

Quadro® FlexSift

SIFTING TECHNOLOGY COMPARISON FOR FOOD INGREDIENTS

BACKGROUND/REQUIREMENT

The Huijbregts Group BV (Huijbregts) is a European food processor who does work with powdered food ingredients such as additives, savoury, bouillons, dehydrated vegetables and herbs and spices. At Huijbregts these ingredients are inspected, stored, blended according to a recipe and packaged into a batch-pack. These pre-blends are then distributed to leading food industries around Europe. With business increasing, Huijbregts needed to find ways to improve operational efficiencies through better control of impurities and maximize flexibility in its production stream.

To this point in time, Huijbregts was utilizing different sifting technologies such as Vibratory and Horizontal Centrifugal Sifters with varying sieve size diameters based on the particle size of the starting product material. To ensure that it was using the best technology available on the market Huijbregts consulted with Prosysa B.V., a company which specializes in system integration. A study was commissioned by Huijbregts comparing the different sifting options available. The key areas under consideration were **capacity**, **final product quality** and **cleanability** of the equipment.

FLEXSIFT PERFORMANCE (AS EVALUATED BY THE HUIJBREGTS GROUP BV)

The Quadro® FlexSift was compared head-to-head against a vibratory and a horizontal centrifugal sifter.

Tests were conducted with various spices such as nutmeg, mace and pepper. The average capacity of the Quadro® FlexSift was found to be **3 times higher** than that of the Horizontal Centrifugal Sifter and the Vibratory sifter while **maintaining the attributes** of the product being sifted. In addition, there was **less residue** in the Quadro® FlexSift after the products passed through than in the Horizontal Centrifugal Sifter. In terms of performance, the **Vibratory sifter** was able to de-lump loosely agglomerated material but **blinded easier** decreasing the capacity significantly. The spoiler arm of the Quadro® FlexSift assists de-agglomeration and de-lumping for increased throughput and capacity. When the **Vibratory Sifter** is used with the same lumps, **good product is discarded** with the oversized particles. Even with the use of scrapers on vibratory sifters, the agglomerated lumps are still filtered (retained) because the lumps cannot pass fast enough through the screen.

In terms of cleanliness, the Quadro® FlexSift in CIP dry conditions was **easiest to clean**. Dry cleaning performance was tested by placing a vacuum at the top of the screen and blowing compressed air through the bottom plate which had holes drilled into it. The **Horizontal Centrifugal Sifter and Vibratory sifters** have a larger screen surface area, which made **cleaning times longer**. The **Horizontal Centrifugal Sifter** has **many difficult to clean areas** as compared to the FlexSift. If dry cleaned, the compressed air is not able to reach all of the areas increasing the risk of product cross contamination when the next product passes through.



Quadro® FlexSift



Vibratory Sifter



Centrifugal Side Entry Sifter

QUADRO® FLEXSIFT

Additional benefits noted in the study include the fact that the Quadro® FlexSift is **more compact** than the other two technologies and **easier to assemble**. The Quadro® FlexSift screen design has **fewer components** than the Horizontal Centrifugal Sifter or a Vibratory sifter. While the capacity of the Quadro® FlexSift is higher than that of the Vibratory or Horizontal Centrifugal Sifters, the **torque and sifting forces on the equipment are much less** than the other two sifting technologies. And finally, the **total weight** of the Quadro® FlexSift is **less** than either the vibratory or Horizontal Centrifugal Sifter of the same capacity. Quadro's solid stainless steel **screens resisted breakage** and required only a **fraction of the storage space** compared with the Vibratory or Horizontal Centrifugal Sifters.



SUMMARY

In summary, Huijbregts testing confirmed that the screening capacity of the Quadro® FlexSift is significantly higher than that of the Horizontal Centrifugal Sifter and of that of the Vibratory sifter. The FlexSift's compact construction utilizes less floor space for both its footprint and screen storage. At the end of a run, there is less residue left on the Flexsift screens as compared to the other technologies decreasing waste, changeover and cleaning times.

As a result of this study and with advice from Prosyssta B.V., the manufacturer purchased multiple Quadro® FlexSift units to meet its expanded production needs.

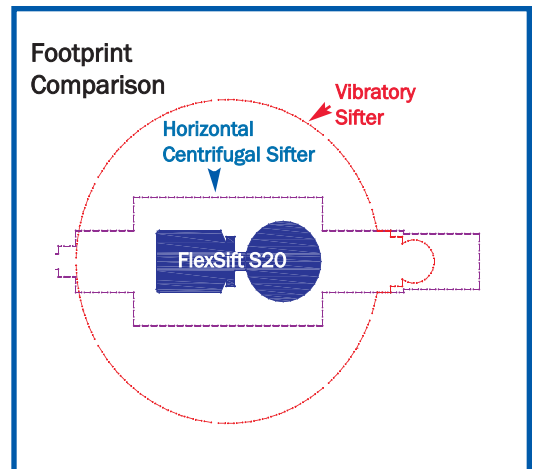


Chart 1 Selected Customer Test Results

Product	Screen Size		Capacity	
	micron	in	kg/min	lb/min
Nutmeg	1900	.075	60	132
Pepper	800	0.032	16.6	36.6
Mace	1100	0.045	2.5	5.5
Bouillon Mixtures	3100	0.125	74.8	164.9
Breadcrumb-style Coatings	3100	0.125	93	205
Stew (Free Flowing) Mixtures	3100	0.125	204	449.7