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EDITORIAL

Dear Readers,

48 percent of participants of an experimental online study in the US said they looked at the Nutrition Facts panel all or most of the time when choosing beverages for their children. Overall, participants frequently underestimated the percent of juice in 100 % fruit juice. Even though the percent juice was stated on the package front for the 100 % fruit juice product, only 51 percent of parents who were shown only the package front correctly identified the juice percentage. Please find out more on page 209.

Another smaller orange crop in Brazil is expected. End of May Fundecitrus, in cooperation with Markestrat, FEA-RP/USP and FCAV/Unesp. released the 2021-2022 orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt. It is the seventh year of this project that made transparency of fruit production available to market actors all over the world. Please find the detailed report on page 186 ff.

Founded in 1996 in Hangzhou, Nongfu Spring is one of the key players in the soft drinks market in China. Aseptically packaged in PET, the beverage company is the first introducing sparkling tea, juice and coffee to Chinese consumers and successfully serving the RTD market. To handle both still and carbonated beverages, as well as low- and high-acid products on the same line, Nongfu Spring was looking for a highly flexible solution. Please read more on page 194 ff.

The Austrian beverage producer Ferdl-Most offers 28 different kinds of fruit and vegetable juices, seven pure apple and pear musts as well as several syrups, ciders and lemonades in six different bottle sizes and forms from 0,2 to 1 litre. Most of them also show individual labels. Increasing production volumes demands efficient labelling and therefore, a new labelling machine has been installed. Enjoy reading the case study on page 198 f.

Enjoy reading,

Yours



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MARKETS

Another smaller orange crop in Brazil: 2021-2022 forecast 186



In May 27th the 2021-2022 orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt, was released by Fundecitrus, in cooperation with Markestrat, FEA-RP/USP and FCAV/Unesp. It is the seventh year of this project that made transparency of fruit production available to participants all over the world. During the presentation of data, around 500 participants followed live via YouTube, from around 30 countries. The amount expected is of 294.17 million boxes (40.8 kg or 90 lb). Total orange production includes: 51.37 million boxes of the ...

ASEPTIC FILLING

Nongfu Spring in China trusts Sidel's dry preform sterilisation to enhance its aseptic production flexibility 194

Nongfu Spring's latest additions to its beverage portfolio required a hyper-flexible and safe aseptic solution, able to process high- and low-acid, still and carbonated products in PET, while enabling impactful bottle designs. With four decades of supporting sensitive beverage producers worldwide, Sidel recently engineered and installed a complete aseptic packaging line, integrating the Versatile Aseptic Combi Predis™. The line helped the leading Chinese beverage player launch a breakthrough in the domestic market: sparkling Ready-to-Drink (RTD) products, aseptically bottled in PET ...

IMPRINT

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LABELLING

Over two decades of good cooperation: Ferdl-Most still relies on GERNEP 198

The “Mostviertel” region in Western Lower Austria is characterized by its stunning nature and is known for its fertile ground for all kinds of fruits. Hence, it is not surprising that several farmers, winemakers, and fruit processing companies have settled there. The beverage producer Ferdl-Most Litzellachner OG is located in the middle of the Mostviertel region. The name of the company is, as the region itself, characterized by a sense of tradition. Since the 16th century, the square-shaped farmhouse is owned by the Litzellachners family and since seven generations all male descendants are named Ferdinand. This explains the company name Ferdl as it is the Austrian nickname for Ferdinand ...



INDUSTRY 4.0

PURO: A scale of the digital age 200

In times of Industry 4.0, customers expect more than just reliable weighing technology: the entire package must be right – not just the product alone, but the complete product cycle is important: from the ordering process to the service case, Minebea Intec and its partners are there to support the customer. With Puro, the customer also receives the strong quality of a leading supplier at a fair price. With Puro® ...

HORTICULTURE

Cherry trees, Arrigoni's solutions against cracking and pests 202



Spring rains have a decisive influence on the quality of fruits, especially when it comes to delicate cherry cultivars. Rainwater can in fact interrupt the flowering process, reduce quality and, in severe cases, start fruit cracking. The rupture of the drupa, in fact, makes the fruit no longer marketable. Another minor damage, caused by rainfall, is that of excessive humidity, which can encourage the development of dangerous fungal diseases, thus requiring the use of plant protection products. Arrigoni, with solutions such as ...

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Another smaller orange crop in Brazil: 2021-2022 forecast

