

Physical pre-treatment to reduce wear and minimize waste disposal

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Yes:

- Household bio waste
- Organic waste bin
- Leftover food and kitchen waste
- Food past its life expectancy
- Failed batches



No:

- Energy crops
- Liquid Manure
- Grass and garden waste
- Chicken waste



- Focus on food waste – growing issue and receiving more attention
- Sand, grit, abrasive and oversize/plastics can be introduced to the process
- Grit removal
- Grit washing
- Packaging washing and compaction



- ⇒ Damage to pumps and pipework, scouring tanks, plus accumulation in digester/tanks
- ⇒ Higher than necessary repair costs and man entry into confined spaces
- ⇒ Downtime associated with these operations
- ⇒ Separation of sand, grit, glass & bones essential
- ⇒ 1-3% of inlet weight can be grit



Grit accumulates in tanks



Grit content damages pumps & scours tanks

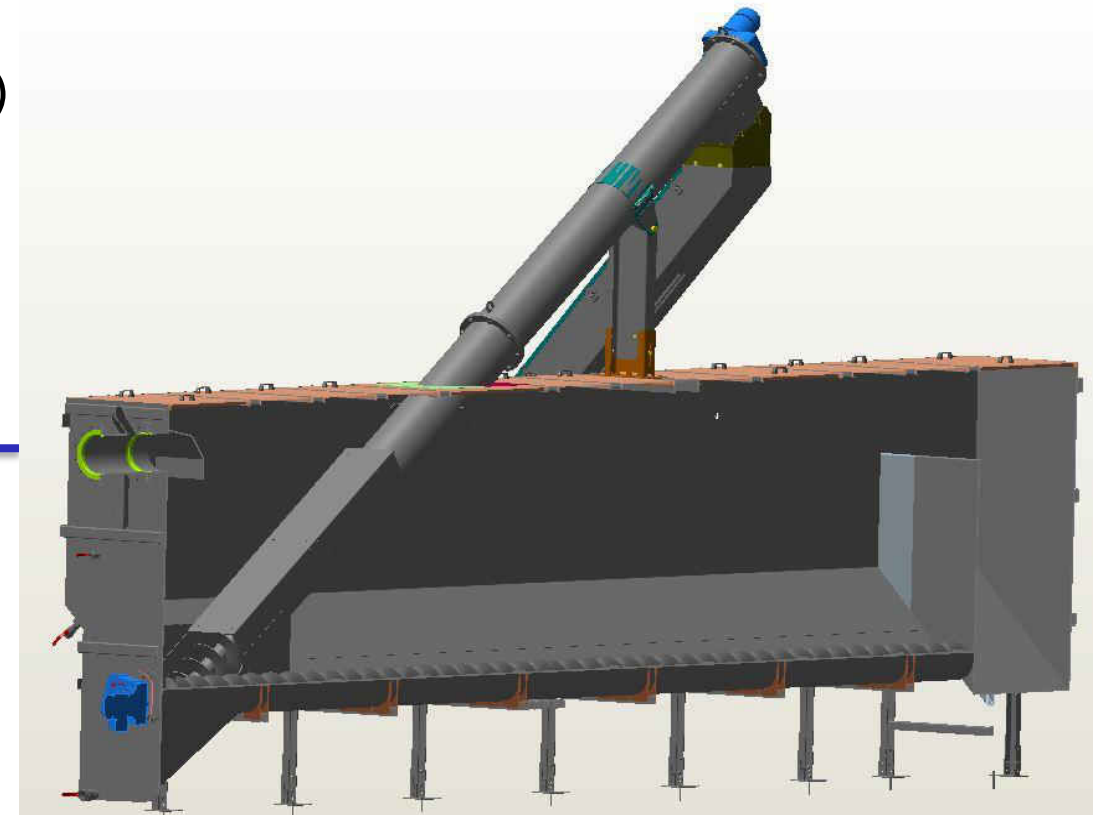
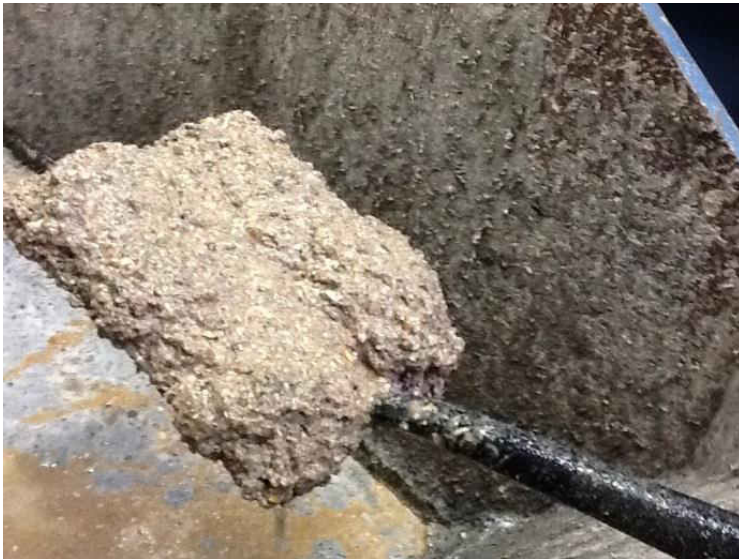


