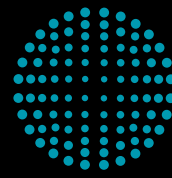


# NEXT LEVEL NUTRITION

Smart Food Performance  
by Fette Compacting

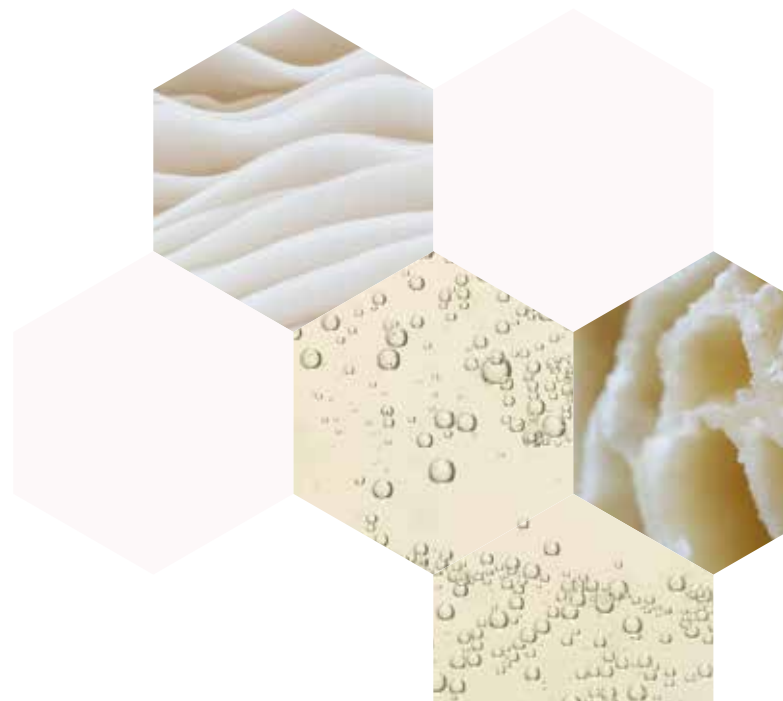


**FETTE  
COMPACTING**  
be efficient



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### **Flavor meets efficiency**

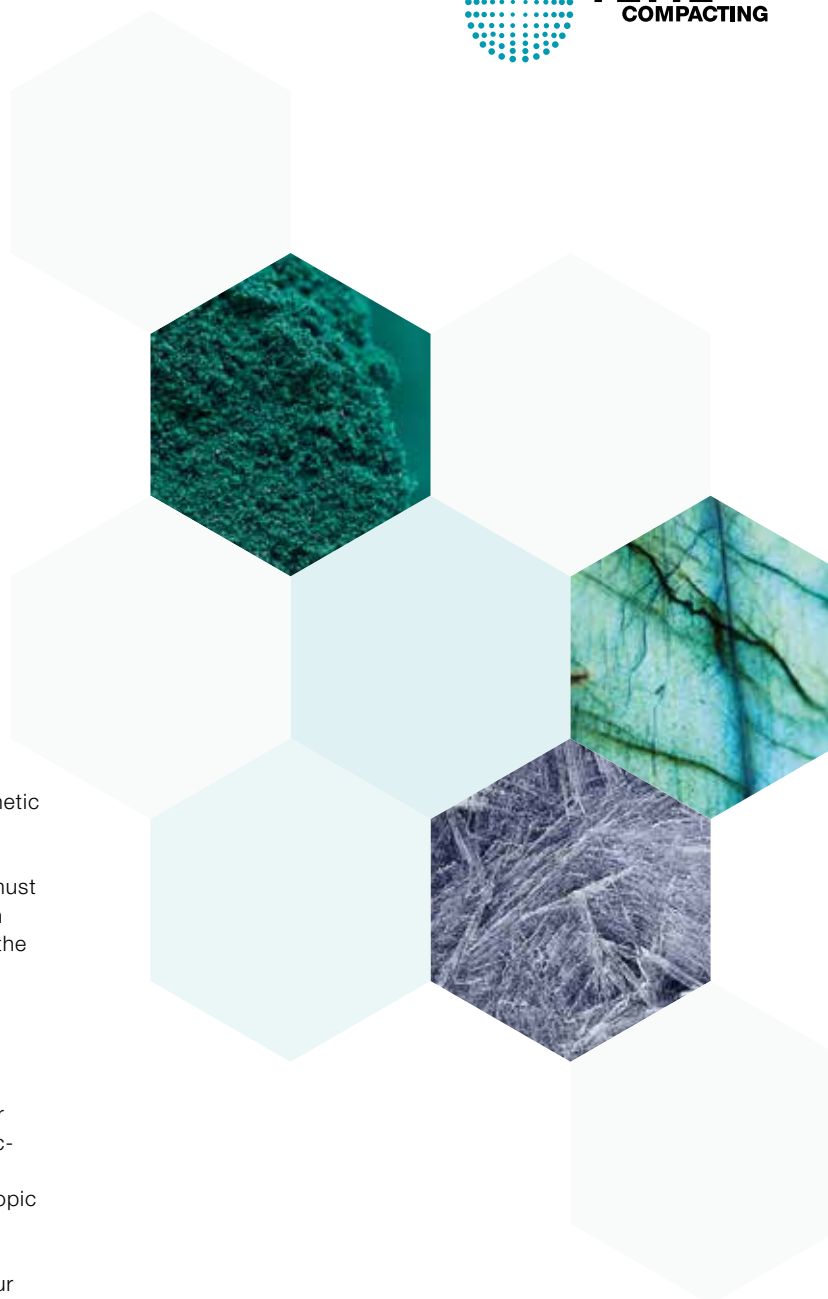
The production of nutritional supplements is an extensive area of shapes, colors and flavors. Nutritional supplements and food available in tablet or capsule form could hardly be more diverse: from natural, organically-grown substances through special synthetic products to confectionery - anything is possible.