| Brazil | Citrus Belt | Crop Forecast | Orange Crop | Orange Trees |

1. Introduction: 2021/22 crop estimate

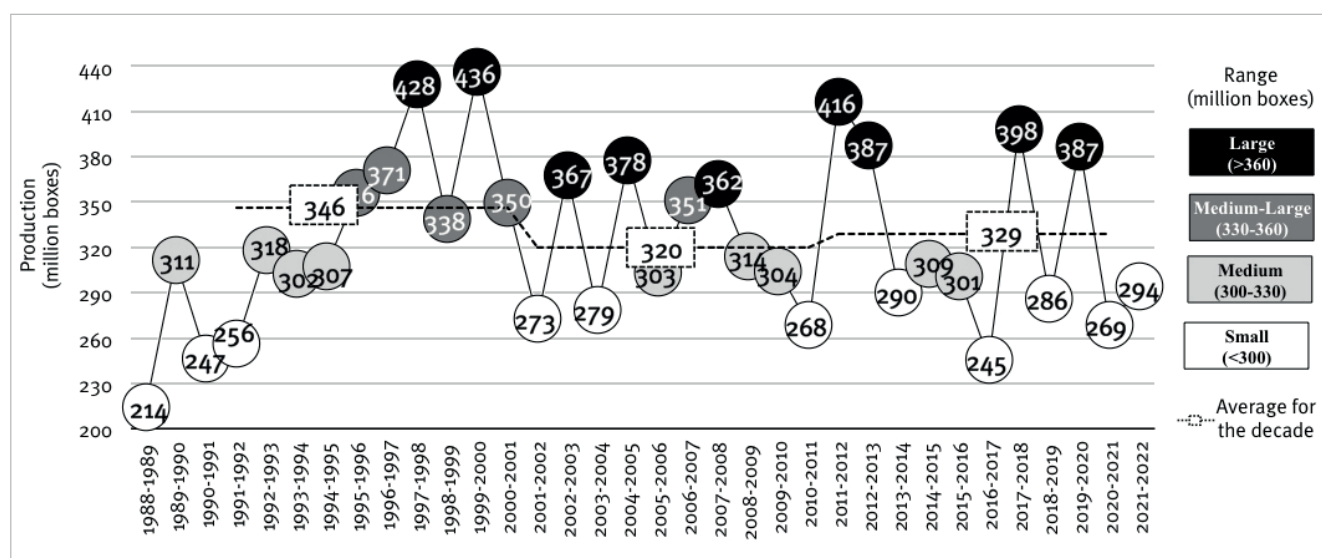
In May 27th the 2021-2022 orange crop forecast for the São Paulo and West-Southwest Minas Gerais citrus belt, was released by Fundecitrus, in cooperation with Markestrat, FEA-RP/USP and FCAV/Unesp. It is the seventh year of this project that made transparency of fruit production available to participants all over the world. During the presentation of data, around 500 participants followed live via YouTube, from around 30 countries.

The amount expected is of 294.17 million boxes (40.8 kg or 90 lb). Total orange production includes: 51.37 million boxes of the Hamlin, Westin and Rubi varieties; 16.87 million boxes of the Valencia Americana, Seleta and Pineapple varieties; 84.66 million boxes of the Pera Rio variety; 107.07 million boxes of the Valencia and Valencia Folha Murcha varieties; and 34.20 million boxes of the Natal variety.

As compared to the final forecast of 268.63 million boxes in the previous crop, the current projection represents an

increase of 9.51 % although it is still below the average of 35 million boxes for the last ten crop seasons, which corresponds to a drop of 10.53 %. Graph 1 shows production volumes since 1988-1989.

Although this is an on-year crop, the increase in the number of fruits per tree as compared to that in the previous crop season is lower than what was observed in the years the crop was also favored by high production cycles. The last on-year crop seasons were 2017-2018 and 2019-2020, years when the increase in the average number of fruits per tree in relation to previous crop seasons was 75 % and 39 %, respectively. In the current crop season, that increase is of only 12.50 %, which means orange trees had the physiological conditions to bear a heavier fruit load than that of the previous cycle, owing to the reserves saved from the low production volume. Nevertheless, the adverse climate significantly affected that production volume, which shows that citriculture in the state of São Paulo and West-Southwest Minas Gerais is highly dependent on climatic factors, since approximately 70 % of the planted area is rain-fed.



Graph 1: Orange production from 1988-1989 to 2020-2021 and 2021-2022 crop forecast. Sources: CitrusBR (1988-1989 to 2014-2015) and Fundecitrus (2015-2016 to 2021-2022) © all Fundecitrus

The citrus belt also faced opposite climate extremes in the beginning of this crop season: rains in the regions of Itapetininga, Avaré and Duartina in June and August 2020, which triggered the first bloom, while a long drought hit the remaining regions of the citrus belt and only ended in mid-October, when rains enabled good water conditions for plants in that part of the citrus belt to have a late first bloom at a period when a second bloom usually takes place. Before rains fell, that is, from September 30 to October 7, 2020, a strong heat wave hit the whole citrus belt, with average maximum temperatures on the order of 42°C, affecting the setting of first bloom fruits in the regions of Itapetininga, Avaré and Duartina, and in irrigated groves. Those fruits were still small, having a diameter of 0.5 to 3.0 centimeters and intense physiological drop caused by high temperatures.

Due to the erratic behavior of the climate and poorly marked seasons, with prolonged droughts and high temperatures at a time critical to the two main blooms, there was a third bloom in many groves in December 2020 and January 2021, and a fourth bloom as of February 2021. In general, the first bloom accounts for 29.6 % of the crop; the second bloom for 46.3 %; the third bloom for 20.0 %; and the fourth bloom for 4.1 %. This year, the third and fourth blooms stand out as accounting for greater percentages of the crop, due to the unfavorable climate conditions in the early post-flowering stage.

Rains became scarce once again in April and May 2021, which was felt by orange trees, and evidenced by the small

size of stripped fruits in this crop that weighed an average 81 grams each, as compared to a weight of approximately 100 grams at that time in regular years. However, more adversities to production should still arise from climate conditions.

According to Somar Meteorologia/Climatempo, the rainfall volume below the historical average should not change in the coming months. Rains are forecast to be scarce until October 2021, repeating the scenario observed last year. If this forecast is confirmed, the maturation period, which includes fruit development and filling, will also be affected. However, the effects of these unfavorable climate conditions are already included in this crop forecast, since the projected weight of the oranges at harvest is small (157.5 grams), below their average weight in the last six crops (167 grams), and the projected fruit drop rate (20.50 %) is the second highest since 2015, the year when Fundecitrus first started carrying out the surveys. These parameters are similar to those observed in the previous season, but quite different from the average of the last crops.

