

Product variation easily handled

Schwab-Guillod AG trusts on the flexibility of the ESPERA NOVA ES-R machine series for weighing and labelling of its fruit and vegetable products.

Since more than 80 years, Schwab-Guillod is one of the leading companies in the fruit and vegetable trade business in Switzerland. The company independently selects its agricultural partners locally and abroad according to high quality standards. Its success is in the quality and rapid availability of its products. Schwab-Guillod applies the highest quality standards, which are regularly discussed and checked with its agricultural partners. The product range includes leafy vegetables, lettuce varieties, asparagus, tomatoes and onions. As well as stone fruit, citrus and exotic fruits.

„From farm to fork“ also applies to the fruit and vegetable industry

In order to get the fresh fruits and vegetables to the end consumer as quickly as possible, production and the associated production processes must be well structured and closely timed, to enable a fast product throughput. Especially in the end of line area, the flexibility of ESPERA weighing and labelling systems offers an optimal workflow.

Requirements for weighing and labelling lines for naturally grown products – The ESPERA 3D camera is the perfect solution

For fruit and vegetable products, no two products are alike. Grown products such as fruit and vegetables always differ in their product geometry, shape and size. This makes precise product labelling with one (or more) labels all the more demanding. On the one hand, to avoid poorly labelled products, because this would

generate unnecessary “scrap” for the production plant. On the other hand, in the case of irregular product geometries, attention must also be paid to the readability of the label for the end consumer. After all, what could be worse than wrinkled labels on a product package that leads to a non-readability of the label? With its fully automatic labelling systems, ESPERA focuses on maximum precision and guarantees a labelling accuracy of up to +/- 1mm. For grown products, the integrated 3D camera offers the possibility of a completely individual product labelling. A camera scans the geometry of a product in real time and determines the perfect labelling position fully automatic. This ensures that the label fits perfectly on the package and that the end consumer can read the label easily. Especially for companies that have a large product variation or naturally grown products, the 3D camera is an optimal tool to improve the quality of the labelling process and to prevent poorly labelled products from reaching the retail market in the first place.

Large label variation

As an additional challenge to the different product shapes, Schwab-Guillod AG also has the requirement to print products with a wide variety of label information. For each individual product, there is a wide range of barcode formats and lot numbers for traceability, which have to be managed in a central production database as well as printed on the corresponding label. In addition, there are a large number of different label designs and label geometries that have to be assigned to the products depending on the customer.

Checkweighing and weight-price labelling combined in one machine

At Schwab-Guillod, part of the products are marked with a fixed weight and receive a fixed price, regardless of the real weight. The other part of the products is provided with weight-dependent price information. In that case, each product has its own individual price, depending on its weight. The modularity of the ESPERA labelling systems allows both functions in only one machine. Depending on the product type, it is possible to choose between the checkweigher production mode or the classic weight-price labelling mode. In addition, an extra-long scale belt enables uncomplicated weighing of long products such as leeks or celery sticks.

Round products are optimally guided via the central belt groove. This allows a wide variety of products to be weighed and labelled fully automatically with just one machine type.

Digitization and networking production lines

The interface solution ESPERA ESPROM NG enables a connection of the labelling lines to the production-internal ERP system MS Dynamics. All relevant product data, such as product texts, nutrition value information, best before dates and daily updated price information are maintained in the inhouse ERP system. The ESPROM NG interface is used to assign the product data and order data to the

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individual labelling lines in production, and the customer orders are started via tablet terminal in the final step. This enables an optimum production workflow with minimum throughput times and always guarantees real-time provision of all relevant labelling data. ■



The most popular key figure in production – OEE (Overall Equipment Efficiency)

The performance of a machine depends on a wide variety of factors. Which influencing factors increase the performance of a machine? What options are there for increasing the availability of a machine and a production line?

In general, it is the goal of every production company to keep the overall machine availability (OEE) as high as possible in order to run a production line as efficiently as possible. However, there are always influencing factors that make 100 % machine availability almost impossible. Currently, in machine industry, one speaks of high-performance when the total machine availability is 60 %.

