

## Increased productivity and cost reductions in a distillery.

The distilling/brewing process produces several by-products, one of which is spent grain and draff. These products are good sources of protein and vitamins and are used in the production of animal feed. Spent grain or draff typically contain 75-80 % moisture.

Over the years, the handling of spent grain and draff from the lauter/mash tun, mash filters or collection hopper has been carried out the traditional way, using an expeller unit and vast amounts of uncontrolled compressed air.

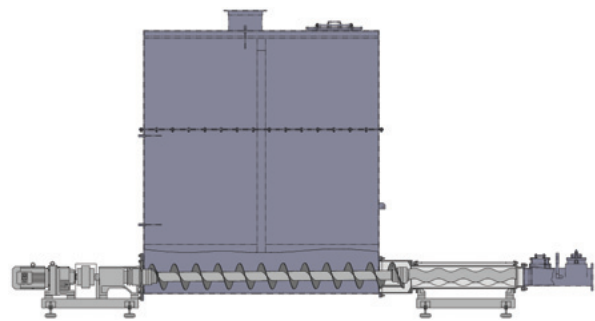
### **The starting situation**

An expeller unit installed within a buffer hopper received spent grain from decanting centrifuges on a continuous basis. The design criteria were to expel 20 tons per hour into a pipeline and use compressed air to transport the spent grain 170 m horizontally and 30 m vertically into storage silos. During commissioning of the plant, the expeller unit could handle less than half the duty requirement. Further modifications were even less productive.

### **The solution**

Working within the constraints of the existing 11.0 kw electric motor and the existing buffer hopper, seepex engineered a solution. The expeller unit was removed and replaced with a custommade 4 m auger feed screw and the pumping elements – the rotor and stator. Additionally, a new drive train and bearing housing were fitted.

This method of conveying the grain or draff has two issues. First, using high amounts of energy resulting from compressed air usage. Second, as the spent grain or draff can vary in moisture content, the time needed to empty a lauter or mash tun can vary dramatically. In some applications, the process requires from 40 minutes up to 1 hour and 15 minutes. The variance is obvious, and production suffers.



**Engineered solution: spent grain buffer tank with integral seepex pump range BTE**

### The benefit

To date, some twelve months later, the seepex solution delivering the designed output has been in production and has not required any replacement parts. seepex has been contacted by other major distillers and brewers to help them improve productivity and reduce their electrical costs.



The final engineered installed solution



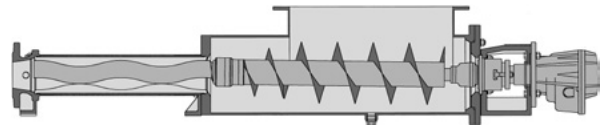
Spent grain after pumping

### Key Facts

- Engineered solution to install pump into existing spent grain buffer tank
- seepex pump out performs "expeller unit"

### Significant Cost Savings

- Increased production with no down time compared with "expeller" unit
- Higher reliability
- Less energy costs



### Installed Pump Type

- Range BTE

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