

SILCON® V2S

Plant construction – Separators – Systems



Separators for agriculture, wastewater treatment plants, slaughtering facilities, breweries, pond renovation

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The problem:

Slurry, sewage sludge, slaughterhouse waste



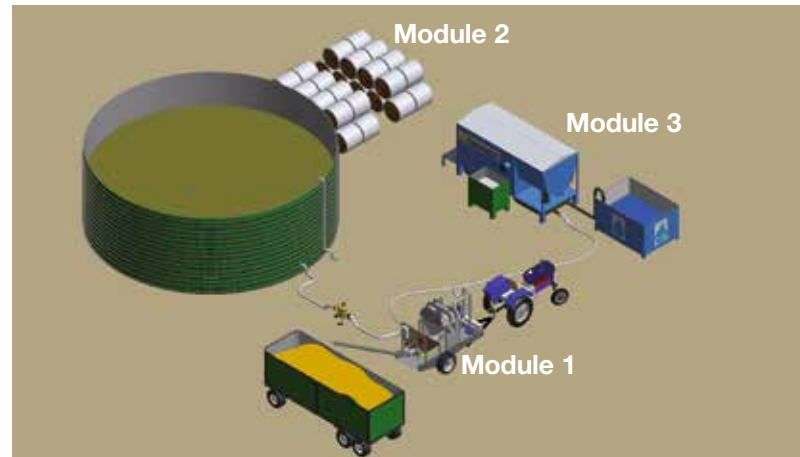
Slurry from agricultural livestock farming is a recyclable material that is traditionally applied in unprocessed form as fertiliser. The amount of slurry to be applied depends on the size of the cultivation area and is thereby limited.

If the amount of slurry exceeds the area available, disposal of the surplus leads to extra costs, thus impacting on operating income and limiting the quantity of livestock.

The machinery and apparatus of the **SILCON V2S** system provide a highly efficient, cost-effective solution for this. This system maintains access to a recyclable material such as slurry for soil that is low in nutrients. It can also be used for sewage sludge and slaughterhouse waste.

The solution:

SILCON V2S vacuum vibration system



SILCON V2S is based on three modules:

Module 1: Separation of liquid and solid parts of the slurry, slaughterhouse waste or sewage sludge into a filter cake and the aqueous phase.

Module 2: Dry matter for a biogas plant or compacted into bales (round or square) as fertiliser.

Module 3: Removal of phosphates and nitrogen compounds from the extracted aqueous phase. Fine particles are skimmed off and can be reused as fertiliser.

Module 1:

Separation



The medium is drawn from the large slurry container into the V2S separator. Mechanical separation of the aqueous phase from the solid and suspended matter takes place here. The V2S separator is positioned on a tandem-axle trailer licensed in line with German road traffic regulations. A key feature is the combination of mechanical screening technology and vacuum. A patent application has been submitted for this centrepiece.

Depending on the material consistency, the throughput rate is 60 to 200 m³/operating hour. Adjustable screen sizes ensure optimum separation efficiency.

We only use a few components. The components supplied come from prestigious German manufacturers and global market leaders. This ensures optimum worldwide service.

The energy requirement is minimal. 35 kW via the power take-off from the tractor or from a separate electric motor suffice.

Because of availability and the intended low maintenance costs, and mainly for health & safety reasons, the system may be operated only by an operator who has undergone verifiable training with a master operator for at least five days.

Module 2:

The filter cake



Solids as filter cakes in bales

The filtered solids are a valuable recyclable material for biogas plants. In addition, they are fertilisers for farmland that is low in nutrients, or energy sources in cement factories and power stations.

They must always be handled with care.

It is preferable if bales weighing 1 to 1.5 tonnes are produced. Conventional balers can be used for this.



Filter cakes as solid fertilisers

A large percentage of the available phosphates, nitrogen and other substances is separated with the filter cake. The amount of liquid to be applied to the fields can thus be increased.

SILCON GmbH & Co. KG also offers inspection of the bales (minimum quantity 150) for its customers.

Module 3:

Water treatment



Microflotation plant

In an integrated process, the aqueous phase is separated into a microflotation plant or, beforehand, a hopper. The liquid is fed into a reactor tank. Metered addition of flocculants such as iron(III) chloride is performed here. Turbulence is generated by means of compressed air in order to improve mixing in the reactor. Consequently, the flocculating agents, phosphates, etc. link together in the suspension and rise like a foam head. The foam with the constituents is removed and gathered. This material is itself a concentrated fertiliser. The liquid is then put into tanks. At this point, microorganisms break down the nitrogen compounds.



Applying wastewater to farmland

The final stage involves:

- An amount of water that the receiving waters can comfortably cope with
- Alternatively, wastewater to be sprayed on own ground
- Recyclable phosphate sludge
- Raw material for biogas plants and fertiliser.

Use depends on the last remaining constituents. This is contingent on several influencing factors within the source material. Following a chemical analysis in coordination with the relevant authorities, in ideal circumstances, discharge into receiving waters or surface irrigation is possible in any season. In any case, there are attractive options for farmers to offset the process costs by selling the substrate.

The advantages:

Practical, holistic, economically efficient



The **SILCON V2S system** is a holistic solution for agricultural operations, biogas plants, contractors, municipal disposal services and slaughterhouses.

The procedure was developed by the farmer Alfons Schulze Isfort from Altenberge in collaboration with the **TAUBER** Group in Münster, and is the subject of a patent application.

We are supported in all processes by scientists from universities and technical colleges.

Advantages at a glance:

- Simple, patented technology
- Highly effective
- Cost-effective solution
- Profitable and economical
- Optimum environmental compatibility.

Potential customers:

- Farmers
- Operators of biogas plants
- Contractors
- Wastewater treatment plant operators
- Slaughterhouses
- Breweries
- Pond restorers



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