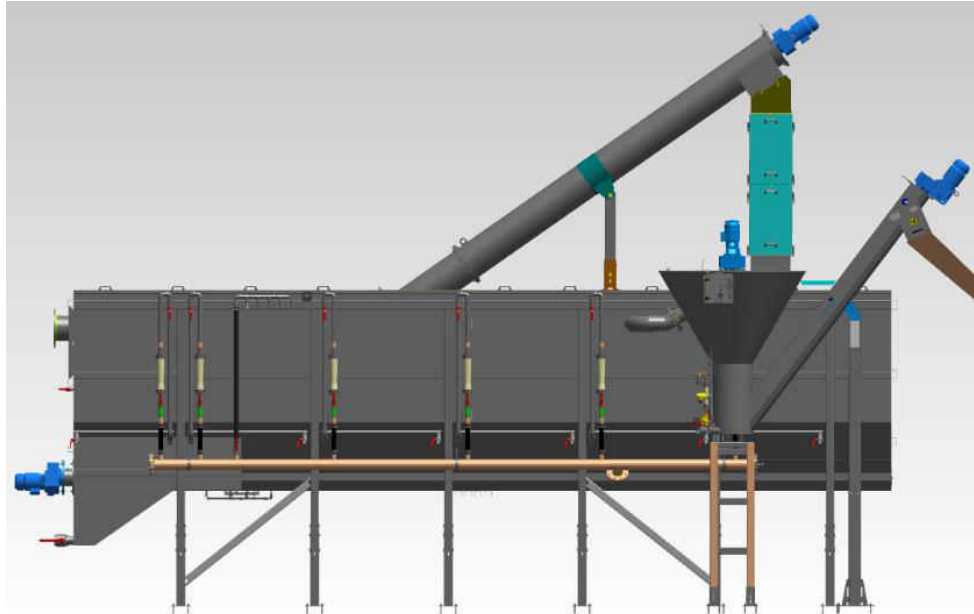
Damage to pump



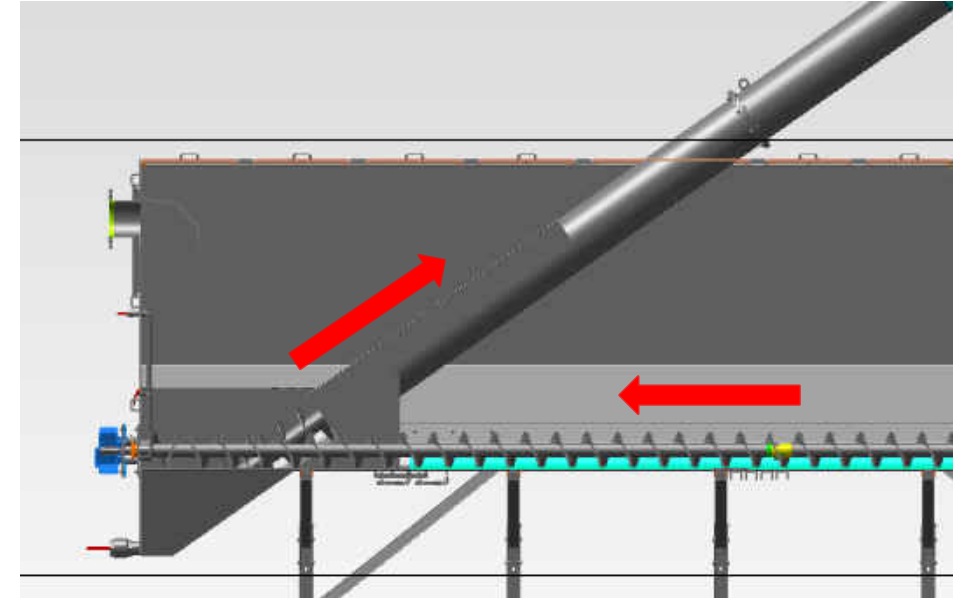
Scouring of tank

- Longitudinal, aerated grit trap
 - Aeration to promote separation of organics
 - Horizontal auger with pulsed operation to aid organics release
 - Inclined auger to dewater and remove material
 - Ideal for fine (hammer mills) & coarse (shredders)





