

- An application that allows farmers, mills and grain traders to control the harvest
- Replace manual methods with modern procedures
- Reduce operating costs, energy consumption and digitize important processes
- Specialized in modern software methods for all kind of industries & branches

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## Fritz Kunkel

Long professional experience in durum wheat milling. Developer, programmer and inventor.

Gold medal at IENA 2008

Passion for food, product safety and quality.

Founder and Entrepreneur



## Julia Böttcher

Responsible for software usability and laboratory results.

Technical documentation, advertising and marketing

Passion for good ideas and texts

Takes care of all the customer requests!



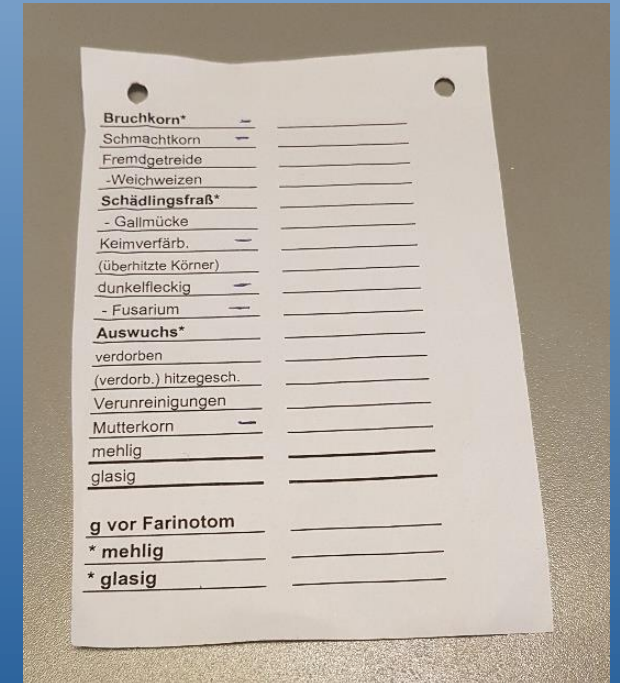
# Problem

Huge amounts of grain are loaded, transported and processed every day.

Grain quality is often examined using manual methods.

These methods are subjective, personnel-intensive and can only monitor small subsets of the entire product.

The quality of the current goods can only be determined with a time lag.

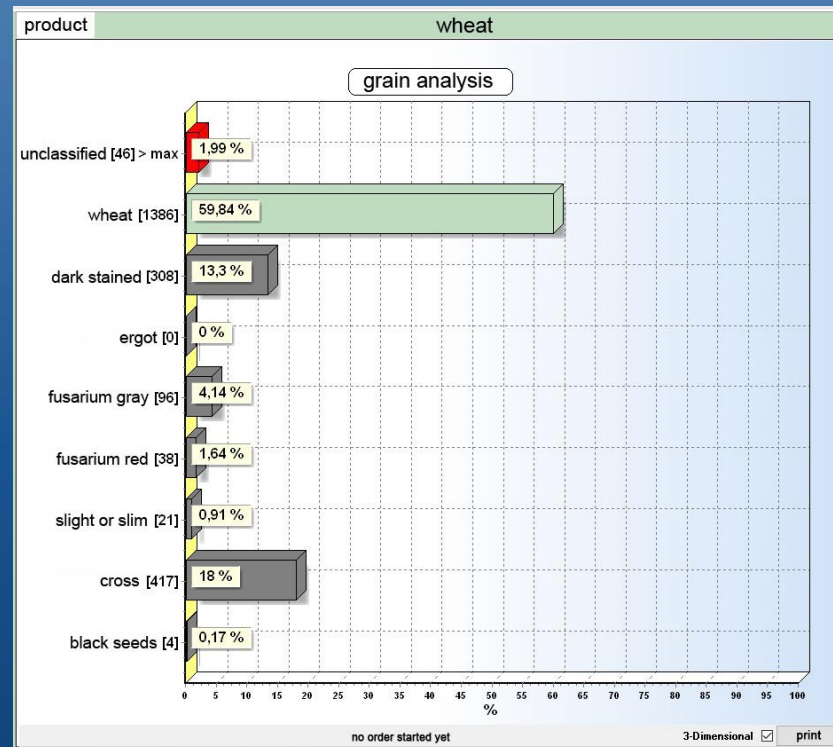


# Solution - The „Besatzmaschine“

The “Besatzmaschine” takes over the visual control of the grain quality in real time.

“Besatz” is German and means to specify the grain quality fractions.

The machine can be used both in the laboratory and directly in the process.