But one thing always applies: the production of these products must be efficient in order to meet the demands of the growing nutrition market. Large volumes are required, but even more important is the technology reliably processing a wide variety of substances with properties which often fluctuate. Efficiency must go hand in hand with maximum product quality and food safety.

The tableting and capsule-filling technologies presented in this brochure are ideal for these requirements. They have proved their worth over and over again in nutrition and pharmaceutical production. Add to this the comprehensive experience of our experts when it comes to handling complex natural substances, hygroscopic compounds, sticky powder mixtures, and much more.

We hope you enjoy reading! And if we have managed to whet your appetite: please talk to us!

Your Fette Compacting Team

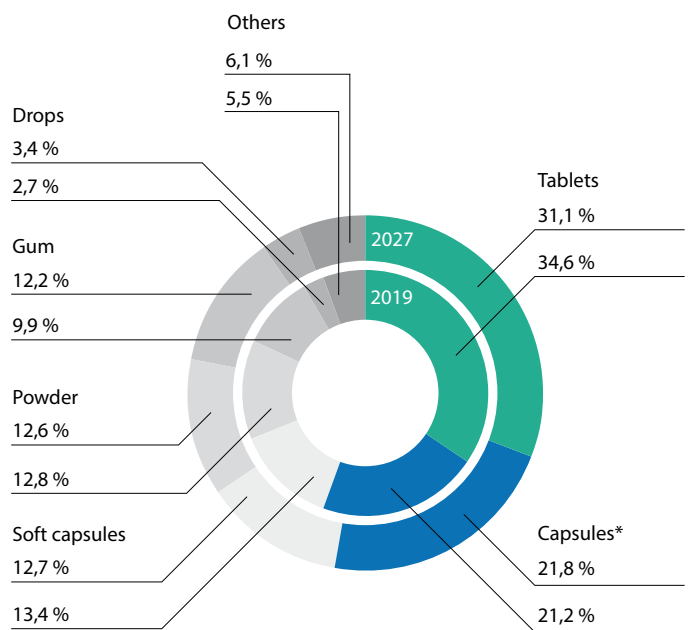


# The global nutrition market

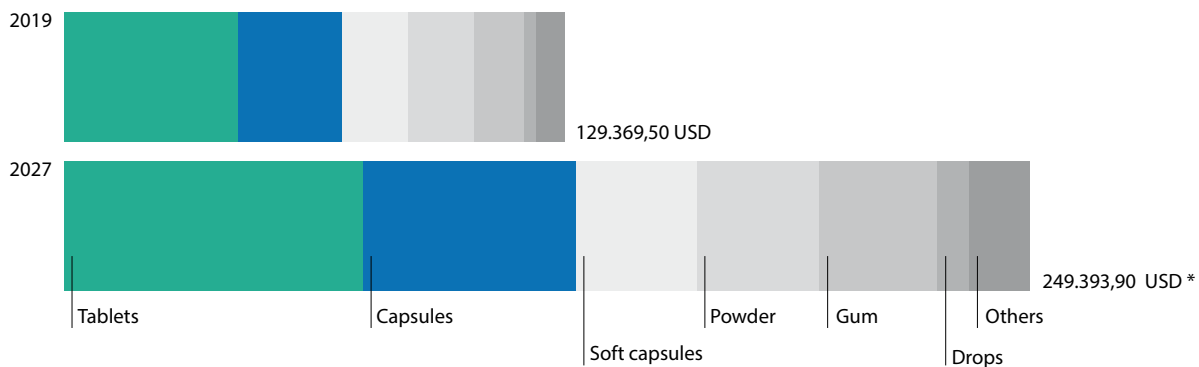
## In demand everywhere

Health and well-being are high in demand. Something that has not gone unnoticed by the manufacturers of nutritional supplements and biological solid formulation products. With growth of around 12 percent, 2020 was a record year for the global nutrition market. Studies are forecasting annual growth of a further 8.6 percent until 2027. The market for plant-based food is likely to grow by as much as 12 percent during this period to around 74 billion US dollars (USD).