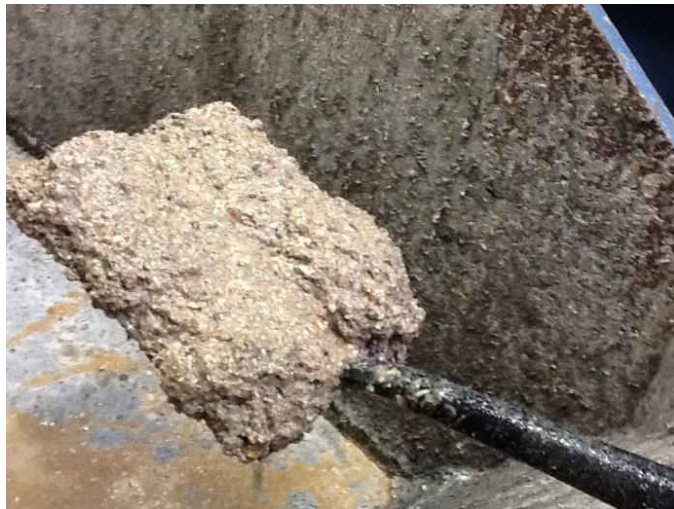
Aeration system of Ro6 Bio



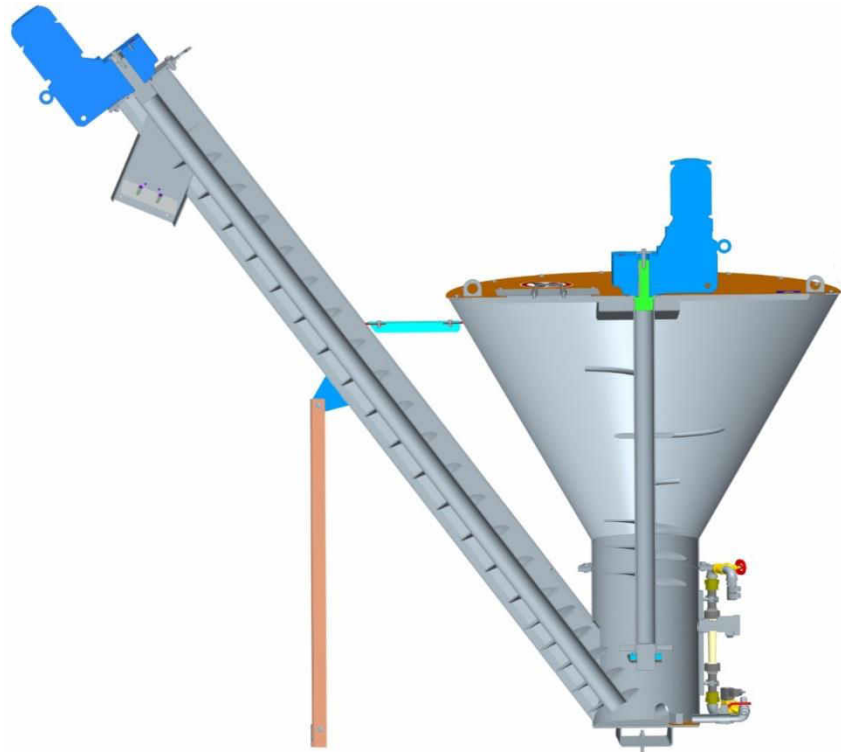
Direction of grit conveying inside Ro6 Bio

- Pumped or gravity inflow to Ro6 Bio plant – free effluent
- Batch and continuous operation possible
- No risk of blocking
- Sedimentation process of heavy material within a defined retention time
- Aeration system for avoiding bridging + supporting sedimentation process
- Removal of grit/heavy material by horizontal and inclined screw
- Very high separation efficiency and quality of washed heavy material

- ➔ Maximising recovered organics - as much of the organic fraction as possible passed to the digester
- ➔ Minimising waste produced



- Introduce air and water at bottom of unit
- Fluidised bed with stirrer washes organics from grit
- Inclined auger dewateres and removes grit
- DS increased from 50% to 90%
- LOI decreased from 25% to 10%





Unwashed Grit

- DS out ~ 60%
- Very high organic content
- Free water makes handling difficult and disposal costs high



