GEA manure management and nutrient recovery
Complete solutions for farming applications

gea.com
GEA manure management expertise will assist livestock farmers as they face the challenges of increasing their profitability while protecting the environment.

**Bedding savings and revenue**
A high percentage of solids recovery eliminates the need of purchasing and hauling bedding material. Excess solids can be sold as bedding to other farmers.

**Lower storage management cost**
More solids removal means less of it ends up in the manure lagoon which represents savings in agitation, hauling and dredging cost.

**Land application efficiency**
Since some phosphate is removed from the liquid manure, you have options in the way nutrients are applied.

GEA manure management expertise will assist livestock farmers as they face the challenges of increasing their profitability while protecting the environment.
Your manure is a valuable resource

From raw manure, to effective separation and decanter centrifuge systems, we have the process know-how to create value with your progressive manure and nutrient management practices.

**Value-added solids**
The solids resulting from a secondary separation process contains a high level of nutrients which can serve as a valuable fertilizer.

**Fertilizer-savings**
Using both liquid and solid fractions as fertilizer offers substantial savings when compared to commercial fertilizer costs, storage and application.

**Water-savings**
Liquid derived from primary separation equipment can be recycled for alley flush, power flumes and sand separation. Additional solids can be removed from the liquid stream with a GEA manure Decanter.

**GEA manure management and nutrient recovery expertise**
Primary separation of coarse particles and fibers has been used for decades. Often the liquid effluent after separation is used back on the farm for alley cleaning or stored in a lagoon to be spread on the field. While primary separation has a minimal investment, the effectiveness of separating nutrients into the liquid fraction is quite low. Over 90% of the nutrient value remains with the liquid effluent.

Additional separation steps partition nutrients into different usable streams. Of the three major nutrients (N, P and K) present in manure, nitrogen and phosphorus are often the most difficult to manage and can have the largest environmental impact. A secondary separation step with a GEA manure Decanter can segregate the nutrients based on the customers need.

Your manure is a valuable resource waiting to be developed, contact one of our GEA Manure Management Specialists, with their assistance you will be ahead of the curve with your manure management plan!
Manure management solutions for dairy and livestock farming

Build your own unique, individualized solution thanks to our wide selection of high-performance products.

We know livestock farming inside and out

GEA offers a complete line of manure management equipment for today’s modern dairy farms and state-of-the-art hog facilities. The GEA product line includes industry-leading manure spreaders, innovative separation technology, and time-tested and proven manure pumps, agitators, and scraper systems.

The design and quality of this equipment, combined with the industry expertise of our manure management specialists, allow us to bring unique, personalized solutions and high-performance products to farm operations of all sizes.

CROPS AND MANURE CLOSED-LOOP CYCLE

Crops require nutrients in order to grow and yield grain or forage for animal feed or for human consumption. Animals eat crops and excrete nutrients in their manure. The nutrients in manure are recycled as fertilizer for the next crop. Manure contains the added benefits of organic material and micronutrients. These additional benefits make manure superior to synthetic fertilizers.
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Dairy and livestock farming

Manure collection
Collect and move manure away from the livestock barn.
- Automated robot scrapers for slatted floor
- Automated scrapers for solid floor
- Flush systems
- Cross gutter cleaners
- Stanchion barn cleaners and elevators

Manure agitation and transfer
Agitate and transfer manure from a reception pit to the main storage, separation process or other treatment.
- Hydraulic piston pumps
- Electric pumps
- Electric agitators

Manure separation
Applications to separate manure into two fractions (liquid and solid) and benefit from the advantages of both.
- Primary separation: roller press, vertical dewaterer and sloped screen
- Secondary separation: GEA manure Decanter

Land application
With a liquid manure spreader or a semi-tanker, manure is transported to the field where it is applied on top or incorporated in the soil.
- Semi-tanker
- Liquid manure spreader
- Tool-bars

Manure agitation and transfer
Applications to homogenize manure from the main storage before land application.
- Power take-off pumps
- Power take-off agitators
GEA complete solution for farming applications

Make the most of your resources and the benefits of sound manure management and nutrient recovery plan.

You can rely on GEA’s expertise and farming knowledge

Separating manure by a centrifuge process makes it possible to manage the solid and liquid fractions individually, with greater flexibility and efficiency. By eliminating some of the phosphorus content in liquid, you will have more leeway in your manure spreading schedule to apply the necessary nutrients at the time when your crops need them the most. The solid fraction, which is more nutrient-rich, is easily transportable at a reduced cost to deficient fields further away.

Scraped or flushed manure is collected and moved to the reception pit.

Additional manure treatment - for dairy farms where the alleys are flushed and/or a power flume is used, it may be necessary to use a thickening pit to condition the material for additional processing.

Primary separation to remove large particles from the liquid stream.

Liquid from the dewatering process can be directed back to the reception pit or transferred with the liquid from the roller press to a centrifuge for further processing.
What are Nitrogen, Phosphorus and Potassium?

How do these nutrients help plants?

Nitrogen is used by plants for lots of leaf growth and good green color. Phosphorous is used by plants to help form new roots, make seeds, fruit and flowers. It’s also used by plants to help fight disease. Potassium helps plants make strong stems and keep growing fast. It’s also used to help fight disease.

Nutrient pile can be transported and applied to deficient fields.

Secondary separation captures some of the Phosphorus (P). With polymer addition the majority of the P is retained, as well as some Nitrogen (N). Liquid from a centrifuge process can either go to further treatment, be recycled or go to long term storage for land application.

Biological treatment to segregate Nitrogen (N) and Potassium (K) to use for plants nutrient deficiency.
We live our values.
Excellence • Passion • Integrity • Responsibility • GEA-versity

GEA is a global technology company with multi-billion euro sales operations in more than 50 countries. Founded in 1881 the company is one of the largest providers of innovative equipment and process technology. GEA is listed in the STOXX® Europe 600 Index. In addition, the company is included in selected MSCI Global Sustainability Indexes.