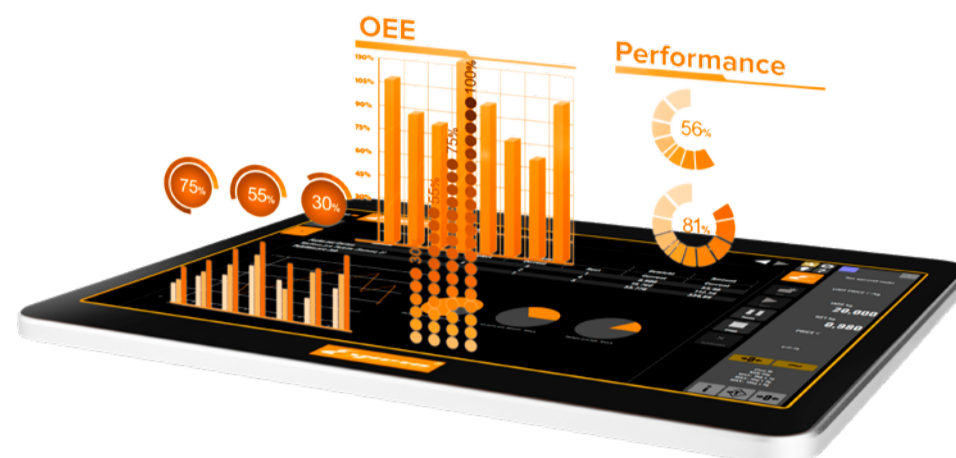
What possibilities are available, especially in the end-of-line area of a production plant, to make the availability of automatic weighing and labelling machines as optimal as possible?

The 3 most important features at a glance

Overall machine availability (OEE) is composed of 3 main characteristics:

- Quality factors of a machine
- Availability of a machine
- Performance of a machine

For example, **quality characteristics** of a weighing and labelling system are the number of poorly labelled products or poorly readable labels in relation to the total products produced. If the labelling



position is not correct or the print quality on a label is poor, the products must be removed from the process before they reach the retail shops. In most cases, the products are discarded or time-consuming repackaged and relabelled.

ESPERA has the optimal solution for this to increase quality. The unique 3D camera on the labelling system determines the optimum labelling position during the labelling process. The unique SmartHead thermal strip constantly monitors the print quality on the label and provides early feedback to the production team in the event of a drop in print quality. These are two great features, to improve the quality factor with the OEE of a machine.

The **availability of a machine** aims to keep downtimes as low as possible and to make the runtime of a system as long as possible within a production period. Keeping the downtime of a system as

low as possible is achieved in the area of weighing and labelling products, for example, by using a quick-change system for label rolls. ESPERA's patented quick-change label roll system enables rolls to be changed in less than 20 seconds, whereas comparable manufacturers require several minutes of downtime to change the label roll. Calculated on a production day, such features significantly increase machine availability.

Future technologies for increasing availability are predictive machine functions (predictive maintenance), which detect anomalies or wear on machine components at an early stage. As a result, maintenance measures can be planned and unplanned downtimes are no longer necessary. ESPERA is leading the way with the first predictive machine functions in the industry and has already implemented the first functions in the latest machine generation NOVA.

The **performance of a machine** or a line is measured by performance parameters. For example, the speed at which a machine or line is built to run. High performance is important. However, care must be taken to ensure that the quality and availability of the line does not decrease as machine performance. ESPERA enables weighing and labelling performance of up to 140 packs per minute. At the same time, the quality and availability of the system remain stable. Even at a speed of up to 140 packs per minute, a labelling accuracy of +/- 1mm can be achieved.

The performance factors in the end-of-line area weighing & labelling

Weighing and labelling processes have a major influence on the overall performance of a production line. This is because it is important in this area that all relevant product information comes together and must be printed on a label. For example, allergen and nutritional information, product prices and weight information, but also best-before dates and country of origin information. This makes it all the more important to pay attention in this area to which automated or digital functions can increase the availability of a system and at the same time keep the quality, i. e. applying the right product information to the right place on a product package by means of a label, at the highest level. ■

Trust is good, control is better!

Consumer protection is nowadays the keyword in combination with the topic of quality control within the production environment. Especially in the food production industry, quality control is an ongoing issue. Manufacturers or producers guarantee for their products. This means they also guarantee for the readability and completeness of label information as well as the packaging.