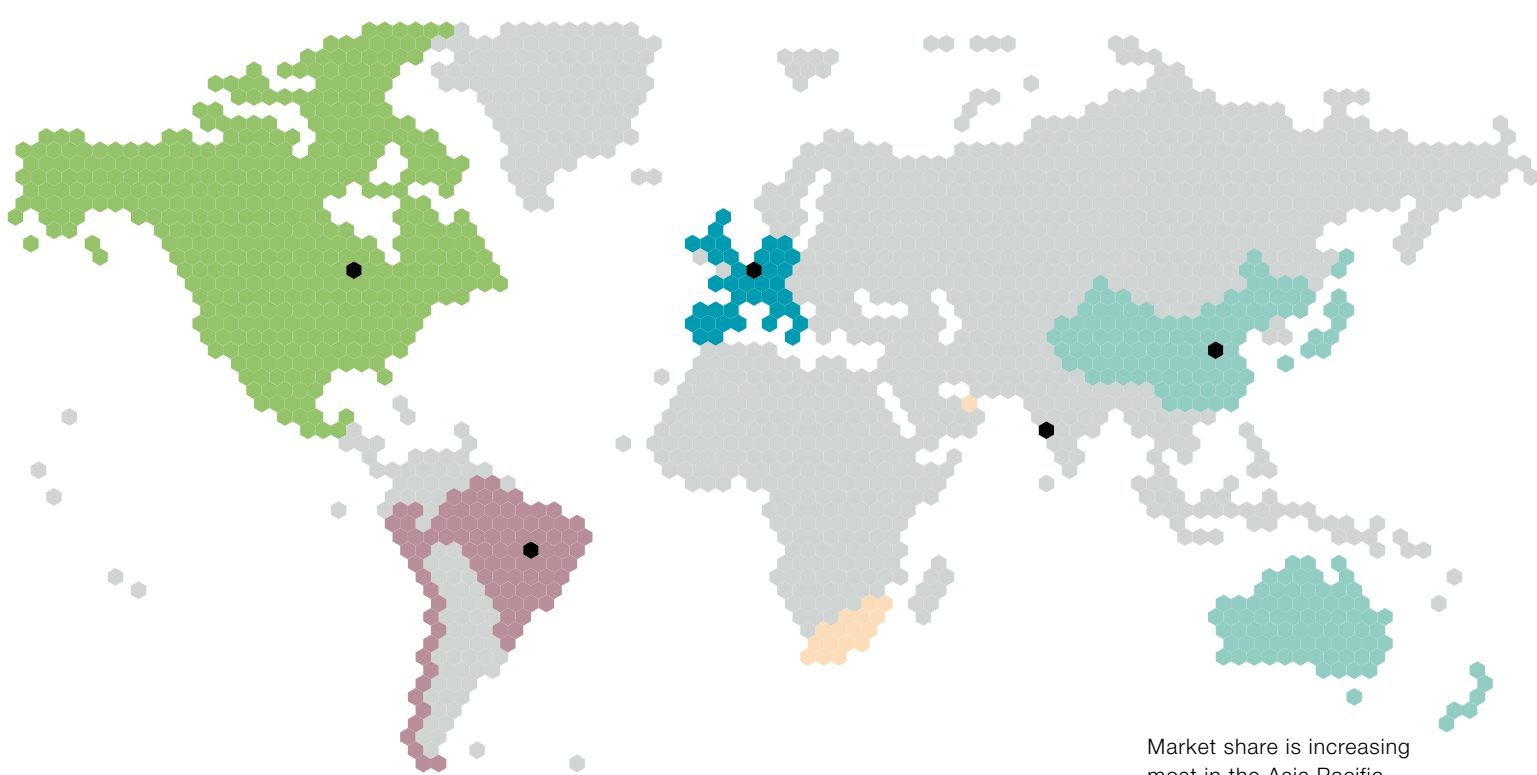
At the same time, there are also increases in the technological and regulatory demands on production. Consumers attach importance to ecological, regional and sustainable products, while manufacturers are using a mixture of natural and synthetic ingredients to meet global demand.



