



Closing The Gap...When More Of Less Is Needed.



CFD TECHNOLOGY

SUGAR BEET IN FIELD HANDLING AND DRYING

A novel system that harnesses the power of hydrodynamic cavitation without the use of excessive heat or energy

Sugar Beets

Sugar beets are a type of root vegetable that is cultivated in a variety of shapes and sizes, ranging from semi-circular to elongated oval. The average sugar beet is about 3 to 10 inches in diameter and weighs 1 to 3 pounds. Sugar beets are about 75% water and contain about 12 to 22% sugar. The rest of the beet is made up of other nutrients and fibers.

Traditional Flash Drying

Traditional flash drying is a process of drying a material by exposing it to a hot gas or air stream. This method is often used to dry food, chemicals, and other materials. However, it can be expensive and difficult to deploy in the field.



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CFD TECHNOLOGY HYDRODYNAMIC CAVITATION

The Power Of Hydrodynamic Cavitation

NUVIVE'S CFD TECHNOLOGY

NuVive developed a novel system that harnesses the power of hydrodynamic cavitation to achieve the same result as traditional flash drying without the use of excessive heat or energy. This system is able to dry and preserve cultivated sugar beet in the field in a continuous process as they are being harvested.

What Is Hydrodynamic Cavitation?

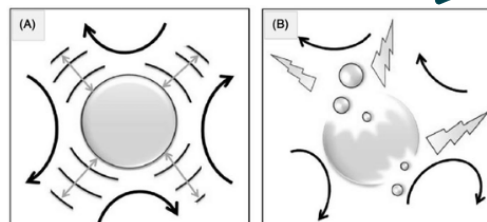
Hydrodynamic cavitation is a phenomenon in which the static pressure of a liquid reduces to below the liquid's vapor pressure, leading to the formation of small vapor-filled cavities in the liquid. When subjected to higher pressure, these cavities collapse and can generate shock waves that pulverize the beet sugar into vapor and particles. The system then accelerates the vapor away from the particles to be discharged using a dry powder handling system. The vapor and air generated in the handling system continue on to a separate discharge where they can be condensed into water and reused.

CULTIVATED IN
THE FIELD



DESTONE, CLEAN,
WASH, SHRED

PULVERIZED, DRIED TO
A FINISHED POWDER





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CFD TECHNOLOGY
EQUIPMENT

Preparation

To prepare the sugar beet for drying in the field, we will employ the use of equipment that is already in use to first clean the soil from the surface and then shredded it into small pieces. We then apply a natural stabilizing and anti-fungal agent to the shredded beets before they enter the drying chamber.

Cost-Effective

This system is a more efficient and sustainable way to dry sugar beets to preserve its value. It is also more cost-effective, as it does not require the use of excessive heat or energy. Estimated cost of energy use to dry 40 ton of sugar beet is less than the cost of truck fuel to moving the same quantity from the field one mills away using traditional trucking service.



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GET IN TOUCH

Albert Duoibes
+1-616-617-5896

aduoibes@nuvive.com
www.nuvive.com

4655 patterson ave se
suite c
Grand rapids MI. 49512