In the worst case, cost intensive recall scenarios have to be taken over by the manufacturer, due to recalls from the retail industry. Especially within fully automated production lines, quality control measures at the end of line are very limited. A lot of plants rely on manual package and label control by a worker. Due to the increasing throughput of the machines as well as the trend of small batches and high product variations, failures in manual control can

occur and wrong labelled or defect packages are shipped to the retail industry.

ESPERA opens with its VISION Inspection System a new horizon in quality control and guarantees the full control of label printing quality, label information, label content and packaging. For example, the readability of a barcode is mandatory. Otherwise, the scanning system at the cashier in supermarkets can't scan the product. Furthermore, within this unique feature not only the readability of a barcode is being checked. Also, the barcode content can be read and compared if it matches with the product itself or if there is a mix-up in between the barcode information and the product. In case if there is a deviation, the product is directly getting sorted out and the production team gets a messenger information. With a unique line camera, available from the top and bottom, products

can be checked directly in-line of the labelling process. For fully automatic production lines this technology is the perfect solution to 100 % control packages and label information. ■





Green labels – Compostable labels and packaging materials for a green footprint

Everyone knows the bananas in the supermarket shelves with the typical round label of the world's best-known manufacturer. A naturally grown product that does not require any additional packaging. But who, when eating a banana, has ever taken care to remove the label from the skin of banana before disposing it in the organic waste? Because apart from the compostability of the banana skin, the label used for it is not compostable at all.

Green thinking – rethinking required

This is exactly where the basic question of the sustainability of products and packaging materials begins. If this idea is applied to the entire food industry, the requirements become even more complicated than for the classic banana.

Meat products, for example, have to be packaged for protection against external contamination, but also to ensure the best possible consumer-oriented shelf life. Current packaging technologies such as shrink, skin or modified atmosphere packaging already allow for an extended shelf life of the product. However, in the course of packaging optimization in recent decades, less attention has been paid to the sustainability of materials.

The current worldwide eco-balance teaches us that a urgent rethink is necessary. So in order to reduce plastic waste in fresh packaged food, manufacturers of packaging materials are working on new solutions for more sustainability. The innovative, fully compostable packaging film "Nature Fresh" from the Italian company Fabbri Group offers a great alternative to conventional packaging films. Equal in handling and appearance, it is the first, compostable stretch film that can be processed with automatic packaging machines. In combination with compostable trays, this film offers a fully compostable packaging solution for fresh products.

Any packaging is only as compostable as its label

The labelling of fresh products is essential for their packaging. This is because the presentation of the clear product description as well as the definition of product characteristics such as nutritional values, allergens, best-before dates or information on origins are legally obligatory and therefore indispensable. If one relies on sustainable packaging and provides it with a classic, non-compostable label, the entire sustainability approach of the packaging is no longer given. This is because most consumers do not separate the label from the packaging film before disposal. And even in industrial composting processes, the labels are not separated from the packaging.

In the joint project with the Fabbri Group, ESPERA has extensively analysed *Nature Fresh* stretch film as a carrier for compostable labels and tested it in combination with automatic packaging and labelling systems. The labels are a composition of a compostable NatureFlex™ backing paper and a compostable adhesive BioTak®.



Nature Fresh film in production



Important aspects of the analysis were the adhesion behaviour of the labels to the compostable *Nature Fresh* film and the processability of these labels with automatic labelling machines. In addition, the print behaviour on the labels was tested at different printing speeds and temperature influences. With a product shelf life of up to 14 days in different temperature environments, the label must remain perfectly legible on the day of consumption, even at freezing temperatures.

Our sustainable solution of compostable packaging film and bio-absorbable label

The results of the analysis show that the *Nature Fresh* compostable stretch film and bio-resorbable labels offer a perfect alternative to conventional stretch films and labels. Both the processing with fully automatic packaging and labelling machines and the printability of the labels are optimal in all temperature ranges – even at deep-freeze temperatures. Even different printing speeds deliver the same print quality as conventional, non-compostable labels. In addition, the *Nature Fresh*

stretch film is compostable according to EN 13432 and the labels are certified for household compostability.

For the first time, *Nature Fresh* packaging film and ESPERA's compostable labels enable a completely sustainable combination of packaging film and label. With these labels and inks, ESPERA focuses on maximum sustainability and thus sets its own green footprint! ■



ESPERA compostable labels



Transparent protection with the Nature Fresh film



Nutrition information at a glance with the Nutri-Score – New guideline in the declaration of nutritional values

Recognise the quality of food at a glance and make shopping healthier? The Nutri-Score makes it possible. The new nutrition value labelling shows the quality of food products transparent and visible on the front of the package. Using a simple traffic light system, this score offers uncomplicated assistance in the daily selection of healthy food. Products of the same food category can be compared with each other very quickly.

