

FAN Separator



**Bedding
Recovery
Unit**



FAN Bedding Recovery Unit



Traditional bedding – not the best

Traditional bedding materials, such as sand, wood chips, sawdust, straw etc. are purchased from outside and have a lot of disadvantages such as:

- increased wear to all equipment
- create injuries to the cows
- difficult to handle
- not always available
- material too wet
- unknown bacterial level
- high waste disposal costs

Furthermore these former used materials

- increase the solid concentration in the manure
- are labor intensive
- are costly to buy
- increase manure handling costs

Conversely rubber mats and mattresses

- are expensive to buy
- need high maintenance
- have to be replaced approx. every 10 years
- may require additional bedding for top coverage.

Economic benefits of using manure solids for bedding are:

- no purchase of bedding material needed
- increase of cow comfort and health
- decrease of costs
- increase of milk production
- reduction of costs for manure management
- no extra storage required

The benefits of perfect bedding material are:

- improve comfort and health for your cows
- easy to handle and dispose
- economical
- environmentally friendly
- available every day
- same quality every day

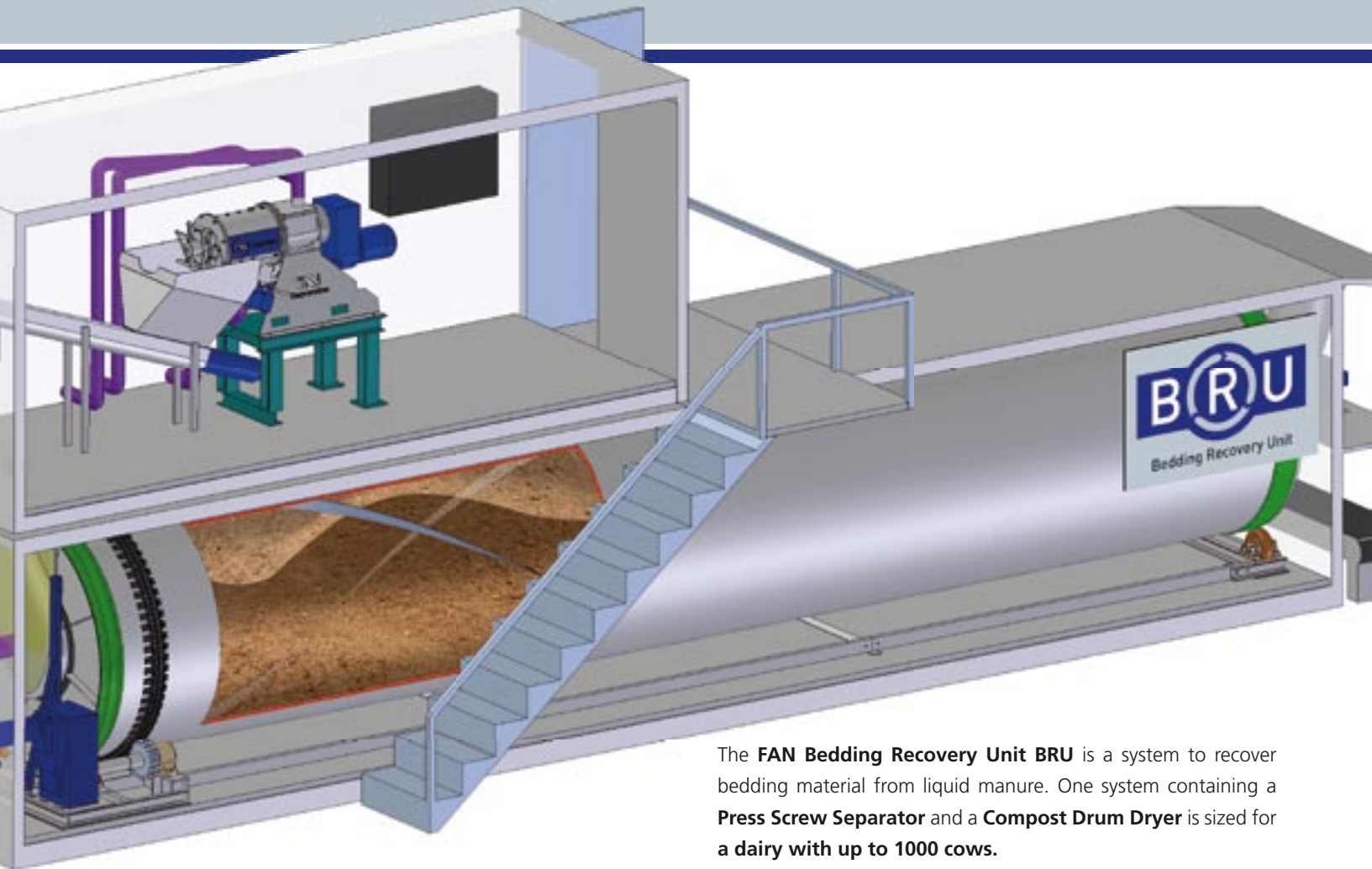


Feeding of the unit with a special chopper pump



Feeding with special components

Free Bedding Material Produced Fresh Daily



The **FAN Bedding Recovery Unit BRU** is a system to recover bedding material from liquid manure. One system containing a **Press Screw Separator** and a **Compost Drum Dryer** is sized for a dairy with up to 1000 cows.

Takes benefit from available resources

The **FAN Bedding Recovery Unit BRU** provides internally created bedding material recycled from the **manure solids already at the farm**. The bedding is **produced fresh daily**, needs **no extra storage area** and does not increase the total amount of manure solids.



Drum container with Press Screw Separator Unit



Recovered bedding material



The **FAN Bedding Recovery Unit BRU** includes two steps:

Primary solids separation to remove the large higher quality solids

The first step in the process is the **separation of large fibers** from the manure. These fibers are mainly undigested parts of **feed, such as corn silage or hay**. This is performed by a special designed Press Screw Separator to remove only the large fibers and lower the moisture content. The solids are fed continuously with a screw conveyor into the FAN Compost Drum Dryer.

