisture content, mass and volume.

2. Method for waste processing according to claim 1, wherein a temperature in the composting unit (3) is below 70 °C, preferably below 60 °C.

3. Method for waste processing according to claim 1 or 2, wherein a temperature in the heating unit (4) is below 110 °C, particularly in the range of 80 °C to 100 °C.

4. Method for waste processing according to any of the preceding claims, wherein a mass of the mixed waste to be loaded into the shredder unit (2) is determined.

5. Method for waste processing according to any of the preceding claims, wherein the microbial environment is created by adding to the composting unit (3) microbes which at least partially degrade the organic compostable waste portion of the mixed waste to compost.

6. Method according to claim 5, wherein the microbes degrade the organic compostable waste portion to less than 25 vol.% of its initial volume within 24 hours.

7. Method for waste processing according to claim 5 or 6, wherein the microbes reduce an initial volume of the mixed waste load to less than 70 vol.% of the initial volume.

8. Method for waste processing according to any of the preceding claims, wherein condensation water is withdrawn from the heating unit (4).

9. Method for waste processing according to any of the preceding claims, wherein the product is segregated into compost and Refuse Derived Fuel.

10. Method for waste processing according to claim 9, wherein the Refuse Derived Fuel is pelletized.

11. Method for waste processing according to any of the preceding claims, wherein the target moisture level is at least below 50 wt.% of the initial moisture level.

12. Apparatus for waste processing of mixed waste comprising an organic compostable waste portion and an organic non-compostable waste portion, the apparatus comprising:
- a shredder unit (2) for shredding a load of the mixed waste thereby generating a shredded mixed waste load;
- a composting unit (3) providing a microbial environment for composting the organic compostable waste portion of the shredded mixed waste load thereby generating a mixed waste intermediate product;
- a heating unit (4) providing a heating environment for heating the mixed waste intermediate product to a temperature higher than in the composting unit (3) thereby generating a product comprising compost and Refuse Derived Fuel;
- at least one control unit for controlling a moisture level of matter treated in the composting unit (3) and/or in the heating unit (4);
- an exit unit (6) from which the product can be withdrawn; and
- at least one means for transferring the mixed waste intermediate product from the composting unit (3) to the heating unit (4) such as a conveyor means (5).

13. Apparatus for waste processing according to claim 12, wherein a scale unit (11) is provided for determining a mass of the mixed waste load prior to loading into the shredder unit (2).

14. Apparatus for waste processing according to claim 12 or 13, wherein the at least one control unit is configured to control a mass of the mixed waste load, a temperature in the composting unit (3) and/or a temperature in the heating unit (4).

15. Apparatus for waste processing according to any of the claims 12 to 14, wherein a condensation system is arranged at least at the heating unit (4), which is designed to extract condensation water from the heating unit (4).

16. Apparatus for waste processing according to any of claims 12 to 15, wherein the composting unit (3) and the heating unit (4) are arranged in series, one after another.

17. Apparatus for waste processing according to any of claims 12 to 15, wherein the composting unit (3) is stacked on top of the heating unit (4).

18. Apparatus for waste processing according to any of claims 12 to 17, the apparatus being small scale for erecting and using it decentralized, on-site at or near a place where the mixed waste to be processed is generated, e. g. in apartment buildings, housing estates, office sites and/or sheltered accommodations.

19. System for waste processing of mixed waste comprising an organic compostable waste portion and an organic non-compostable waste portion, the system comprising at least two apparatuses for waste processing according to any of the preceding claims 12 to 15, a facility comprising a separation unit designed for separating the product into the compost and a non-compost portion, and a pellet plant for pelletizing the non-compost portion to the refuse derived fuel.