

Inclined Channels

The large grains and a density of 1.5 g / cm^3 have always been exploited in the refining of potato starch. A century ago, inclined channel sedimentation was widely in use.

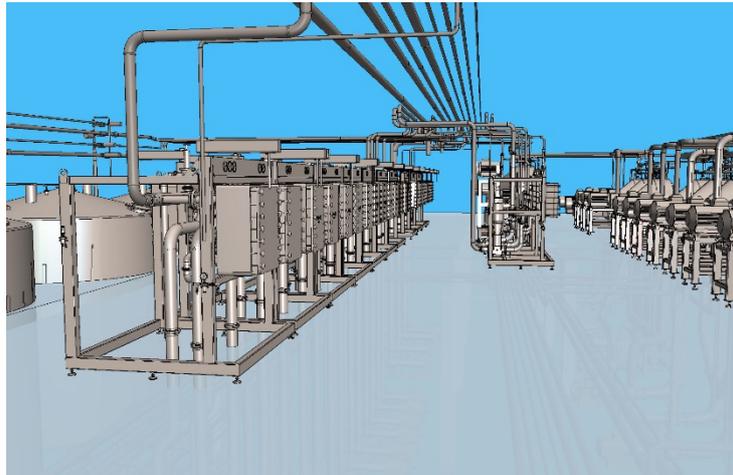
Centrifuges

After World War II centrifuges held their entry. Their greater artificial gravity gave a sharper separation of the starch from the rest. This meant more premium starch and less B-starch.

Hydrocyclones

Much later, centrifuges were displaced by hydrocyclones despite less gravity. It became technically and economically affordable to concentrate and dilute starch slurry in many repeated serial steps.

In Denmark, we used the modern technology for the first time in 1990. Together with the introduction of electronic process control, we managed to completely do away with B-starch.



Serial Hydrocyclones (left) refining of starch from 160 t/h fresh potatoes.

Serial application of hydrocyclones in refining of crude starch in counter flow with fresh water brings about the trick. Centrifugal refining screens completes the job.



Centrifugal screens (left), essential for extraction.

Application of new screening technology in the extraction allows at better fiber cut and thus an improved crude starch. A process taking advantage of this technology-gain facilitates a hydrocyclone refining line with no screens anymore.

Process

The importance of process and process control increases with use of Hydrocyclones. Following the construction of four Danish factories, the technology was much improved and allowed refining of the more fine-grained cassava starch and most recently even of the much finer cornstarch.

Water savings

From being a waste product, potato juice or rather its protein content has become a sought-after feed and the rest a valuable organic fertilizer. Refining therefore must be done with a minimum of water.

Energy Savings

A sophisticated process and process control, combined with improved engine management, has also contributed substantial to energy savings.

Status

- Low manpower
- Low water
- Low energy
- High purity
- High yield