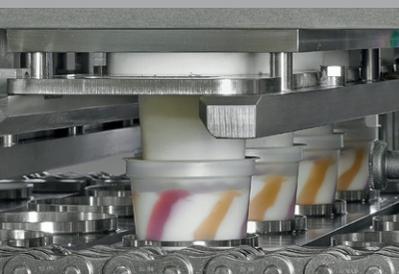


HIGH LIGHT



Editorial - 15 years GRUNWALD NORDIC - a success story	2
Suitable dosing technology for Valio Eesti A/S	3
The third filling machine for Arla Oy in Finland	4-5
Tailor-made filling for Scandic Food Nr. Aaby	6-7
On everyone's lips: White Cheese	8-11
The GRUNWALD donation and what has come out of it	12



15 years GRUNWALD NORDIC – a success story

EDITORIAL



When the GRUNWALD NORDIC sales office was founded in Denmark in 2005 we could hardly assess the high potential of the Northern European markets for our machine portfolio.

Essential factor for the success of GRUNWALD NORDIC is the local presence as short reaction times are important to us in order to support our customers and potential customers at short notice. As a food and dairy technologist and from his almost 30 years of professional experience in mechanical engineering Peter Aalund has an enormous knowledge – particularly in the field of dairy technology. In addition, Peter has the right vision and an unerring sense for future trends.

Peter Aalund is basically at home in all Scandinavian countries and the Baltic States. He knows his markets. His expertise, project-related advice and his multilingual skills are highly appreciated by our customers.

When we founded GRUNWALD NORDIC at the same time a strong network of agencies was established which, well networked, has been working together reliably and in a spirit of trust ever since. There are GRUNWALD agencies in Norway, Finland and the Baltic States.

Facts and figures of the success story

Since GRUNWALD NORDIC started 15 years ago, we have sold and put into operation approx. 180 filling and dosing systems. During this time the number of customers has increased by five times. Machine sales have increased by more than five times the amount. These figures reflect the high satisfaction of our customers in these sales areas and underline the success story of GRUNWALD-NORDIC.

When you stand in front of the refrigerated shelves with dairy products in some of the Nordic countries today you will notice that the majority of these products are already filled on GRUNWALD filling lines. This great

feedback from the market is an additional motivation for us to continue developing our machines further so that we can provide our customers with the maximum and fastest possible support 24 hours a day, 7 days a week and so that they can finally provide reliably service to their supermarket customers and other customers every day.

Looking to the future

The success story of GRUNWALD-NORDIC is reason enough for us to consider establishing a comparable sales office in another important sales area in Europe. We are convinced that this will enable us to further strengthen and improve our market position. This will also secure GRUNWALD's position as a pioneer in the future.

We wish you all the best and above all, stay healthy!

Yours
Ralf Müller
and the **GRUNWALD team**



Suitable dosing technology for Valio Eesti A/S

GRUNWALD-ROTARY 12.000/3-lane for each type of cottage cheese

Cottage cheese is a soft cream cheese which is also called grainy cream cheese due to its grainy structure. This dairy product is produced in many countries and consumers often buy it traditionally and there are manifold varieties of cottage cheese

In addition to the traditional cottage cheese recently above all the low-fat chottage cheese has become popular. This non-pumpable type of cottage cheese is also called "Finnish type" and the contents of liquid is only approx. 20%. With the filling of this low-fat and very dry type of cottage cheese many suppliers of filling and packing machines reach their limits.

Special and above all flexible filling machines are required to meet the differences in product types and the constantly changing requirements of the market.

In addition the country-specific tastes of the consumers and the traditional cuisine of the country have to be considered. Then there are the different production processes of the dairies and their own recipes and compositions.

The suitable dosing technology

At Valio Eesti A/S, the differences in types of products and market demands required a special filling machine which could not only handle the traditional mixed Cottage Cheese

incl. 40 % - 50% cream/dressing but also the non-pumpable "Dry-Cottage Cheese" incl. 20 % dressing.

