

TEST REPORT – COMPOST REACTOR OPPDAL RA

Background

AgroNova has tested and operated the fibre method at its Moss plant using specially designed containers for post treatment/hygienisation. The method was verified and approved in the summer of 2005. The container solution served its purpose, but with an annual production rate of 2,500 tons of processed sludge it became a costly solution as it requires containers to be emptied frequently. We carried out investigations in the market in search of alternative solutions and found a reactor solution that looked promising. We assumed that we could achieve optimal conditions with a dynamic (reactor) solution rather than the static (container) solution tested previously.

Oppdal RA (ORA)

A compost reactor from VAA Miljø has been in operation in Oppdal since 1995. Wood shavings are added in the same quantity as sludge. This process has proven satisfactory for ORA, which transports processed sludge to temporary storage at its own depot only. On the other hand, adding wood shavings does have several drawbacks. They include: considerable odour, a doubling in volume (50% wood shavings), no usage for the end product, long processing time in the reactor (10–12 days) and high handling costs. AgroNova contacted ORA earlier this summer to obtain permission for a full-scale test in its reactor. Permission was granted and we were able to test the fibre method over a period of one month. We quickly discovered that temperatures in the reactor rose considerably more quickly, while the odour in the production hall disappeared. As we know, the ORA reactor involves longer processing time than the fibre method requires, but the temperature at the beginning and middle of the reactor indicated that we could have halved the size of the reactor. A reduction in processing time to 2–3 days is expected. Between 2% and 10% of fibre was added to the mass during the test period. Based on this test, a proportion of 5–6% appears to be optimal.

ORA comments

There is no doubt that the fibre is working well. It was very effective in terms of quicker temperature development, less handling and, not least, the reduction in odour. Were we to dispose of our sludge externally, the fibre method would certainly be of great interest. The reactor has worked for 11 years without problems, with regular servicing and maintenance.

The analysis of the fibre tests shows that it meets our requirement for hygienisation
Nils, Oppdal Renseanlegg

Reactor ORA

Size – 86 m³

Length – approx. 12 metres

Width – approx. 2.5 metres

Hyd. Agg – 5.5 kW Processing time – 10-12 days

Volume – 1,000 tons/year



End product

Considerable difference in the processed sludge. Fibre-processed sludge had a soil-like consistency with minimal odour. The batch containing only 2% fibre was reminiscent of clay soil. Other processed sludge with wood shavings gave off considerably more odour and looked more like chippings than soil.



Left – 2% fibre

Right – 10% fibre



50% wood shavings