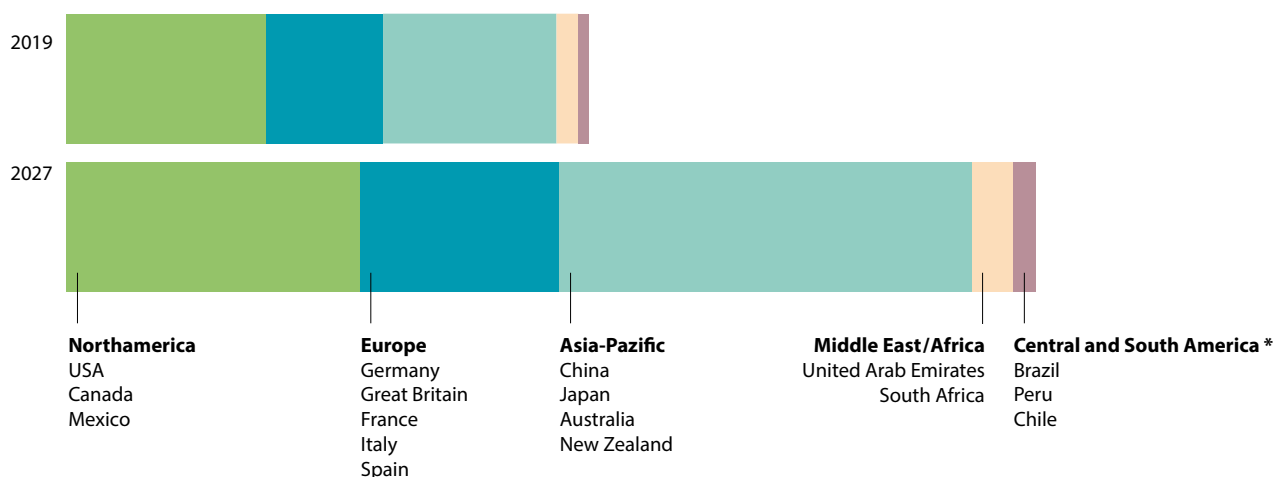
All figures are rounded.



Global sales of nutritional supplements accounted for around 129 billion USD in 2019 and are likely to increase to approx. 249 billion USD by 2027. For functional foods such as confectionery (not depicted here), experts are anticipating sales growth from a current figure of around 238 billion USD to 426 billion USD over the same period.



Market share is increasing most in the Asia Pacific region where it already makes up more than 30 percent of overall sales. Accounting for a share of around one-third, the US market is the most important domestic market.\*



### Tablets and capsules are top of the list

One feature of the nutrition sector is its enormous product diversity: from large-series confectionery to small batches with unusual natural substances. Pressed into tablet form or filled into capsules, the concentration of ingredients can be easily dosed and inexpensively manufactured. Both types of product have long shelf lives and are economical in terms of space.

With an anticipated growth of 7.1 percent, tablets will remain the most popular form of product in the future, too. Their inexpensive mass production makes them the most economically-viable product on the global market. In 2020, tablet sales accounted for approx. 48 billion USD. This figure is likely to reach more than 77 billion USD by 2027. Capsules take second place, with sales of approx. 30 billion USD in 2020. Experts are anticipating around 9 percent growth to more than 54 billion USD by 2027.

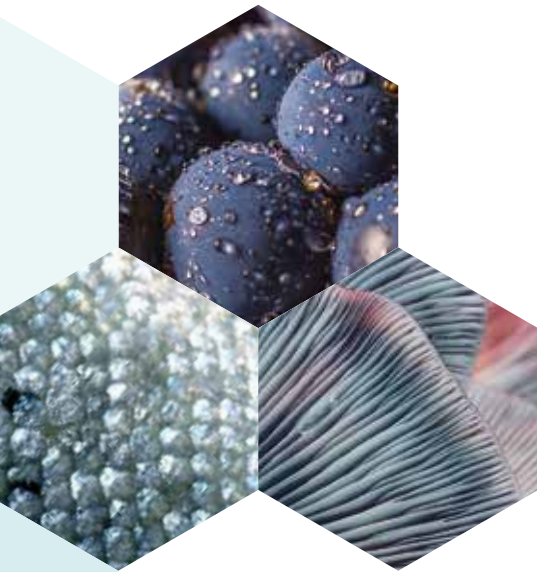
### Top products from top machines

There is a global trend toward resource-saving, sustainable production and cost-efficient products of high quality. This strong growth is facilitated by e-commerce platforms, mass production and strong competition as well as constantly low prices. Technologies from Fette Compacting offer the most efficient solutions for this as they unite reliable production technology – even for large batches and in the case of frequent product changes – with contamination-free food safety. Various nutrition priorities are presented on the next few pages. And practical examples show you just how versatile this production area is.

\* Market share by product, form of administration and region. Source: Grand View Research

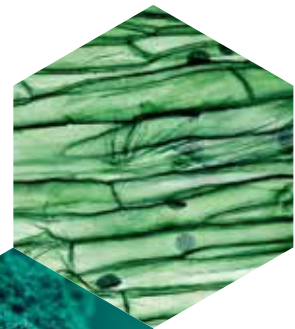
# Areas of application

## Maximum variety



### **Nutritional supplements**

Health awareness and preventive medicine are international trends. More and more people are using these nutritional supplements as a way of ingesting additional vitamins and minerals. Dietary foodstuffs for certain groups such as athletes, vegans, pregnant women, or senior citizens are also very popular. Fette Compacting offers a wide technical range for the production of mini to major batches of nutritional supplements.







