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Compost technology

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Compost technology

- Introduction
- General infrastructure
- Waste reception
- Shredding
- Windrow turner
- Products preparation, conditioning
- Products application
- Conclusion

Introduction

Introduction

- The three main tasks of technology:
  - To serve biology (crushing, mixing, fermentation, heating, aeration of post-rotting etc.).
  - Promoting product quality (calibration, separation of foreign matter, storage, etc.)
  - Ensure the operational sequence (weight recording, internal shifts, maintenance and servicing work, etc.)

Introduction

- Need from practice
  - Technically feasible solutions (no illusions)
  - If you want to get involved, you have to be fit
  - In a tough environment, robust and cheap solutions are needed (simple and slim).

Introduction

- Process
  - Waste reception or collection, weight recording, control, sorting, selection, storage
  - Preparation, shredding, mixing
  - Rotting process, process control, compost turning
  - Fine preparation, separation of impurities
  - Storage, application

General infrastructure

General infrastructure

› Loader

General infrastructure

› Loader

General infrastructure

› Loader

General infrastructure

› Loader

General infrastructure

› Loader

Waste reception

Waste reception

› Scale

Waste reception

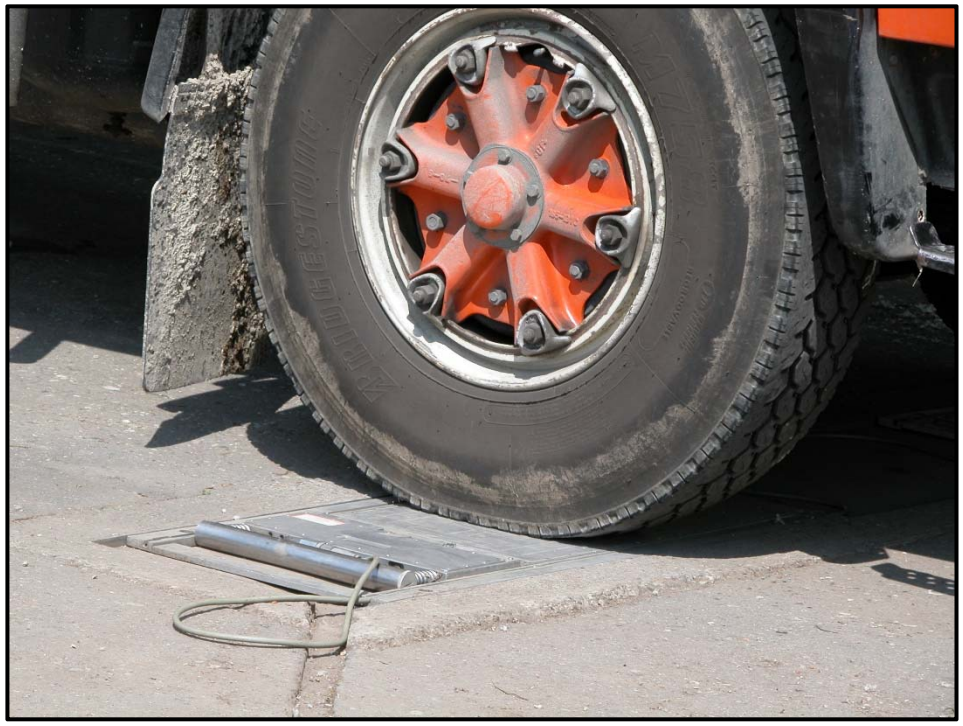
› Scale

Waste reception

› Scale, weight bridge

Waste reception

› Scale, weight plates



Waste reception

› Place to unload the waste

Waste reception

› Place to unload the waste

Waste reception

› Place to unload the waste

Waste reception

- Unpacking and separating waste (for anaerobic fermentation)
  - Flexidry

Waste reception

- Unpacking and separating waste (for anaerobic fermentation)
  - Flexidry

Waste reception

- Unpacking and separating waste (for anaerobic fermentation)
  - Hammer mill

Waste reception

› Quality control of waste material

Waste reception

› Quality control of waste material

Waste reception

› Quality control of waste material

Waste reception

› Measures to reduce unacceptable materials in delivered inputs

Waste reception

› Measures to reduce unacceptable materials in delivered inputs

Waste reception

- Measures to reduce unacceptable materials in delivered inputs

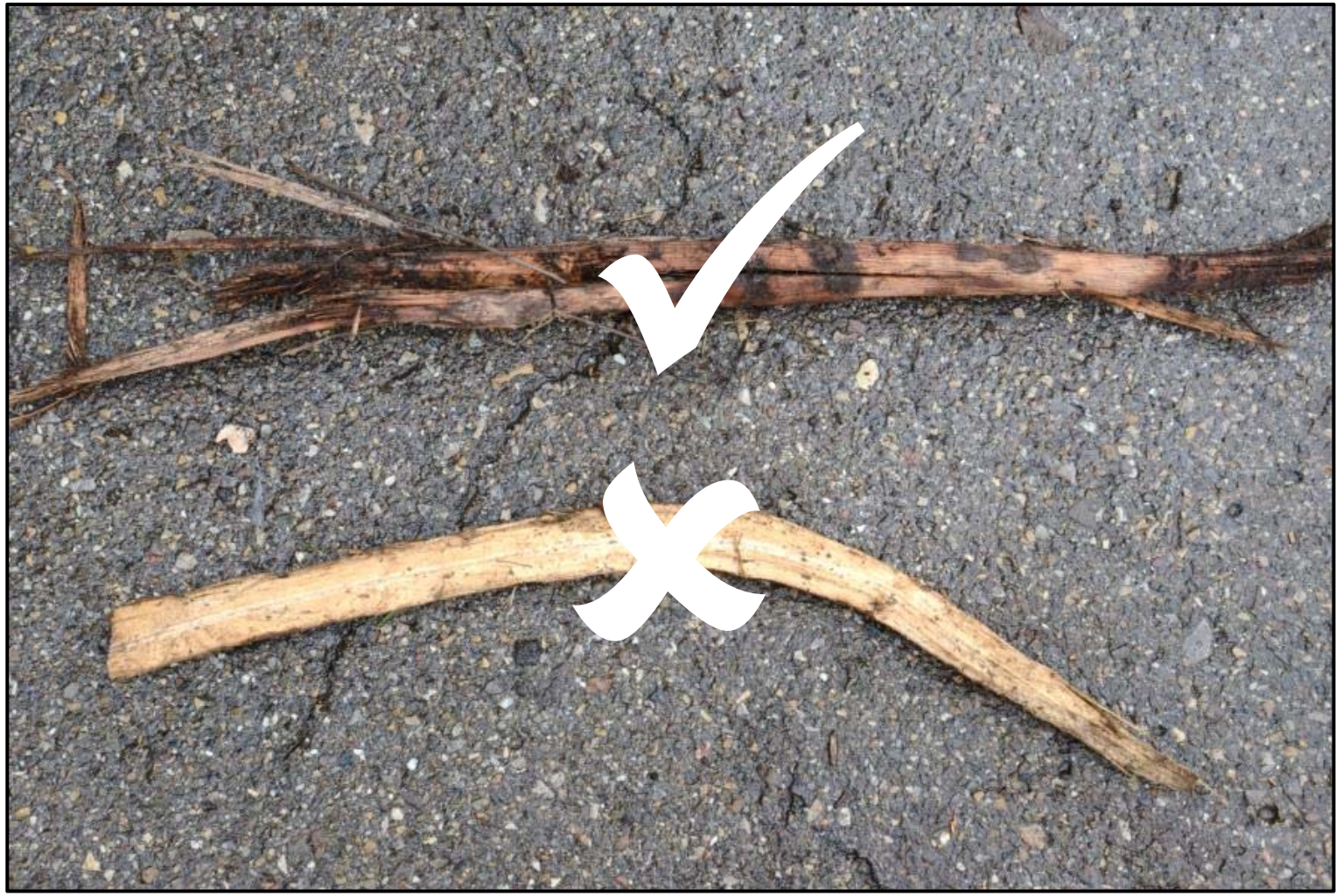
Shredding

Shredding

- Functions:
  - Calibrate and prepare
  - Improvement of handling
  - Enable biological degradation (what is better, smooth or frayed surface?)

- Important aspects:
  - Correct caliber, neither flour nor billets
  - Not smooth, but defibrated surface
  - Size reduction adapted to biological system?