Washed Grit after Grit washer RoSF G4E

- DS out ~ 80 - 85%
 - Organic content ~ 20%
- Water reduction of ~ 50%
- No free water left – easy to handle and minimization of disposal costs

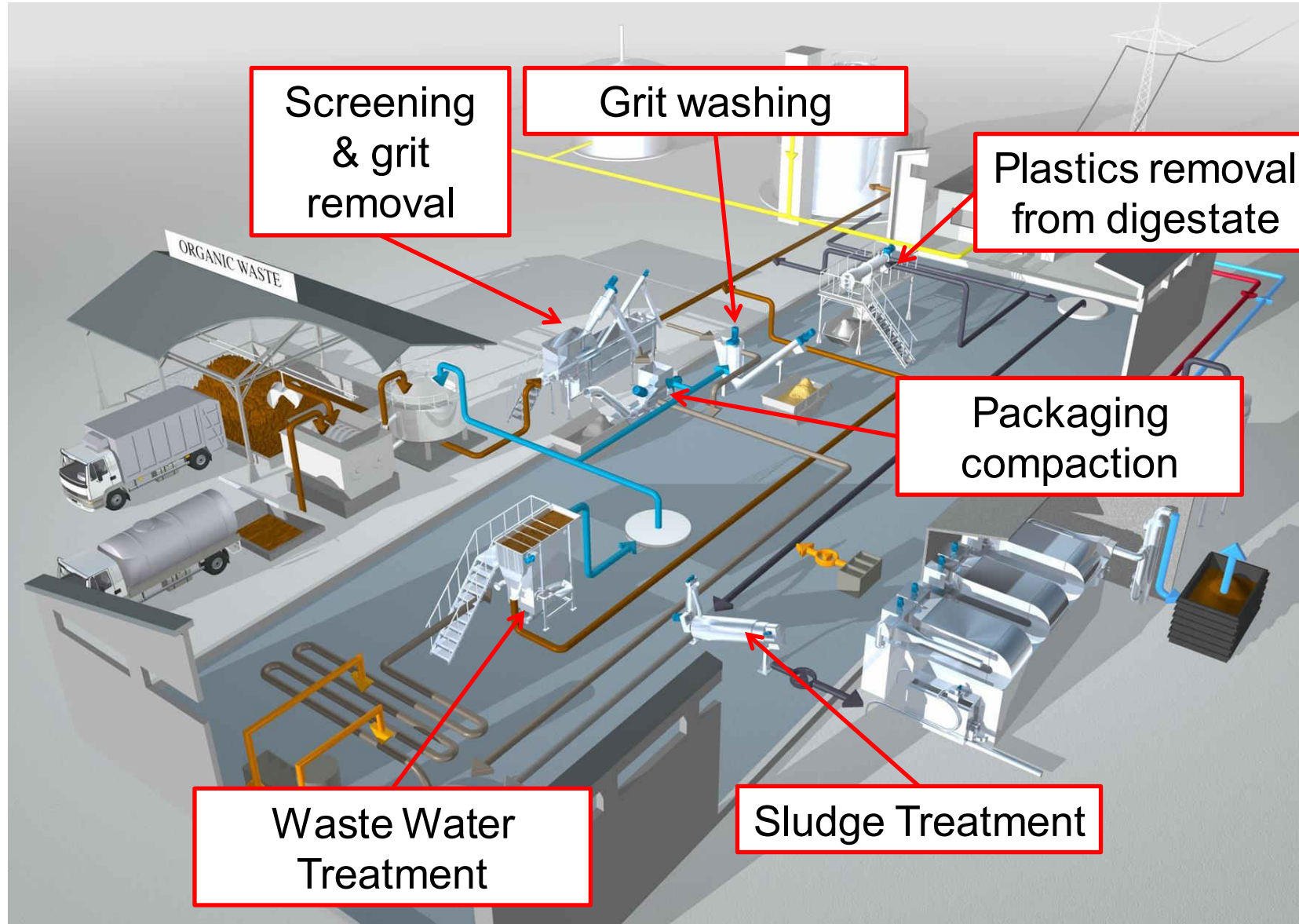
- ➔ Organics returned directly to grit trap



Packaging compaction (and washing)

- Lack of compaction results in in-efficient skip movements
- Compaction with a WAP recovers organics
- Compaction with a WAP reduces disposal - weight reduction of 50%
- If doing nothing, you pay for it twice!
 - Loss of gas yield
 - Increased disposal cost





Thank you for your attention – questions?



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