### **Biological products**

Purely natural substances of ecological origin are currently very popular among consumers. They prefer products with a high degree of natural ingredients. Above all else, stability plays a key role in processing. In terms of process reliability and product quality, it is imperative that the production technology works absolutely reliably. Fette Compacting displays expertise in both tableting and capsuling such sensitive substances.

### **Confectionery**

This production area could hardly be any more colorful or varied: confectionery includes all kinds of candy, gum, and lozenges, the production of which is often high-volume and very complex on account of special product characteristics such as adhesive tendencies. A special area is represented by functional confectionery such as dextrose, for example, which is similar to nutritional supplements and in some cases makes special demands on solubility. This is necessary in order to display its optimal effect inside the body.



# Nutritional supplements

## More nutritional value

### Cost-efficient growth

By-Health has enjoyed enormous growth during the course of the Chinese health reforms. At its site in Zhuhai, the manufacturer of nutritional supplements and pharmaceutical products can now produce more than five billion tablets per year. One driving force is represented by the KEYLID calcium tablet with annual growth rates of up to 200 percent. In an effort to meet the huge demand, the company has opted for several P2020 and P3030 tablet presses. They offer an optimal combination of cost-orientation, precision, quality and safety. And fast on-site support within 48 hours has also made Fette Compacting China the perfect partner for the production targets aspired to by By-Health. Output increased to more than 99 percent while the number of bad tablets tended toward zero.



**BYHEALTH**



# Biological products

## Nature in its compact form

### 100 percent natural

The rare Chinese caterpillar mushroom is a natural remedy with a wide range of applications and enjoying increasing popularity throughout the world. Manufacturers face major challenges when processing such sensitive natural substances. For a long time, it was thought to be impossible to press the sensitive base product into tablet form without additives. Other manufacturers' machines failed to comply with the desire for an entirely natural tablet. This feat only became possible with the P-series from Fette Compacting. Many years of tests resulted in gentle pressing accompanied by constant product quality. Using a P3030 from Fette Compacting, Macau Fu yi tang manufactures three 15 kg batches of tablets a year.



# Biological products

## Nature in its compact form

### Optimal mix

waterdrop® – a young company based in Vienna (Austria) – manufactures effervescent tablets from natural fruit and plant extracts. The goal declared by founder Martin Murray: to enrich water with flavor and vitamins in order to encourage consumers to drink more tap water. But there is one obstacle to the finished product: the natural extracts need to be brought into a stable form which is still sufficiently “unstable” that they dissolve in water within one minute. Numerous tests were carried out on a 1200i tablet press in an effort to find the optimal mix in Fette Compacting’s German Competence Center. The tableting experts also developed a special mold for realizing a unique cube design. Murray is more than satisfied with the result: “The deciding factor for me was that Fette Compacting always had faith in us despite this difficult design.”



# Confectionery

## An acquired taste

### For any powder mixture

sanotact in Muenster (Germany) produces functional confectionery and nutritional supplements. In parallel operations, eleven tablet presses from Fette Compacting each produce a different type of confectionery. Prerequisite for maximum output and consistent quality: the machine must perfectly match the product. For example: when sanotact conducted a field test on the FE55 for manufacturing two-layer tablets, it was immediately convinced by the efficient production and easy operation. "After a large batch of licorice pastilles, it can happen that the interior of the tablet press is dyed entirely black," explains Thomas Breuer, Head of Design at sanotact. "We were particularly impressed by the design of the machine in this regard as it provides easy access to all assemblies. This enabled us to optimize the set-up and cleaning times even where complex powder mixtures are involved."



# Tablet presses

Technology from  
the world's market leader

Whether nutritional supplements or confectionery: tablets are the product of choice in the area of nutrition production. And Fette Compacting is the world's leading manufacturer with several thousand machines installed. These tablet presses stand for maximum efficiency, product quality and process reliability accompanied by easy operation.



FE55

## FE Series

### Maximum performance

The FE Series combines maximum performance with uniquely intuitive operability and a high degree of plant availability. From the FE35 single rotary tablet press for fast product changes through the FE55 all-rounder to the FE75 double rotary tablet press for large batches and hard-to-press powder: this machine trio covers all of the requirements of nutrition production.





F10i



P3030

### **i Series**

#### **Flexible and highly-productive**

Entirely overhauled, the i Series offers the very best prerequisites for state-of-the-art production environments. The F10i is a flexible and highly-productive single rotary tablet press for smaller batches. The F30i double rotary tablet press achieves an output of up to 1.6 million tablets per hour. Both models can be swiftly adapted to various nutrition requirements.

### **P Series**

#### **Tried-and-tested and standardized**

Having proven its worth for many years, the P Series stands for a combination of efficiency, quality and cost-orientation. The compact P1010, the P2020 for medium-sized batches, and the large P3030 all comply with the requirements of good manufacturing practice. They permit easy and flexible production as well as swift format changes.