Shredding



Shredding

› Wood chipper (knife chipper, smooth surface, not suitable for composting)

Shredding

› Wood chipper (knife chipper, smooth surface, not suitable for composting)

Shredding

› Shredders (high-speed hammer crushers)

Shredding

› Shredders (high-speed hammer crushers)

Shredding

› Shredders (high-speed hammer crushers)

Shredding

- Shredders (slow-running drums)

Shredding

› Shredders (slow-running drums)

Photo: www.komptech.com

Shredding

› Shredders (slow-running drums)

Shredding

› Food mixing trailers (slow-running drums)

Shredding

- Food mixing trailers (slow-running drums)

Shredding

- Small shredders

Shredding

› Small shredders

Windrow turner

Windrow turner

- Functions:
  - Mix, aerate, irrigate
  - Main influence on biological process

Windrow turner

- Loader
  - Mostly only material displacement. The clumps are not well discarded and mixed up

Windrow turner

› Tractor drawn turner

Windrow turner

› Tractor drawn turner

Windrow turner

› Tractor drawn turner

Windrow turner

› Tractor drawn turner

Windrow turner

› Self-propelled small windrow turner

Windrow turner

- Self-propelled small windrow turner

Windrow turner

› Self-propelled small windrow turner

Windrow turner

› Self-propelled small windrow turner

Windrow turner

› Self-propelled large windrows composting

Windrow turner

› Self-propelled large windrows composting

Windrow turner

› Self-propelled large windrows composting

Products preparation, conditioning

Products preparation, conditioning

- Functions:
  - Calibration
  - Separation of unacceptable substances

Products preparation, conditioning

› Drum screen

Products preparation, conditioning

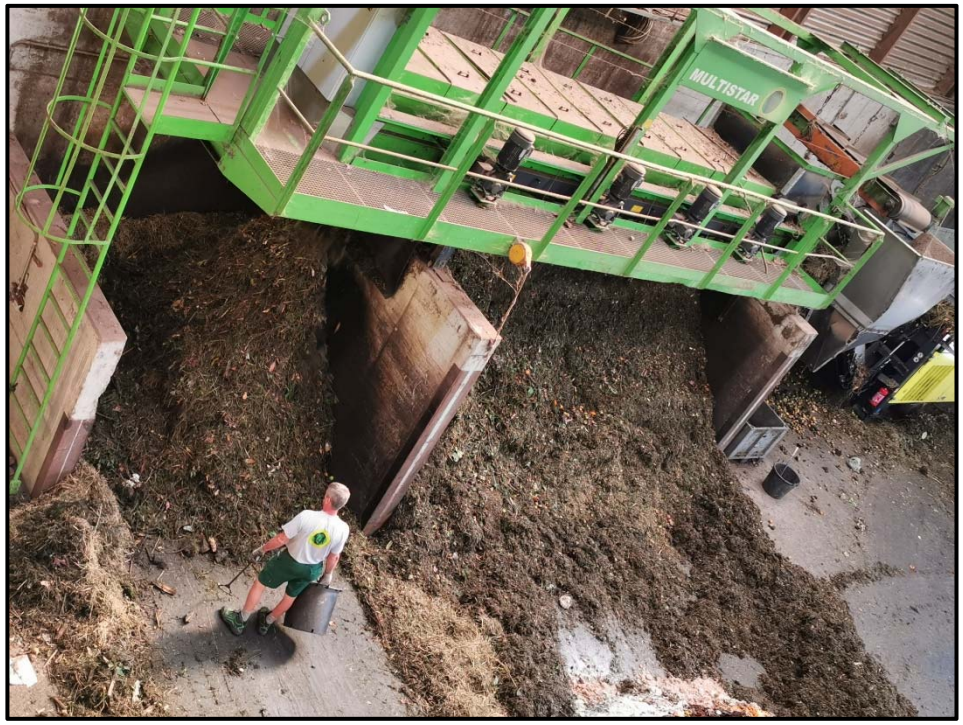
› Drum screen

Products preparation, conditioning

› Drum screen

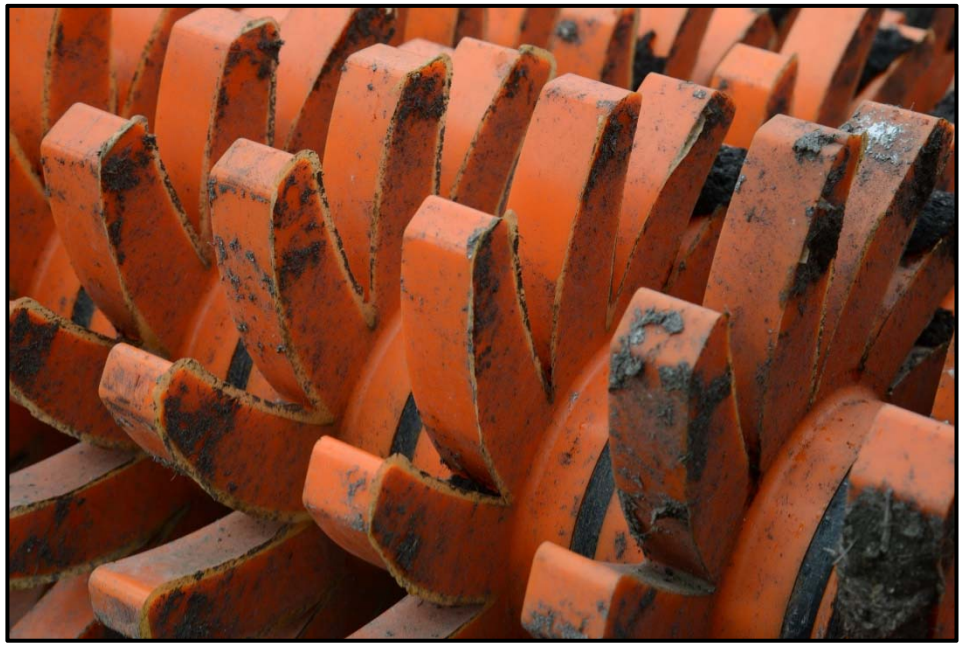