The average yield in this crop is estimated at 850 boxes per hectare and 1.77 boxes per tree, as compared to 737 boxes per hectare and 1.55 boxes per tree harvested in the 2020-2021 crop season. The expected average yield per hectare has increased by 15.33 % in relation to the previous crop, which is a higher rate as compared to the growth of 9.51 % that is expected for production, confirming the trend of maintaining better managed groves, with higher yields, and eradicating groves with the worst yields per

Table 1: Yield per hectare and variety for the 2015-2016 crop to the 2021-2022 crop

Group of varieties	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022 ^e
	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)	(boxes/ hectare)
Hamlin, Westin and Rubi	744	1,235	833	1,319	797	892
Other earlies	744	1,008	810	1,121	827	914
Subtotal for earlies	744	1,184	828	1,273	804	897
Pera Rio	596	945	633	943	671	739
Valencia and V. Folha Murcha	597	1,016	826	998	739	929
Natal	650	1,063	765	1,082	803	849
Total	634*	1,033*	756*	1,045*	737*	850*

^e Estimate.

* Weighted average per total stratum fruit.

Table 2: Variation in yield per hectare for varieties as compared to previous season's

Group of varieties	2017-2018 in comparison to 2016-2017		2018-2019 in comparison to 2017-2018		2019-2020 in comparison to 2018-2019		2020-2021 in comparison to 2019-2020		2021-2022 ^e in comparison to 2020-2021	
	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%	(boxes/ hectare)	%
Hamlin, Westin and Rubi	491	66.0	-402	-32.5	486	58.4	-522	-39.6	95	11.9
Other earlies	264	35.5	-198	-19.6	311	38.4	-294	-26.2	87	10.5
Subtotal for earlies	441	59.2	-357	-30.1	445	53.8	-469	-36.9	93	11.6
Pera Rio	349	58.5	-312	-33.0	310	48.9	-272	-28.8	68	10.2
Valencia and V. Folha Murcha	420	70.3	-190	-18.7	172	20.9	-259	-26.0	190	25.7
Natal	413	63.5	-298	-28.0	316	41.3	-279	-25.8	46	5.7
Total	399*	62.9*	-278*	-26.9*	290*	38.3*	-308*	-29.5*	113*	15.3*

^e Estimate.

* Weighted average per total stratum fruit.

hectare. The groves of Valencia and Valencia Folha Murcha stand out in terms of increased yield per variety, with an expected increase of 25.71 % as compared to the previous crop season, the highest among all varieties, which relates to the larger number and size of fruits of those varieties and the high concentration of trees in the category of older and more productive age, above 10 years, which account for about 67 % of bearing trees. Tables 1 and 2 present yields per variety and variations in relation to the previous crop season.

2. Bearing trees

Bearing trees total 166.56 million and occupy an area of 346,123 hectares in this crop. These values represent, respectively, a reduction of 4.41 % and 5.03 % as compared to the previous inventory of March 2020.

Field surveys carried out this year show that from April 2020 to March 2021 there was a significant increase in the eradication of groves, from 3.70 % in 2020 to 7.26 %, in 2021. This increase is related to the two consecutive years of intense drought.

The groves that suffered most from the drought were those grown in more critical regions without irrigation and with a high planting density of orange trees grafted onto Swingle citrumelo rootstock, which is more susceptible to water deficit. In the past crop, when the climate was extremely adverse, the yield of those groves dropped drastically and in extreme cases there was a high mortality

of plants, which accelerated the process of eradicating the most affected adult trees and plots.

Under those conditions, the mortality of orange trees increased in adult groves, caused by diseases such as citrus blight and citrus sudden death (CSD), mainly for trees grafted onto the Rangpur lime rootstock, which is susceptible to both diseases. Citrus sudden death reappeared last year in the regions of Bebedouro, São José do Rio Preto and the southwest of Triângulo Mineiro, where climatic conditions were extremely unfavorable.

The greening effects associated with water deficit were more marked in the regions of Brotas, Porto Ferreira, Limeira, Matão and Duarte, which have the highest incidence of the disease. In those locations there was a more intense drop of oranges, affecting the yield and contributing to increased eradication.

Another important and decisive fact for the greater eradication of the groves is the cycle of high prices for other agricultural commodities, such as corn, soybeans and sugar, which appeared as another crop option.

In this new 2021 inventory, groves accounted for as eradicated total 28,738 hectares. Since the last inventory, 2,988 hectares were abandoned. Both eradicated and abandoned groves put together comprise an accumulated loss of 31,726 hectares since the 2020 inventory. Using this area and the estimated average density of eradicated groves of 471 plants per hectare as an assumption to

estimate the number of eradicated and abandoned trees, a total of 15 million plants are estimated to have been excluded from the productive area for these two reasons. Moreover, there are other variables influencing the total bearing trees in this crop, such as the 2018 planting, the number of resets in plots that start bearing fruit from one year to another and tree mortality.

Due to restrictions imposed by the Covid-19 pandemic, the new mapping previously scheduled to be carried out in August 2020 was postponed to August 2021. Therefore, the information related to groves planted in 2018 that started bearing fruit in this crop and were included in this forecast was estimated from data provided by the CDA-SP (São Paulo State animal and plant health protection agency) of the São Paulo State department of agriculture and supply, on the number of citrus nursery plants marketed under the permit to transit plants (PTV) in the State of São Paulo, and from surveys carried out by Fundecitrus. This data may change until the end of the crop season if there is a significant variation in the estimated number of trees that were planted in 2018 and in counts from field surveys in this new scan of the citrus planted areas.

