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Title	**Source separated wastewater a new resource for producing mineral fertilizer**
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Source separated wastewater a new resource for producing mineral fertilizer

Wastewater contains large amounts of nitrogen, phosphorus and potassium the major elements for plant production. In Norway and Sweden 15-20% of the present day market need for mineral fertilizer could be substituted with fertilizer derived from wastewater. In most developing countries wastewater could substitute more than 40% of current fertilizer use and in theory nutrient resources derived from wastewater and organic waste could provide enough fertilizer to grow food for the world population. The latter is assuming no losses of nutrients in agricultural production and when reclaiming and recycling the nutrients.

Toilet waste (blackwater) contains the majority of the nutrients in wastewater. Several systems based on separating blackwater from the rest of the wastewater (greywater) or diverting urine, which is the most nutrient rich part of the blackwater, have been developed. Current systems are either treating blackwater aerobically or anaerobically yielding a hygienized fertilizer rich slurry or just storing the urine until it is hygienized. Both methods yield a liquid fertilizer product that has low transport flexibility, hence local use is a prerequisite.

The world supply of mineral phosphorus is limited and excerts the main stimulus to utilize alternative phosphorus sources. Large scale urban applications of blackwater separation or urine diverting systems generating huge amounts of liquid fertilizer resources are no longer a far-fetched scenario. It is neither practical nor economical to distribute this as liquid fertilizer. Conventional wastewater treatment provides several interesting options for concentrating and extracting the nutrients from liquid organic sources as blackwater and urine. This paper gives an overview of different treatment options that has been tested on urine and blackwater as well as suggested methods and combination of methods.