As customer preferences are welcome challenges for GRUNWALD, we have developed the appropriate dosing technology for the different cottage cheese products.

The requirement was to use technical solutions to maintain the grainy structure during the filling and dosing process, to avoid the unmixing of the cream and to achieve a weight-accurate dosing.

The delivered GRUNWALD-ROTARY 12.000 enables a flexible production of cottage cheese which meets the preferences of the consumers, the country-specific recipes and the changing requirements of the market.

The success of our development work is proven by the fact that more than 20 filling machines were supplied within the last six years – each of them specifically designed for the country's customary type of cottage cheese.

Statement from Valio Eesti A/S, Mr. Priit Aare, Technical Manager:

"With the GRUNWALD-ROTARY machine we have managed to get a high performance and compact machine which fills different kinds of cottage cheese in various cups."

INFO



Valio Eesti A/S is a major local dairy company founded in 1992 which is producing and marketing fresh dairy and cheese products made of milk from mainly Central and South Estonian farms.

The factories of Valio Eesti A/S are located in Valmaotsa Village in Tartu County and in the City of Võru. Valio Eesti A/S improves their product range annually, producing almost 300 different dairy and cheese products in total.

Dairy products of Valio Eesti A/S can be found in Estonia, Latvia, Lithuania, Finland, USA, Italy, Germany, Cyprus and other European countries.
www.valio.ee

CONTACT

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3-lane cup filler
GRUNWALD-ROTARY 12.000
for filling pumpable and non-pumpable cottage cheese in cups of different sizes

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The third filling machine for Arla Oy in Finland

Unique and flexible filling technology with the cup filler GRUNWALD-ROTARY 20.000E



The cooperation between Arla and Grunwald, based on a trusting relationship and on a partnership, started 25 years ago. A quarter of a century that both can look back on with pride.

Since 1995 Grunwald have supplied approx. 50 machines to Arla Europe-wide. To Arla Oy in Finland, Grunwald recently supplied the third filling machine - a 4-lane rotary-type cup filler GRUNWALD-ROTARY 20.000E. The equipment of Grunwald machines is well-known to the employee at Arla Oy, as they have been working for many years with a bucket filler GRUNWALD-FLEXLINER XL as well as a high capacity 8-lane inline machine type GRUNWALD-FOODLINER 20.000 for filling yoghurt, Viili, quark and Skyr in cups.

Case study

The demand of launching new products to the market, was one of the key words, when Arla Oy in Finland joined with Grunwald for the new filling machine.

The task for the new machine was a medium sized but full format flexible machine for cups with ø 75 and ø 95 mm, including a lidding station for handling normal lids, spoon lids and Muesli top lids. Furthermore the machine should include all the newest features for a precise and weight-accurate adding of jam to different products, in this case quark and yoghurt.

For this purpose the GRUNWALD-ROTARY 20.000E was chosen because this filling and closing machine meets all requirements.

GRUNWALD-ROTARY 20.000E – the all-rounder for Arla

This Grunwald rotary-type machine is equipped with an extremely flexible filling system and allows Arla Oy to produce a wide variety of products such as:

- liquid to pasty yoghurts with fruit layer or with jam
- various types of stirred fruit yoghurts produced with the (integrated??) inline fruit mixer
- mixing fruit into the plain yogurt with the fruit mixer just before it enters the cup
- multi-flavour premium dairy products filled by means of the fascinating "side-by-side" and "swirl" technique

With this system the yogurt part (white base) remains in the buffer tank. Only the fruit part is swirled.

The advantages of the integrated fruit mixer are as follows:

- minimal fruit waste
- great flexibility for dosing fruit in either cup bottom or mixed in
- fast fruit change
- accurate dosing of fruit quantity for each cup, for each recipe
- space-saving, as the fruit mixer is integrated in the filling machine
- CIP cleaning for the filling machine and for the fruit mixer as a complete system.