3. Fruits per tree

The average number of fruits per tree in May 2021, disregarding fruit drop throughout the crop season, is calculated at 639.

The use of irrigation helped to mitigate the damage caused by the water deficit in those regions. Irrigation is present in about 30.14 % of the citrus belt area, of which 88 % is concentrated in those regions where the drought prevailed. The high share of irrigated areas in those regions in relation to the total area of the citrus planted area results from

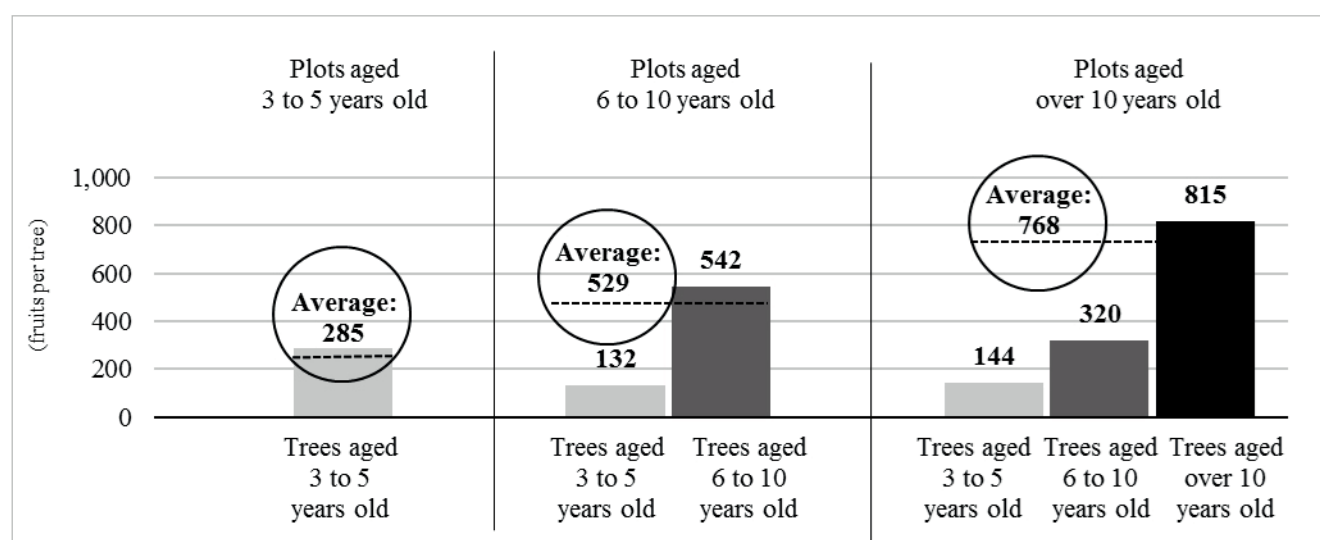
the period of more intense drought and higher temperatures from the south to the north of the citrus belt, making irrigation more important the farther north of the citrus belt.

In the vast majority of irrigated groves, irrigation started in June to promote the first orange bloom. However, on many farms, due to scarce rainfall, water reservoirs were below capacity, which made the use of irrigation unfeasible in all plots with systems installed. In many locations, the appropriate water supply had to be restricted, affecting flowering, fruit setting and development.

In September 2020, with the climate event La Niña forming, a strong heat wave hit the whole citrus belt, raising temperatures to the range of 36°C to 42°C in virtually all cities in the citrus belt during the eight days between September 30 and October 7, 2020. Under those high temperatures, plants aborted a large part of first bloom fruitlets of an approximate size of up to 3 cm in diameter, which had been produced in the regions of Itapetininga, Avaré and Duartina, and also in irrigated groves.

As of October 10, 2020, rains resumed throughout the citrus belt, creating favorable conditions for flowering that due to its time of occurrence is called the second bloom. That was the first flowering in the rain-fed groves of the South, Central (excluding Duartina), North and Northwest sectors of the citrus belt. These plants, which did not use reserves with the first bloom and had undergone a long period of vegetative rest, produced an abundant bloom that resulted in good setting.

Due to the uncertain climate, the third and fourth blooms happened in several groves. For the forecast, all fruits from the first, second and third blooms were considered



Graph 2: Age-stratified number of fruits per tree in the plot. Ages and planting years: 3–5 years (2016 to 2018), 6–10 years (2011 to 2015) and over 10 years (2010 and previous years)

as a whole. A fruit set rate of 25 % was applied to fruits from the fourth bloom, since it was a late bloom and because the physiological drop of small and weak fruits had not taken place before stripping ended this year. In the separation of fruits per bloom, off-season fruits were also identified as a result from late and sporadic flowers from the previous crop season, not accounted for in the current crop forecast.

Three to five-year-old plots present yield of 285 fruits per tree this crop season. For six to 10-year-old plots, an average of 529 fruits per tree is estimated, with 542 fruits per tree for original plantings and 132 fruits per tree for three to five-year-old resets. Plots over 10 years old have an expected average of 768 fruits per tree and a yield of 815 fruits per tree for original plantings, 320 fruits per tree for six to 10-year-old resets and 144 fruits per tree for three to five-year-old resets. Yield rates are presented in Graph 2.