# Capsule filling machines

Efficiently filled,  
safely encapsulated

Capsules are a preferred form of administration, particularly for natural products and nutritional supplements. They permit gentle processing and safe transport of sensitive substances. The same standards apply for filling as for tableting: maximum efficiency, quality and flexibility. The FEC Series combines these demands with uniquely easy operation.

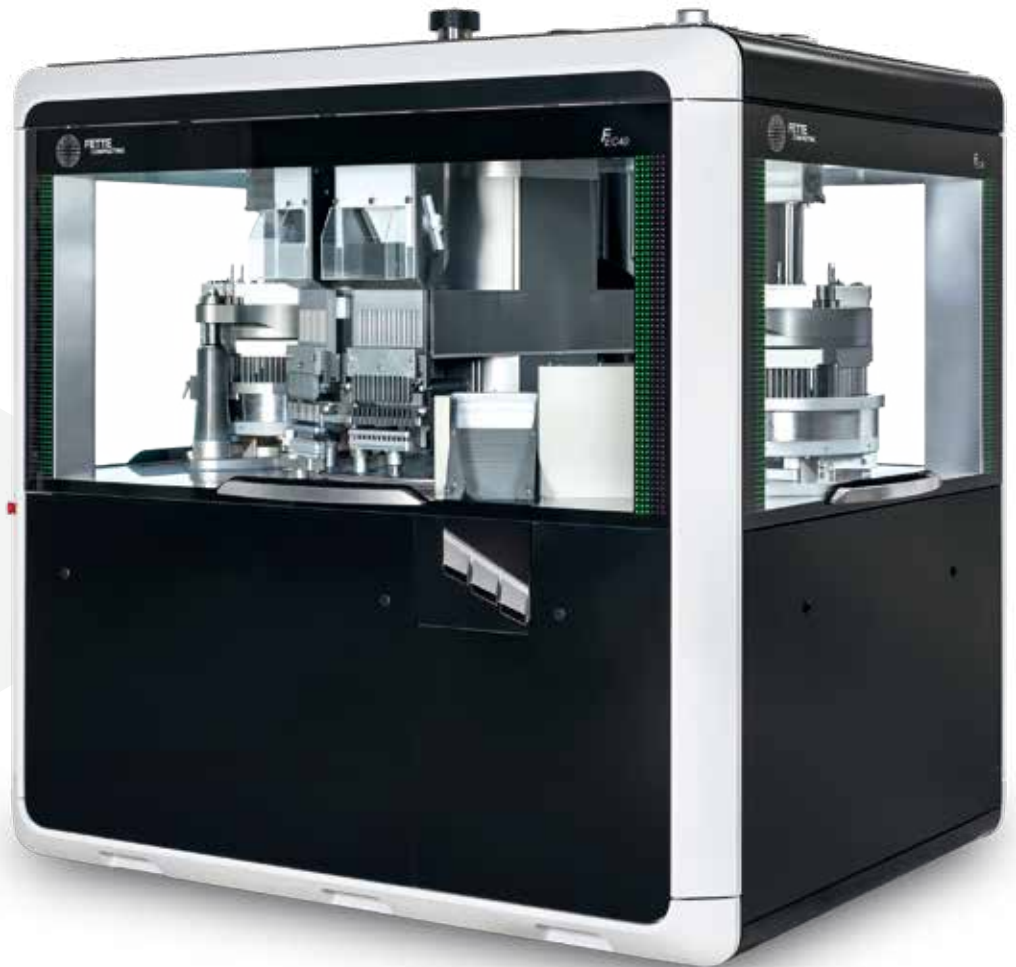


## **FEC20**

### **Fastest product change**

The FEC20 features a revolutionary operating concept: during a product change, the tamping pin stations – or the pellet station available as an alternative – can be dismantled and cleaned entirely outside the machine. This translates into much shorter conversion and cleaning times. Using servo- and torque motors, process steps which have been coupled to date can now be set independently. This reduces the overall processing time without compromising on quality. The FEC20 is designed for batch sizes of up to 200,000 capsules per hour.





#### **FEC40**

##### **Maximum output**

With an output volume of up to 400,000 capsules per hour, the FEC40 sets entirely new standards in the area of capsule filling. Its duplex concept unites two comprehensive capsule-filling processes on an unchanged base area which reduces the production costs per 1,000 capsules by up to 30 percent. Furthermore, it also features the same operating and drive concept as the FEC20. And it contains many identical parts which can be easily replaced when used in combination.



# Used machines

## Introduction to high-quality production

Fette Compacting also offers new customers the opportunity to acquire used machines which have been overhauled or to avail of leasing models. Accordingly, start-ups and companies still in their growth phase can benefit from high productivity, quality and flexibility right from the start.

### Used machines

#### Fast-track overhauls

Companies relying on a used tablet press from Fette Compacting can depend on strong performance and high product quality. Users save on investment costs and are eminently prepared for future requirements in the nutrition market.