Hygiene level

Also at Arla Oy the demand for high hygiene level without usage of chemicals is a must. Therefore the GRUNWALD-ROTARY 20.000E was equipped with UVC sterilisation for cups

and with foil sterilisation as well as a sterile overpressure cabin class 14. Furthermore the dosing system was in SIP version incl. sterile overpressure.

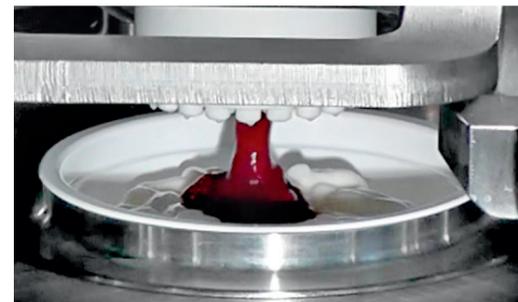
We are looking forward to future tasks and challenges and are convinced that we will implement them successfully with and for Arla, competently, creatively and with know-how

Statement from Vesa Hostikka, PTD Manager at Arla Oy:

"This new fully flexible machine, has proven to give us high flexibilities and with easy and fast changeover for different products."



GRUNWALD dosing technology "swirl"



GRUNWALD dosing technology "topping"

Filling machine 1:
Bucket filler GRUNWALD-FLEXLINER XL/1-lane
with Quick Format Changeover System
Self-optimising weighing unit
Machine width: 1,000 mm
Single-lane design
Approximately 240 - 900 buckets/h
Dosing range: 1 - 20 litres



Filling machine 2:
GRUNWALD-FOODLINER 20.000/8-lane
flexible packing line with the following specification:

- sterilisation of cups and lids
- quick change over time
- production speed up to 20,000 cups/h
- integrated packer
- "low level" cup and snap-on lid magazines
- 2 round cup sizes with different cupheights
- cup and seal lid sterilisation
- pre-filler and main filler in CIP design

Filing machine 3:
Cup filler
GRUNWALD-ROTARY 20.000E/4-lane



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Flexible from A – Z

Tailor-made filling for a variety of packaging materials and products

the know-how to develop solutions and to finally meet the customer's requirements.

Well prepared for the future tasks

The excellent cooperation between Grunwald and Scandic Food Nr. Aaby was of particular importance for the delivery and commissioning of the dosing system because the filler had to be adjusted to approx. 30 different packaging materials, eight different transport screws and adapted to numerous different products.

For this reason the GRUNWALD-SERVODOS was initially set up in our factory for only three basic packaging materials. Through an intensive training of the machine operators it was then possible for the customer himself to adapt the dosing system to all, approx. 12 different packaging materials and set it accordingly.

Once again it was shown that the seemingly impossible can be achieved when the project managers of two companies get on well together and work hand in hand.

Furthermore this filler enables a fast changeover for the indexing scrolls for the bottles by:

- an easy changeable scroll
- the automatic adjustment of the side rails for the different bottle shapes
- format change within 5 min.

With a special design of an automatic bottleneck centering unit it was able to dip down into the tall bottles and perform a drip free filling even at highest speed.

With the GRUNWALD-SERVODOS/6-head filler supplied and commissioned in spring last year Grunwald could prove once again that pure technology is available from many companies but not the experience behind it,



Photos above: GRUNWALD-SERVODOS 6-head filler with different bottle formats during the filling process

Photo left page: 6-head filler GRUNWALD-SERVODOS

Photos below: Examples of the different products, filled with GRUNWALD-SERVODOS/6-head

INFO



Scandic Food A/S is an international manufacturer and supplier of a wide range of quality foods under its own brands and private labels.

The owners of this family-owned company are proud to be a subsidiary of the Good Food Group (GFG), which consists of 10 companies and employs 245 employees in Denmark. The Group is represented in seven countries – Denmark, Sweden, Norway, Poland, the United Kingdom, Germany and the USA.

Until January 2019, the second and third generation operated the group. Today it is owned by Maj Invest. The Group has a total of 550 dedicated employees worldwide.