In May 2021, when the trees were stripped, an average of 780 fruits per tree for the group of early Hamlin, Westin and Rubi varieties; 696 fruits per tree for the late Valencia and Valencia Folha Murcha varieties; 638 for the late Natal variety; 614 fruits per tree for the other early varieties; and 531 for the Pera Rio mid-season variety.

The method used consists of tree stripping, that is, the advanced harvest of all fruits in the tree, regardless of the bloom they are from. In this crop season, trees were stripped from March 26 to May 17, 2021. Fruits harvested were taken to a tree stripping laboratory in Araraquara,

where each sample was separated into the different blooms it was from. Fruits were quantified by automatic counting equipment and then weighed.

4. Drop rate – fruit drop index, from tree stripping to final plot harvest

The projected average drop rate is 20.50 %, distributed as follows: 12.00 % for the early Hamlin, Westin and Rubi varieties, 12.00 % for other early varieties; 22.00 % for the mid-season Pera Rio variety; 24.00 % for the late Valencia and Valencia Folha Murcha varieties; and 23.20 % for the late Natal variety. This rate is applied to the number of fruits in the tree in May 2021, when trees were stripped. The result of this calculation is the estimate of the number of fruits that will be available in the tree at harvest, since part of the oranges in the tree in the beginning of the crop season will fall due to physiological drop, damage caused by machines, pests and diseases, and adverse climatic conditions.

If this rate is confirmed, it will be the second highest in the historical series, just below the rate observed in the past crop, when the climate was extremely atypical. The main reasons for this projection are the climate forecast, which indicates accumulated rainfall below the average until October 2021, and the intensification of phytosanitary problems, such as the increased incidence of orange trees with greening symptoms in the citrus belt, which went from 19.02 % in 2019 to 20.87 % in 2020. Another reason that may continue to cause fruit drop in this crop season is



Table 3: Fruit drop rates by causes from the 2015-2016 crop to the 2020-2021 crop

Causes	Drop rate					
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
	(percentual)	(percentual)	(percentual)	(percentual)	(percentual)	(percentual)
Physiological and mechanical	N/A	5.99	7.45	5.16	5.15	6.63
Greening	N/A	1.37	4.06	2.70	4.39	3.71
Fruit borer and fruit fly	N/A	2.34	2.70	5.70	4.29	4.76
Black spot	N/A	3.75	2.16	2.02	2.12	2.98
Leprosis	N/A	0.25	0.62	0.82	1.30	1.70
Canker	N/A	0.03	0.31	0.30	0.38	0.37
Fruit peel cracking	N/A	N/A	N/A	N/A	N/A	1.45
Total	17.49	13.73	17.31	16.70	17.63	21.60

N/A – Non-available data, as survey of causes for fruit drop started in the 2016-2017 crop or due to irrelevant reasons.

the fruit peel cracking, observed in the past harvest due to severe drought, which led to reduced or halted orange growth, which was eventually resumed with the return of the rains, however, the internal structure of the peel had already lost its plasticity and the fruits suffered peel cracking, resulting in premature drop, as shown in Table 3.

Monthly and continuous monitoring by Fundecitrus as of June 2021 in 1,200 orange plots visited up to their complete harvest serves as basis to correct the drop rate projected at the time of this publication and consequently to correct the production estimate as well.

5. Fruits per box

The final fruit size projection is 259 fruits per 40.8 kg box, namely 305 fruits per box for the group of early varieties comprising Hamlin, Westin and Rubi; 259 fruits per box for the group of other early varieties; 260 fruits per box for the mid-season Pera Rio variety; 240 fruits per box for the late Valencia and Valencia Folha Murcha varieties; and 243 fruits per box for the late Natal variety.

The average size of 259 fruits per box is equivalent to oranges weighing approximately 157.5 grams at harvest. The final fruit size was estimated by a regression model

that considered the final fruit size (fruits per box at harvest) as the dependent variable and the number of fruits per tree counted at stripping, the initial fruit size (fruits per box at stripping), the sum of the production percentages of the first and second blooms in relation to the total production and the rainfall accumulated from May to July as independent variables. Data from the last eleven crops, 2010-2011 to 2020-2021, was used in the regression. The result obtained shows an adjusted R² of 0.93. This means that the four independent variables together explain 93 % of the variation in the final fruit size (fruits per box at harvest), which shows how important these variables are for the final fruit size. The comparison between the final

fruit size estimated by this model and the final fruit size observed in the last eleven crops presents an average absolute error of 2.67 %.

Data relative to final fruit size (fruits per box at harvest), number of fruits per tree counted at stripping, initial fruit size (fruits per box at stripping), the sum of the production percentages from the first and second blooms in relation to the total production for the series from 2009-2010 to 2014-2015 was provided by orange juice companies associated to Fundecitrus – Citrusuco, Cutrale and Louis Dreyfus, which separately have estimated the production for the citrus region since 1988, with the use of objective methodologies. Data was supplied individually and under a formal confidentiality agreement to an independent consulting firm for the determination of the average. Individual data supplied by each company was kept confidential. Data relative to the 2015-2016 to 2020-2021 crops comes from results of estimates developed by Fundecitrus. Data on rainfall accumulated from May to July was supplied by Somar Meteorologia/Climatempo.