This option is centered around our Factory Rebuilt Center (FRC). This competence center for general overhauls and repairs aligns used machines with the current state of production technology. The experts in the FRC also offer advice on how to improve the efficiency of the plant over the long term using the right process equipment and modular modernization.

**Do you have a question on a product or process?**

**Talk to us: [FRC@fette-compacting.com](mailto:FRC@fette-compacting.com)**



before



after

# Consulting

## From design to process optimization



**Do you need to bring a difficult-to-process raw material into tablet or capsule form? Do you require a special shape which differs greatly from the standard? A basic principle at Fette Compacting: anything is possible! We have always been able to work with our customers to find the appropriate solution for each nutrition case.**

### **Product consulting – anything is possible**

The consulting topics in the area of nutrition are as manifold as the products themselves, whereby Fette Compacting avails of many years of experience in this regard. As a result, it has even been possible to bring natural substances such as the Chinese caterpillar mushroom into tablet form although it was long regarded as “impossible to press” (see page 9). The extensive expertise offered by these experts includes the right acid-base mixture for effervescent tablets or the production of particular geometries such as squares, hearts or stars.



### **Process consulting – clean on target**

The processing steps involved in nutritional supplements are often challenging. For example, many mixtures tend to stick inside the press or capsule-filling area. In each case, Fette Compacting always finds the appropriate solution such as tools which are particularly suitable against adhesive wear or a press room coating.

### **Competence Centers – bundled know-how**

Fette Compacting operates a global network of Competence Centers offering consulting, product tests, training and services in Germany, the USA, Brazil, India and China.

**Do you have a question on a product or process?  
Talk to us: [consulting@fette-compacting.com](mailto:consulting@fette-compacting.com)**





# Lifetime Efficiency

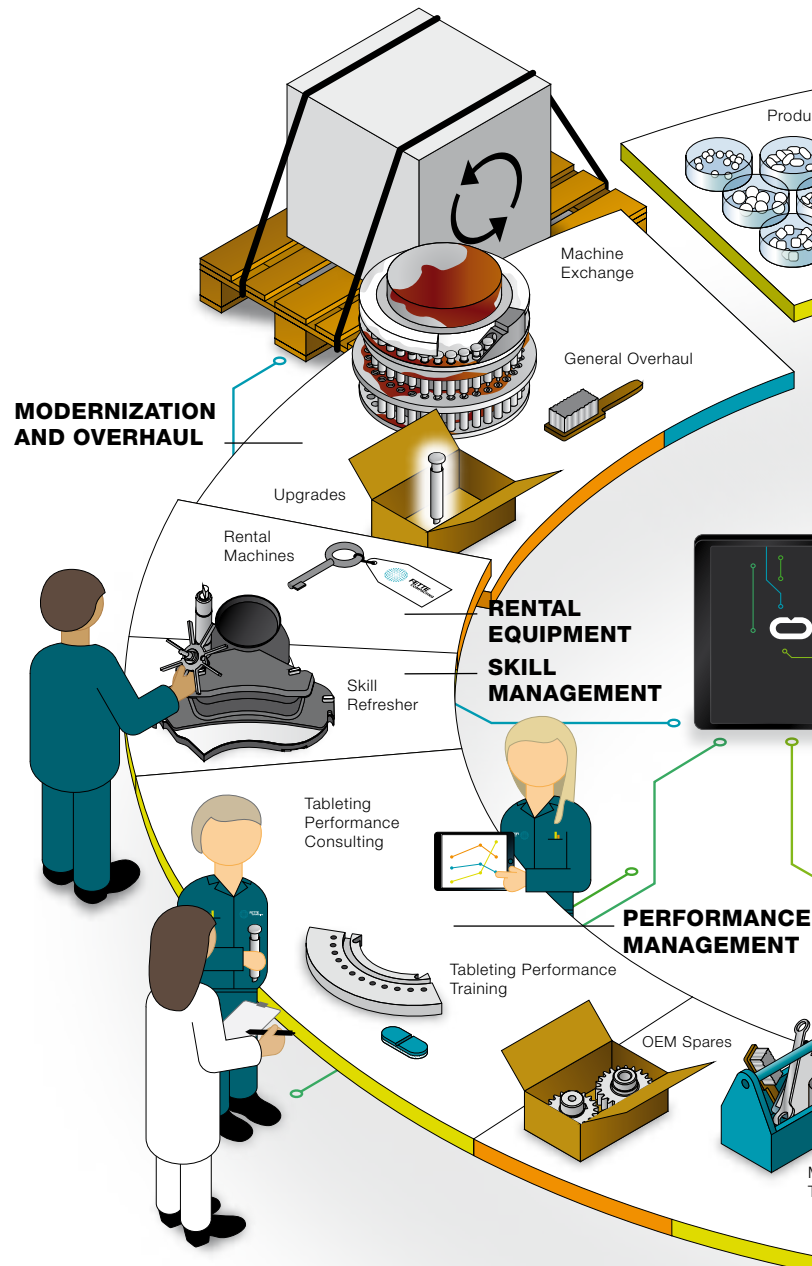
## The entire production at a glance

The manufacture of nutrition products and nutritional supplements harbors a multitude of potentials for improving efficiency. In order to take advantage of them, users need an unambiguous concept as to how the overall performance of their production can be optimized over the life cycle of their plants.