Statement from Torben Karstensen, Site Director Scandic Food Nr. Aaby on the investment in the GRUNWALD-SERVODOS/6:

"We at Scandic Food Nr. Aaby are very happy with our choice of Grunwald as partner for this project. The machine performance and the service have been to our full satisfaction."

www.scandic-food.com

In 2019 Grunwald and Scandic Food Nr. Aaby agreed to join for a new high flexible bottle and jar filling line.

The special task was:

- to have a high flexible machine for a fast change over from one bottle format to another
- format change without use of any tools
- the filler can handle bottles and jars with max. possible capacity
- 12 different bottles or jars with different sizes with a volume from 150 ml up to 1,000 ml should be able to be filled
- the filler should be fully CIP cleanable
- the dosing system should be able to fill all kinds of dressings, ketchup, mayonnaise and dip sauces – both cold and hot
- another important task was the filling of tall bottles.

Scandic Food Nr. Aaby has set great value on filling machines with a maximum of flexibility and fast format changes for all packaging materials. The cleaning process has to be carried out in the shortest possible time in order to keep the machine availability as high as possible. Further important requirements for this new filling machine were the high hygiene standard and high dosing accuracy.

Based on our long-term experiences we offered the GRUNWALD-SERVODOS. This dosing machine is ideally suited to realise all requirements. And when the Grunwald project team had the idea to design this filler as a special 6-head filler, this was the decisive step ahead.

Realisation of customer requirements

The advantage of this system is:

- the simple design
- minimising the amount of parts to be changed during format change,
- fully-automatic CIP cleaning
- highest requirements for hygiene
- production over several production shifts to guarantee an optimum long product shelf life.



CONTACT

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On everyone's lips

White Cheese – the "white gold" of European dairies

Modern technology of GRUNWALD filling line for producing various types of UF white cheese



GRUNWALD cup filling line for producing various types of white cheese to be filled in ready-made plastic cups
From left to right: filling area – coagulation area – lidding area

If you investigate how the market in the European dairy industry has developed over the years you will see that the product "white cheese" has been increasingly in demand and in the literal sense of the word has been on everyone's lips. Therefore, the interest in producing white cheese (feta or domiati) has also increased in those countries which have not produced this product yet and where it is hardly known. However, the market trend of the last few years shows that the new product white cheese is becoming increasingly popular and there is an increasing demand for it.

In view of this market trend we have been supplying fully-automatic cup filling lines for producing UF white cheese for many years to European and non-European dairies. Due to its topicality we report in detail about "UF

white cheese" in this HIGHLIGHT edition – the "white gold" of European dairies.

Origin and definition of "UF white cheese"

UF white cheese is a soft, white and briny cheese. The difference to Feta cheese and other white cheese products is that the salt is directly added to the milk.

The origin of white cheese is in the Middle East countries. It is mainly produced in Egypt and is one of the most well-known types of cheese there. However, in Sudan and other countries of Middle East white cheese is also popular.

The difference to other types of white cheese and feta cheese is that during production of the Egyptian white cheese the salt is directly added to the milk.

On the basis of ultrafiltration (UF) similar types of this white cheese are produced in other countries as well. They are then available on the supermarket shelves under names such as Queso Fresco, Burgos or Telemea.

Photo left:
white cheese filled in cups
and divided into four blocks

Usually UF white cheese is made of buffalo or cow's milk or a mixture of both. But it is also possible to produce it from sheep milk, goat milk or camel milk.

The traditional production methods

In general cast white cheese can be divided into three types of manufacturing methods:

1. Production of fermented standard white cheese

by using BAF; in this case the UF retentate prematures and is then salted, coagulated and filled.

This procedure is normally used for filling cheese mass in Tetra Brik.

2. Production of CAST white cheese

DVS cultures are mixed with the coagulation medium and at the same time the UF retentate is added during the filling process. This is followed by the coagulation time before finally the salt is added and the cup is closed.

