Autoheated Thermophilic Aerobic Digestion
FUCHS ATAD
Bruderbach, Germany

The wastewater treatment plant Bruderbach is located in a small valley close to the river Mosel. Two towns and several villages are discharging mainly domestic wastewater to the plant. The most remarkable discharger of industrial wastewater is a sparkling mineral water bottling plant. Here not only sparkling water but also fruit juices are bottled. Depending on the frequency of product changes wastewater amount and quality vary remarkable. As there is no equalization tank, temporarily high peak loadings with high COD concentrations occur.

The wastewater treatment plant was started up in 1985. The design comprised a short term primary sedimentation followed by an activated sludge basin. Already since then primary and waste activated sludge have been treated in an Autothermal Thermophilic Aerobic Digestion (ATAD) designed and built by FUCHS.

In a first expansion in 2004 a chemical phosphate precipitation was installed, the water level of the activated sludge basin was increased in order to allow for intermittent denitrification.
Because of increased loadings a further expansion was required. Due to the good experience with the FUCHS ATAD in the past in 2009 two additional reactors were added to cope with the actual demand.

Today, it is possible to operate two, three or four reactors. Thus the ATAD plant is highly flexible regarding varying sludge amounts in a range of between 15 m³ up to 30 m³/day.

As the FUCHS ATAD not only provides very good stabilisation but also excellent disinfection farmers show great satisfaction with the final product being applied to agriculture as a premium fertilizer (Class A biosolids). Thus, all sludge from the ATAD plant can be ideally used for land application on surrounding farmland. Currently it is even applied in liquid form.

Advantages of the FUCHS ATAD process are:

- simultaneous stabilization and disinfection
- meets or exceeds international biosolids standards
  (e.g. US EPA regulation 503)
- short retention time
- low investment costs
- excellent process stability and reliability
- flexible operation
- easy extension of capacity
- more than 30 years of experience