P A T E N T C L A I M S

1. Method for thermal biological breakdown and dewatering of biomass, c h a r a c t e r i s e d i n that the method comprises the following steps:

   - lead the biological residue material (8) from a digesting tank (6) to a dewatering device (9) and dewater the material to a typical 15-25% dry matter,
   - lead the dewatered material (10) to a device (12) and carry out a thermal hydrolysis at a typical 145-170 ˚C for typically 10-40 minutes,
   - subject the hydrolysed biomass (14) to a quick pressure reduction that results in a steam explosion in the biomass,
   - dewater the thermally hydrolysed and steam exploded hot biomass (14), typically at 85-105 ˚C in a closed dewatering unit (16), typically a centrifuge, to typically 35-60% dry matter,
   - cool the dewatered biomass (18) in a cooler (19), preferably an air-cooler and dewater the biomass further by evaporation to typically 40-75% dry matter,
   - lead the liquid phase (17) from the dewatering unit (16), which contains considerable amounts of hydrolysed organic matter upstream of the digesting tank (6) for increased production of biogas.

2. Method according to claim 1, c h a r a c t e r i s e d i n that foul smelling process gasses (15) formed in the pressure reduction and steam explosion step are captured and sent further for biological breakdown and odour elimination in the digesting tank (6).

3. Method according to claim 1, c h a r a c t e r i s e d i n that the moist cooling air containing some process gases from the air cooler (19) is led to combustion or washing in a scrubber or to breakdown in a biofilter.

4. Device for thermal biological breakdown and dewatering of biomass, c h a r a c t e r i s e d i n that the device contains in sequence:

   - A digesting tank (6) for degradation of the biomass,