This is a typical method in countries such as Turkey, Saudi Arabia and other neighbouring countries as well as in Europe.

3. Production of white cheese on the basis of UF retentate or re-combined concentrate by using GDL

(Glucono delta-lactone) in order to reduce the pH value of the cheese. When using this method GDL and salt are pre-mixed and filled while the coagulation medium is added. This is a typical production method in Egypt.

The modern production method

For many years GRUNWALD have been supplying cup filling lines to European and non-European countries. With the technology of this filling, coagulation and closing machine the filling of different types of UF white cheese such as

- FETA type
- Domiati
- Queso Fresco
- all types which are based on UF concentrate

in ready-made plastic cups is possible.

This cup filling line was developed and built by Grunwald. Grunwald have a cooperation with Messrs. Alpma in the field of processing technology and UF filtration.

Advantages of this modern technology

Compared to the traditional white cheese production the modern UF (ultra filtration) technology for the production of UF white cheese (FETA) offers a large number of advantages:

- lower investment costs
- lower running costs
- higher output as less milk per kg cheese is required (only approx. 5 – 6 litres of milk for producing 1 kg of cheese)
- direct addition of salt into the cheese product
- no fermentation time as the pH value is reduced by adding the GDL directly after the mixing procedure

- no whey on the product surface
- herbs or flavours can optionally be added to the cheese
- shelf lives of up to 6 months can be achieved due to the gas injection or alternatively MAP (Modified Atmosphere Packaging)
- reduced space requirements
- considerably reduced production processing time
- no incubation time as the cheese is packed and cooled directly after the fermentation
- compared to traditionally produced UF white cheese the storage time of three months is reduced to only a few days
- quick availability of the product on the market.

The technology used is suitable for all three methods of white cheese production.

Description of the GRUNWALD cup filling line

The GRUNWALD cup filling line for the production of UF white cheese consists of three sections:

1. Filling section

In the filling section the plastic cups are placed in the cup magazines, denested from the cup magazine onto the filling conveyor which transports the cups step by step to the following stations:

- cup sterilisation UV(C)
- spraying station for anti-stick
- filling station
- spraying station for anti-foam and
- transfer station at the infeed of the coagulation conveyor.

The filling section is completely CIP-cleanable.

View into the filling area of a GRUNWALD cup filling line with UV sterilisation of the cups, spraying nozzle for anti-stick and anti-foam; the coagulation area is on the right





2. Coagulation area

The filled cups are discharged from the infeed conveyor onto the coagulation conveyor. Depending on the type of cheese to be produced, i.e. the type of rennet used and temperature requested, the cups pass the coagulation tunnel within 20 – 30 minutes. The complete coagulation area is covered by a laminar airflow cabin with vertical air feeding and additional roof. In order to generate clean air HEPA filters of class H14 according to DIN EN 1822 are used which achieve a filtration efficiency of 99.995 %. Both the HEPA filters and the pre-filters can be exchanged without any problems.

At the end of the coagulation conveyor the open cups with the cheese which has coagulated in the meantime are discharged in rows to the infeed conveyor of the fully-automatic packing machine (e. g. a GRUNWALD-HITPAC AKH-019SE).



3. Lidding area

In the lidding area the transport of the filled cups is continued to further stations where their processing is continued in fully-automatic operation.

Description of the individual stations:

- **Infeed station**
places the cups in the rotary table
- **Cheese cutting station** (option)
The cheese will be divided into 4 or 6 blocks by a vertical moving cutting knife
- **Parchment paper station**
places pre-cut parchment paper on top of the coagulated cheese

Photos left, top to bottom:

- cheese cutting section, for dividing the cheese into four or six blocks
- dry salting unit including buffer tank
- buffer tank for the UF retentate, rennet mixing/buffer tank as well as the two mixing/buffer tanks for anti-foam/anti-stick