# Solution - The „Besatzmaschine“

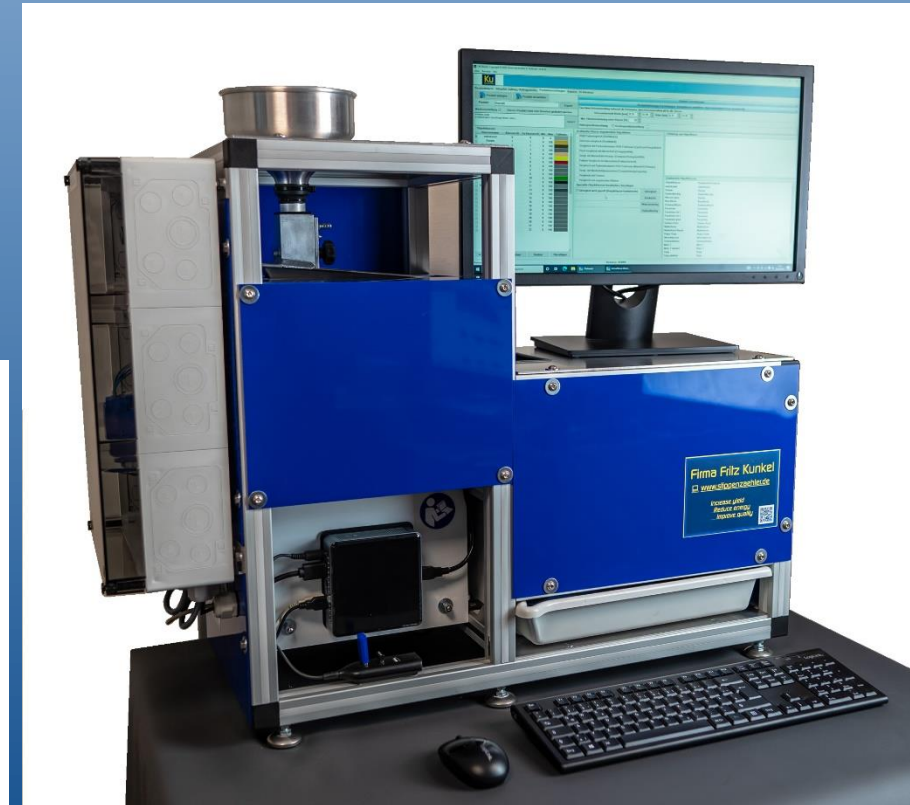
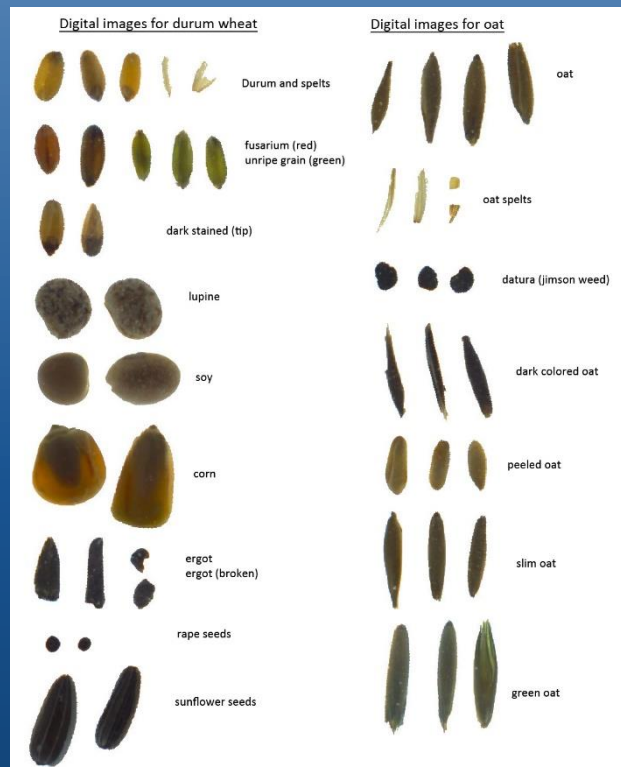
The product is filled in the top of the machine and analyzed with a camera in free fall.

The specially developed software enables the flexible division into grain classes. Different grain kinds can be analysed: E.g. wheat, barley, rapeseed, soya, rice & corn - and the machine can also detect mixtures.

With the optical parameters one can recognize the color of the object, color textures, outlines, circularity and deviations in the size of all objects.

The mealiness and glassiness of durum wheat is also determined.

The measuring speed is approx. one minute for 100 gram and is therefore 60 to 80 times faster than manual analysis.



The "Besatzmaschine"