6. Concluding remarks

Results from the inventory and tree stripping were obtained throughout the survey, then compiled and restricted, until

the date of this publication, to the following professionals: Antonio Juliano Ayres (Fundecitrus general manager); Fernando Alvarinho Delgado (technical supervisor); Roseli Reina (specialist); Vinícius Gustavo Trombin (executive coordinator linked to Markestrat); Marcos Fava Neves (political-institutional and methodological coordinator linked to FEA-RP/USP and Markestrat); and José Carlos Barbosa (methodology analyst linked to the department of Math and Science of FCAV/Unesp).

All of them were subject to confidentiality obligations with regard to PES information before its announcement was made public, according to agreements signed between each of them and Fundecitrus. As for antitrust practices, they were all complied with through the adoption of measures necessary to prevent any communication or sharing of individual information with competitive content among the orange juice companies that collaborate with Fundecitrus in this project or between these and citrus growers.

This team, together with Fundecitrus president Lourival Carmo Monaco in remote attendance, finalized the crop forecast on May 27, 2021, at 9:30 a.m., in a closed meeting at Fundecitrus, with no external communication channel beyond participants. Following that, at 10 a.m., Fundecitrus president began the public announcement of the crop forecast by videoconference, broadcast live at Fundecitrus channel on Youtube (www.youtube.com/fundecitrus). Next, Fundecitrus general manager Antonio Juliano Ayres presented the detailed data at the Fundecitrus auditorium in Araraquara-SP, with no in-person attendance. After the

crop forecast announcement, the Executive Summary of the 2021-2022 orange crop forecast was made available on the Fundecitrus website. The complete report, including the 2021 tree inventory and the 2021-2022 orange crop forecast, available at www.fundecitrus.com.br

For market effects we have a second year with smaller crops in Brazil and also in Florida, with the USDA estimating only around 51.4 million boxes. With the partial recovery of the demand thank to consumers coming back to orange juice due to the Coronavirus effect (search for vitamin C) and the economic growth expected in 2021/22 the orange juice chain will face a moment of reducing inventories, where demand will surpass the juice supply, probably taking prices to stay at the current levels.

We are very proud to offer these results to all agents interested in the orange juice chain, making this chain an example of public/private partnership to bring transparency and reduce transaction costs, a support for business to take decisions.

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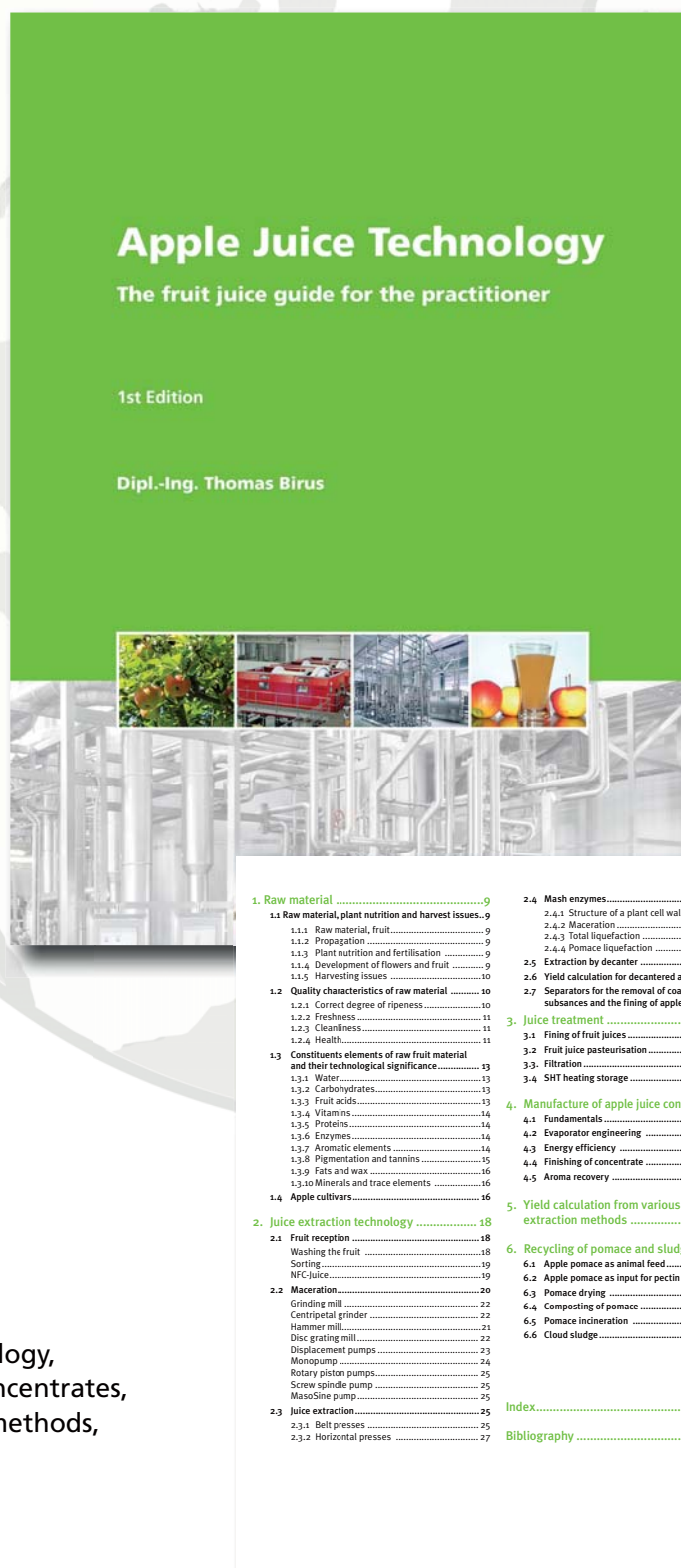
The production of apple juice is a carefully engineered sequence of technological measures aimed at extracting the valuable, flavoursome, enjoyable and desired contents from apples and presenting them to the consumer in the very best packaging.