- **Dry salting unit**
doses fine salt on the parchment paper; the dry salting unit is adjustable to the filling volume and the salt concentration required
- **Seal lid dispenser**
places a UV sterilised pre-cut seal lid exactly on the cup. It is spot-sealed to avoid displacement during its transport to the heat sealing station
- **Heat sealing station**
seals the spot-sealed lid tightly on the cup rim
- **Cover lid dispenser** (option)
for applying a snap-on lid on top of the plastic seal lid
- **Lifting and discharging**
of the closed cups onto the outfeed conveyor

Additional equipment

The following optional equipment is available for the GRUNWALD cup filling line:

- cup buffer magazine
- GDL mixing tank in front of the buffer tank
- additional dosing of herbs or flavours
- machine extension for higher capacity
- extended coagulation tunnel for up to 30 min. holding time
- two or three layered filling
- cheese cutting
- gas flushing to reduce residual oxygen (alternatively MAP (Modified Atmosphere Packaging))
- sealing/cutting station for film from reel
- date coding on the foil lid
- snap-on lid denesting

Production and speed

Each GRUNWALD cup filling line can be adapted to the special requirements of the customers and offers them high flexibility in order to be in a position to react to the consumers' requirements at any time and produce in a market-orientated way. This machine is suitable for all three methods of white cheese production and designed for a simple and quick format changeover for different cup sizes.

The products are filled in ready-made plastic cups. The standard cup sizes are 100 grs, 250 grs, 500 grs and 1 kg.

The GRUNWALD cup filling line is available in two standard sizes:

1. for handling 1,000 kg or
2. for handling 2,000 kg of retentate resp. concentrate per hour

Due to this new procedure it is possible to run production for up to 20 hours per day before CIP has to be made.

Production speed:

1,000 – 4,800 cups/hour depending on the fill volume, product consistency, product characteristics, remaining headspace in the cup and packing material.

Conclusion

The new, modern UF (ultra filtration) technology for producing UF white cheese (FETA) offers enormous advantages compared to the traditional white cheese production.



Photo below:
Rotary-type closing and lidding machine
GRUNWALD-HITPAC AKH-019SE

INFO

Viewing of a GRUNWALD cup filling line

A very flexible GRUNWALD cup filling line for the production of UF white cheese is currently being assembled in our factory in Wangen and will be despatched to a dairy in Northern Europe in spring 2021.

This machine is equipped with very interesting optional equipment. One special feature is the filling station which can also be used for mixing herbs into the product.

The readers of our customer magazine GRUNWALD-HIGHLIGHT are offered the exclusive opportunity of seeing this GRUNWALD cup filling line already now.



Spraying station for anti-stick and anti-foam

CONTACT

If you need further information or would like to see the GRUNWALD cup filling line which is still being assembled, please do not hesitate to contact us and make an appointment with

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GRUNWALD NEWS

The GRUNWALD donation in December 2019

... and what has come out of it

It has already become a tradition that – at the end of the year – Grunwald donates the equivalent amount which would otherwise have been spent for the customary Christmas presents at Santa Clause for a social purpose.

The work of "awamu – together for Uganda e.V." in Wangen is particularly close to our heart. This aid association supports the population in Uganda through various projects.

The mutual story of success began in the year 2008 when our senior boss Edwin Müller handed over the first donation. He thus

made possible that the first of meanwhile 16 Grunwald wells in Uganda could be built.

Three deserving, long-standing Grunwald employees are having the wells named after them:

Gebhard Morent (since 1989 in the company), **Andreas Gotsch** and **Herbert Holzer** (both since 1990 in the company).

Margareta Riese, the chairperson and thriving force of "awamu" sent us photos of the wells which were built in June in order to document the success of our joint commitment.

She wrote us:

"The people are very glad. Supported by your assistance they now have clean water. Thank you so much for your great help."

Bottom row of the photos:

Previously the inhabitants had to supply themselves with water out of ponds of minor quality.

Top row photos:

Since June high-quality water has been flowing out of the wells in three further villages very day.