High speed, real-time composting

The second step in the process takes place in the insulated FAN Compost Drum Dryer. Here the solids are treated in an **intensive aerobic process for hygienization and drying**. The process ensures a homogeneous product that is treated in a controlled process.

The chemistry of the product is modified compared to that of fresh manure and therefore counteracts the mastitis producing microorganisms in the fresh manure. Finally the entire process is controlled by monitoring the treatment process.

Bacterial Count Report

| Farm | Date | Sample | E.coli, Klebsiella and Enterobacter | Streptococcus uberis and Streptococcus dysgalactia |
|-----------|------------|-----------------------------|-------------------------------------|--|
| Fessenden | 07.09.2006 | paper bedding post 1 | 500.000 | 200.000.000 |
| Fessenden | 07.09.2006 | paper bedding post 10 | 4.000 | 60.000.000 |
| Fessenden | 07.09.2006 | paper bedding post unsorted | 0 | 0 |
| Fessenden | 10.12.2006 | after CDD | 0 | 0 |
| Fessenden | 10.12.2006 | bedding post 3 | 0 | 10.000.000 |
| Fessenden | 17.01.2006 | after CDD | 0 | 0 |

WVS MILK QUALITY LAB
 5908 W Main St. 203
 Waupun WI 53983
 PH 920-534-3631
 e-mail assess@wvscheer.com

Farm: Hilltop Dairy Date: 3/24/10

| Sample ID | Rectal class | Raw Count | Log |
|-----------|--------------------------------------|-------------------------------|-----|
| | Escolin Positive Strip | 1,000 colonies/1 gram bedding | |
| | Escolin Negative Strip | 0 colonies/1 gram bedding | |
| | Gram Negative Lactose Fermenting | 0 colonies/1 gram bedding | |
| | Gram Negative Non-Lactose Fermenting | 0 colonies/1 gram bedding | |

Costacted by: _____ Price: 3750

Bacterial group definition:
 -Streptococcus, escolin positive. Includes Strept. uberis, enterococcus, and some Strept. dysgalactia. These are environmental pathogens.
 -Streptococcus, escolin negative. These are environmental streps.
 -Gram negative Lactose fermenting. Majority are not primary environmental pathogens. This is a group of major fermenting. Those include E. coli, Klebsiella, and Enterobacter.
 -Gram negative Lactose negative. There are a few environmental pathogens including Salmonella that fall in this group, but as a general rule, the lactose fermenting are the gram negative of concern.