With this book, up-to-date information is now available to practitioners keen to learn what's new in the increasingly automated production. The book sheds light on the back-ground to modern apple juice technology without delving too deeply into scientific detail.

This book is intended to be of service to school and college students, skilled and master craftsmen and engineers.

It will help to answer the many questions about "How does that work?", "Is there an alternative to this method?" and "Can I do something better in my operation?".

Content: raw material, juice extraction technology, juice treatment, manufacture of apple juice concentrates, yield calculation from various juice extraction methods, recycling of pomace and sludge.



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Nongfu Spring in China trusts Sidel's dry preform sterilisation to enhance its aseptic production flexibility

| Aseptic Production | Packaging Line | PET | Preform Sterilisation | Ready-To-Drink |

Nongfu Spring's latest additions to its beverage portfolio required a hyper-flexible and safe aseptic solution, able to process high- and low-acid, still and carbonated products in PET, while enabling impactful bottle designs. With four decades of supporting sensitive beverage producers worldwide, Sidel recently engineered and installed a complete aseptic packaging line, integrating the Versatile Aseptic Combi Predis™. The line helped the leading Chinese beverage player launch a breakthrough in the domestic market: sparkling Ready-to-Drink (RTD) products, aseptically bottled in PET.

Founded in 1996 in Hangzhou, Nongfu Spring Co Ltd. (Nongfu Spring) is one of the key players in the soft drinks

market in China, maintaining leadership in the packaged water market over the past eight years. The company bottles not only high-quality natural drinking water, but also vegetable and fruit juices, functional beverages, teas and other high-quality soft drinks, including plant protein yogurt, premium water for elderly people and vitamin water. Its strong focus on innovation and premium brand positioning are contributing to the steady customer base increase, even within beverage categories.

The popularity of Nongfu Spring's RTD tea and coffee products reflects a large, overarching trend across Chinese consumers, as they are showing a continuously growing preference for "better-for-you" products that



Sidel recently engineered and installed a complete aseptic packaging line.

© all Sidel



The popularity of Nongfu Spring's RTD tea and coffee products reflects a large, overarching trend across Chinese consumers.

either exclude sugar or include functional ingredients. Through innovative offerings, Nongfu Spring is the first in China introducing sparkling tea, juice, coffee, etc., aseptically packaged in PET and successfully serving these markets, which are offering promising sales opportunities.

Innovation-driven suppliers are key for premium beverage players

Nongfu Spring offers high-end, unique product propositions from bottle design to drink quality and recipe formulation to Chinese consumers and aims to enrich the product portfolio on a yearly basis. Sidel can thus fulfil Nongfu Spring's mission as one of the strong partners that is able to combine forward-looking technologies with professional support.

The two companies rely on a robust relationship, as they have already been working together for over 10 years. Nongfu Spring renewed its trust in Sidel after looking for a highly flexible solution to handle both still and carbonated beverages, as well as low- and high-acid products on the same line without compromising on safety, simplicity, sustainability, and, especially, versatility. This is why a complete PET line featuring Sidel's Versatile Aseptic Combi Predis came as a natural choice.

Flexible aseptic bottling thanks to dry preform sterilisation technology

The leading Chinese player was already familiar with aseptic bottle decontamination technology in a standalone con-

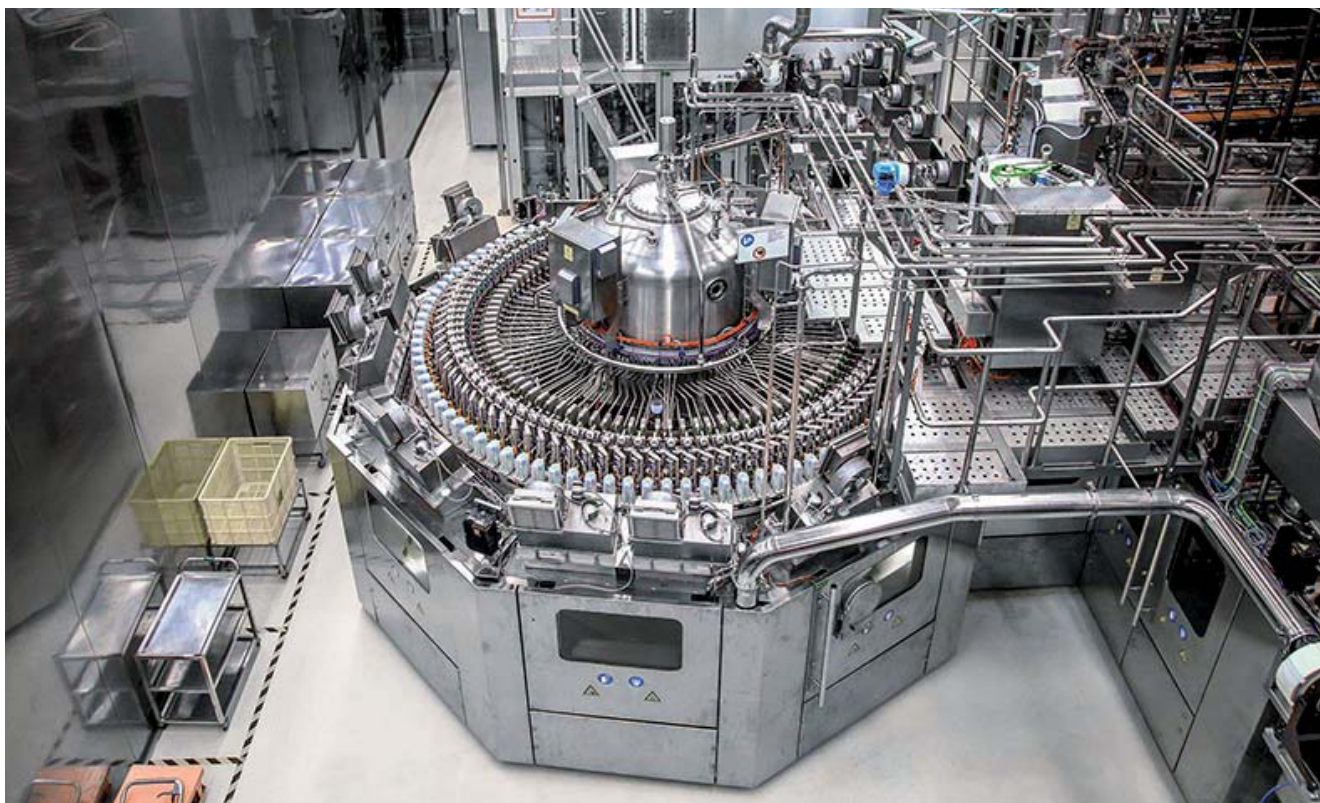
figuration. And it also validated Sidel aseptic dry preform sterilisation solution in the past few years. This is efficiently supporting Nongfu Spring in the expansion of its portfolio, while ensuring reliability and product integrity. For further flexibility, the dry preform sterilisation technology solves the challenges presented by different bottle shapes, as the sterilisation takes place at the preform stage.