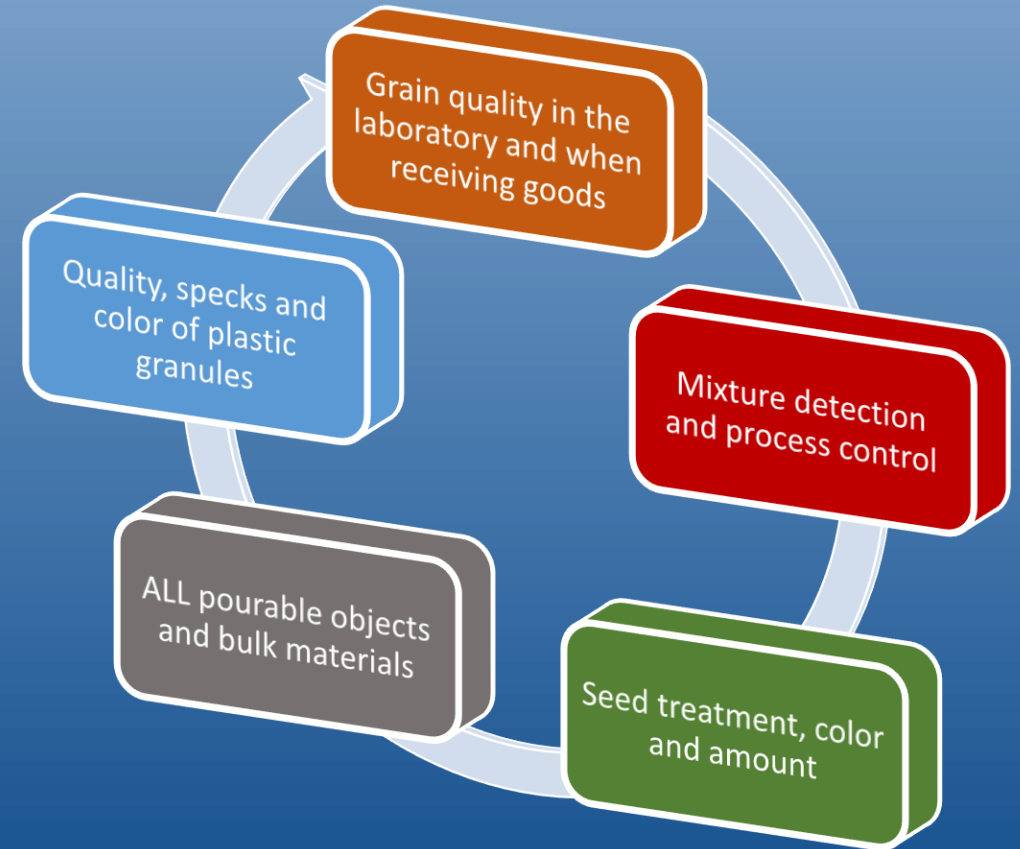
The sales opportunities for the “Besatzmaschine” are enormous.

Due to the flexible adaptability of the machine and the software, countless products and error classes can be examined.

It is also possible to adapt to completely different products, e.g. plastic pellets.

Our product database grows every day and keeps getting bigger. It is therefore also possible to invest in this data.

- Amount of grain harvested worldwide in 2022/23: 2.8 million tons <sup>1</sup>
- In Germany alone there are 187 mills and the bigger mills have a grinding capacity of >1000 tons per day<sup>2</sup>
- 350 million tons of plastic are produced worldwide every year. Recycling and product quality are becoming increasingly important<sup>3</sup>



1 - <https://de.statista.com/statistik/daten/studie/180674/umfrage/weltweite-getreideproduktion-seit-2008-09/>  
2 - [https://www.ble.de/SharedDocs/Pressemitteilungen/DE/2021/211026\\_Muehlenstruktur.html](https://www.ble.de/SharedDocs/Pressemitteilungen/DE/2021/211026_Muehlenstruktur.html)  
3 - <https://de.wikipedia.org/wiki/Kunststoff#Produktion>

- Appearance at trade fairs and special conferences, e.g. the Müllereifachtagung in Detmold, the Victam or the K in Düsseldorf
- Articles and reports in trade journals
- Advertising via human networks, such as LinkedIn
- Direct mailing of customers and processors
- Strengthening of one's own brand through quality and reliability: "German software experts"



Top: Young founders stand 2016  
"Innovation made in Germany" (Powtech Nuremberg)

Left: Article in German biggest milling magazine  
"Mühle und Mischfutter"

# Competitive Advantage

- We are the first provider to be able to measure so many measurement parameters in a single run (color, shape, specks, distribution, flouriness, glassiness, chemical composition with NIR).
- Our software is extremely versatile, as a start-up we can easily focus on new niches and markets
- Thanks to our own development and our own software, it is cheaper than the solutions from large established companies
- Our focus is not only on mechanical engineering, but also on digital image processing and modern IT solutions (e.g. pattern recognition, scoring algorithm, cloud)





# Business Model & Forecast

- Earnings through the sale of systems
- The portfolio includes several systems: OKS scanner, OKS scanner (pellets), OKS online for impurities in bulk goods, Besatzmaschine for grain, Pellspection for plastics
- Constant income through maintenance contracts and software updates for the customer
- Sample examination and benchmarks for new customers as a crisis-proof service model
- Planned: constant income through cloud services
- Earnings by research & development (new software)



# Capital requirements

Development of the systems is complete, we have finished products and are ready for sale. First sales successes encourage us to continue.

If the Kunkel company is to grow together with an investor, the company would have to be converted into a limited company (GmbH). In order to be able to grow internationally and increase the turnover from the systems sold, we need investments in workshops and storage space.

We mainly need money for trade fairs, promotional videos, ads in magazines and marketing.

In order to have a further advantage over competitors, we need investments in operating resources and technical equipment (computers, cameras, programming software, 3D printers, CAD software).

If we find an investor, we will be happy to make an individual offer for cooperation.