Products preparation, conditioning

› Star screen



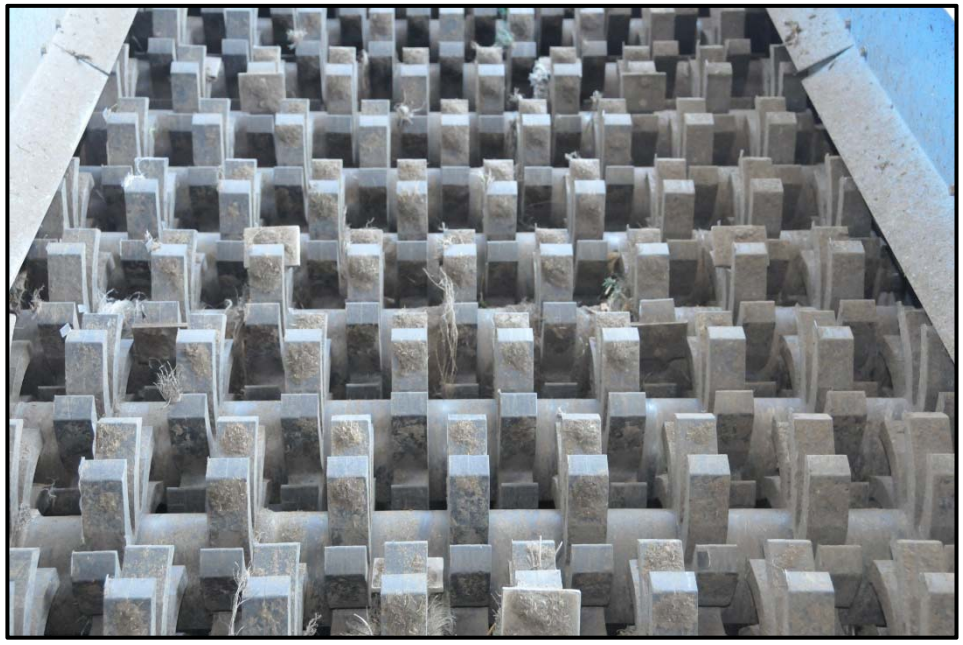
Products preparation, conditioning

› Star screen



Products preparation, conditioning

› Star screen



Products preparation, conditioning

› Star screen

Products preparation, conditioning

› Air separators, windsifter

Products preparation, conditioning

› Air separators, windsifter

Products preparation, conditioning

› Air separators, windsifter

Products preparation, conditioning

› Air separators, cyclone unit

Products preparation, conditioning

› Bagging machines

Products preparation, conditioning

› Bagging machines

Products application

Products application

- Functions:
  - Deliver product to customer without causing damage
  - Requires good spreading technology
  - Only drive with good load-bearing capacity of the ground
  - Large tires (optimum tire pressure)
  - Disc spreader for good spreading pattern (usually)
  - Liquid products: use trailing hose or trailing shoe

Products application

› Compost spreader

Products application

› Compost spreader

Products application

› Compost spreader

Products application

› Compost spreader for fruit orchards

Products application

› Compost spreader for fruit orchards

Products application

› Trailing hose

Products application

› Trailing hose

Products application

› Trailing shoe

Conclusion

Conclusion

› An appropriate technique is the basis for a quality compost production

› The largest machine is often not the most suitable for its needs

› A simple technique is often more efficient, as it is more stable and less prone to technical problems or delicate adjustments.

› It is necessary to carefully analyze your real needs and organize your infrastructure in relation to these needs

Questions ? Discussion ?

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