This is exactly what Lifetime Efficiency is made for. This comprehensive approach broadens the view to include the life cycle of the plants. From development through production to modernization, individual solutions are tailored exactly to the respective requirements in the individual life phases.

Lifetime Efficiency is based on the guiding principle of analyzing all factors of relevance for production and optimizing them continuously on the basis of the data gleaned. This way, you can lower your overall costs in nutrition production and increase productivity over and beyond the life cycle.

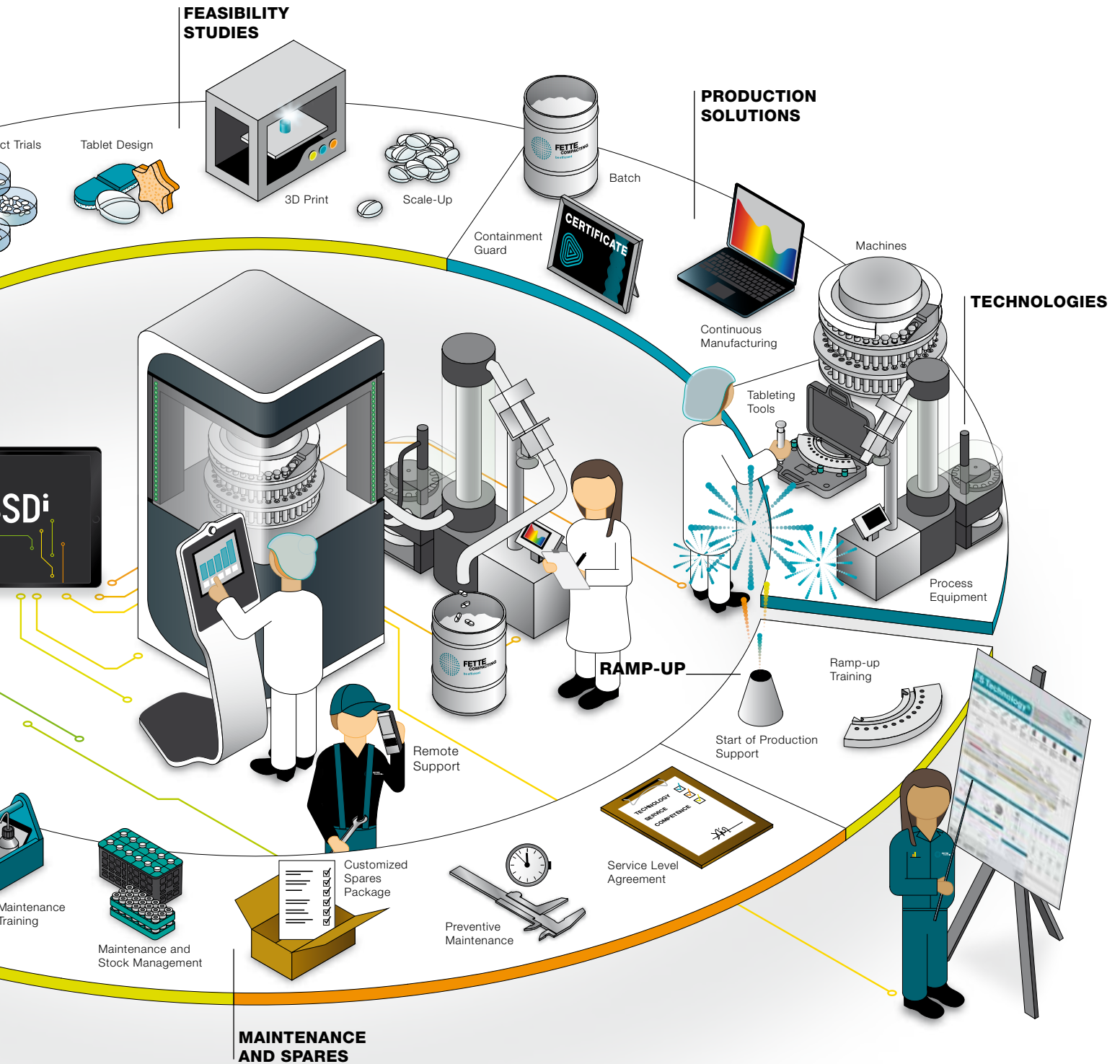
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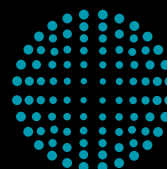
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