Perfect Bedding material with low moisture content and low bacterial counts



Free bedding material available every day



Healthy cows produce high quality milk



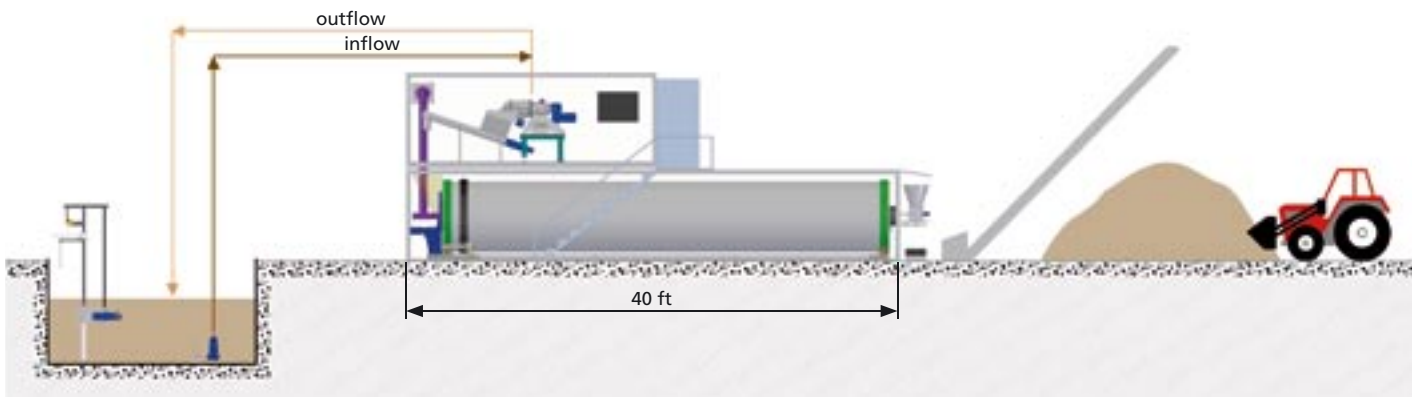
The Components of the System

- Submersible Pump with Mixing Device
- FAN Press Screw Separator Type "Bedding"
- Feeding Auger
- FAN Compost Drum Dryer in an insulated container
- Exhaust Air fan with automatic speed control
- Additive Dosing for bedding conditioner (optional)
- Conveyer Belt (customer supplied)

Standard running conditions

| | |
|---------------------------------|---|
| Process temperature in the drum | more than 150 °F (65 °C) |
| Product Output | more than 20 cubic yards per day (15 qbm/D) |
| Retention Time approx. | 24 hours |
| Bedding material | 40 – 42% dry matter |
| BRU 500 | for up to 500 cows* |
| BRU 1000 | for up to 1000 cows* |

*) depending on the bedding management



The process is **fully automated**. The manure is pumped from the collection pit to the **Press Screw Separator**. The separated solids are fed by a feeding auger for controlled dosing into the

Compost Drum Dryer and are automatically discharged after the intense aerobic process. The biological process is monitored by measuring the temperature and controlled by adjusting the air volume.



A **BAUER Group** company



FAN Submersible Mixer



FAN Submersible Pump with Mixing Device



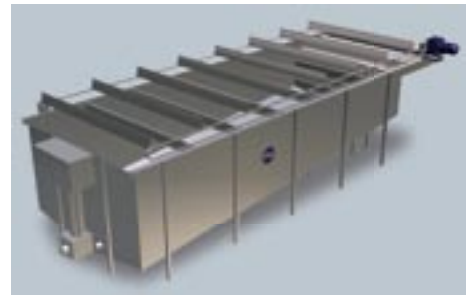
FAN Press Screw Separator



FAN Centrifuge Classifier Separator



FAN Filter Oscillating Separator



FAN Dissolved Air Flotation Unit

FAN Separator addresses

Main office:

FAN Separator GmbH

Gewerbegebiet Herzfeld
DE-59510 Lippetal, Germany
Phone: +49-2923 610
Fax: +49-2923 610 100
E-mail: fan@fan-separator.com
Internet: www.fan-separator.com

FAN Separator (Asia) Pte. Ltd.

Orchard PO No. 8880, Singapore 912399
Phone: +65-6758 1892
Fax: +65-6257 0546
E-mail: fanasia@fan-separator.com

FAN Separator Limited

Room 102, 1/F, Chung Nam Building
1, Lockhart Road, Wanchai Hong Kong
Phone: +852-2528 1170
Fax: +852-2528 1167
E-mail: fhml@netivator.com

FAN Separator (USA) Inc.

107 Eastwood Road
Michigan City, IN 46360 USA
Phone: +1-219 879 4986
Fax: +1-219 879 5160
E-mail: fanusa@fan-separator.com

Representative:

Other representatives are found in our List of representatives, which is available on request.