Since 2014, nutrition labelling has been mandatory for packed food products in Germany and the entire EU. While regular nutrition tables list all important ingredients and nutritional values, they do not offer any real orientation when evaluating and comparing products. For a better understanding of this nutrition declaration, a descriptive supplement was therefore required. The Nutri-Score label is one option that gains continuously acceptance within Europe and overseas. Due to its simplicity for the consumer.

Although the use of the Nutri-Score is voluntary and not obligatory for food processors, the pressure from the supermarkets is growing, as this label enjoys a great positive response and a widespread implementation is desired. The application of this label to the front of the packaging represents an additional challenge and effort for food processors that must be accepted somehow. ESPERA has already developed a solution for this new requirement and can support processors with the implementation of the Nutri-Score in compliance with the directive.

How the Nutri-Score works

The Nutri-Score uses a five-point traffic light system from A to E to indicate the nutritional quality of a food product in the respective product category. This makes comparison easy. The energy content and the positive and negative nutrient

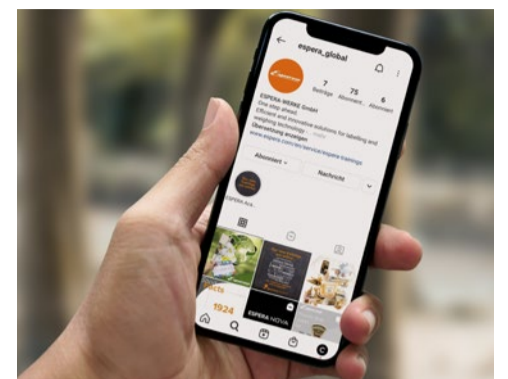


values are compared with each other and summarized in an A to E rating. Positive nutrition elements are, for example, nuts or fibres, while negative nutrition elements are sugar, salt or saturated fat acids. The colour-coded traffic light system simplifies orientation and direct comparison for the consumer.

Food producers can register for the use of the Nutri-Score voluntarily and free of charge and thereby commit themselves to label all products of their own portfolio with this label. The calculation of the Nutri-Score is clearly defined and calculates the sum of the positive and negative ingredients to a unique Nutri-Score value. The score is then printed on the front of the product in the form of the Nutri-Score label in colour or black / white, horizontally or vertically.

ESPERA has decided to support the introduction of the Nutri-Score and has already added a solution that helps to label the Nutri-Score graphic correctly. A software supplement is available for all ESPERA weigh-price labelling systems. This makes it easy to display nutrition information according to the Nutri-Score design. The major challenge in printing of the Nutri-Score logo is the guidelines for main-

taining the size of the logo in relation to the package format and package size. There are clear rules within the Nutri-Score guideline that depending on the package format and package size, the logo must be printed in an appropriate size. The new ESPERA software automatically calculates the size of the Nutri-Score logo to be printed, measured against the package formats. This ensures that the Nutri-Score logo is always implemented in compliance to the guidelines. In addition, the protected area around the logo is automatically calculate and the program provides warnings if these rules are not fulfilled. Thus, the integration of the Nutri-Score for food processors can be easily designed and successfully implemented with our solution. ■



ESPERA Instagram



Just scan the QR code and follow us on Instagram.



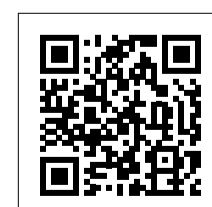
ESPERA blog

Think outside the box!

With our new ESPERA blog we inform you about topics such as

- current guidelines in weighing technology,
- legal requirements for the declaration and labelling of products,
- technologies in the field of labelling and weighing,
- digitization technologies such as OPC UA.

With the ESPERA blog we inform you completely independent about topics that move our industry. We are very pleased to offer you a platform that provides factual information, tips & tricks and guidelines for the industry, far from advertising and newsletters. ■



Simply scan the QR code and get directly independent information!



Digital Events

1. Date	Live machine demo	May, 18th – 20th, 2021
2. Date	Digital Week	September, 13th – 17th, 2021