Additionally, the Nongfu Spring decided to equip the Combi with Sidel's patented active base mould system, the Base Over Stroke System (BOSS), in order to differentiate some of its bottles and expand its marketing opportunities. In fact, the technology can be selected depending on the container's shape. BOSS is a piston activated system in the blowing phase that strokes the base, thus raising and lowering it during the bottle-forming process, independently from the opening and closing of the two half-shells of the mould.



Nongfu Spring was looking for a highly flexible solution to handle both still and carbonated beverages, as well as low- and high-acid products on the same line.

Nongfu Spring visited Sidel facilities in France and was impressed by the high-quality services and the long-standing expertise of the packaging team. They appreciated the support throughout project execution, starting from the validation of the new container shapes – with and without the BOSS base. In addition, Sidel's liquid packaging interaction scientists performed various flavour tests for the new drinks Nongfu Spring were evaluating, thus defining the carbonation level and the sugar residue in the bottle. Then, once the line was installed, food technologists handled the microbiological validation of both high- and low-acid products, which successfully achieved zero contaminated bottles in 30,000 units on the first attempt, as per the protocol specifications. To ensure this success,



The new aseptic complete PET line at Nongfu Spring's plant in Xin'anjiang is running at 36,000 bottles per hour (bph).

Sidel experts and project managers made sure to closely support Nongfu Spring's operators.

"For Nongfu Spring, it was critical to operate a simple and safe solution, while being able to manage the sheer variety of products in the future," adds Mark Li, Technical Sales Manager Sensitive Products at Sidel. "The cost efficiency and sustainable benefits offered by our dry preform sterilisation technology were also key factors for them: using no water and very few chemicals, while pushing the boundaries of the lightweighting potential, represented a very valid argument with this leading company. Lastly, we were able to secure a very competitive lead time," concludes Mark.

The new aseptic complete PET line at Nongfu Spring's plant in Xin'anjiang (Eastern China) is running at 36,000 bottles per hour (bph). Aside from the Versatile Aseptic Combi Predis, it was also equipped with Capdis™, the dry cap sterilisation technology from Sidel. The line also includes Tetra Pak Processing Systems technologies, an easy-to-handle Sidel RollQUATTRO roll-fed labeller – for wrap-around labels – and Roll Adhesive labeller and a cooler with optimised water consumption. The End-of-Line solution integrates a wrap-around case packer and the modular PalKombi palletiser for medium to high speeds. Thanks to Sidel's expertise in line design and engineering, deriving from its long-standing heritage in aseptic complete solutions for PET, the team at Sidel were also able to

successfully and quickly cope with a very challenging line layout. It took merely three days to install the key pieces of equipment at Nongfu Spring's plant.

Successful partnership leads to repeat orders

To quickly reach the committed line efficiency and maintain consistent volumes and quality of production, Sidel also ensured that two dedicated shifts of field engineers were working alongside Nongfu Spring's personnel for 18 months.

Due to this fruitful cooperation, Nongfu Spring quickly decided to turn to Sidel again and invest in two additional Versatile Aseptic Combi Predis, installed in the company's factories in Hubei and Zhejiang, respectively. Both equipped with BOSS and running even faster at up to 49,500 bph, those pieces of equipment have already been fully validated. Last autumn, Nongfu Spring acquired another Versatile Aseptic Combi Predis Combi from Sidel with speeds up to 54,000 bph.

Sidel
www.sidel.com

Join the **BUSINESS CONTACTS** directory then potential customers can find you better

The **BUSINESS CONTACTS** directory serves as a supplier's register for all those looking for suppliers in specific areas within the fruit beverage industry.

The company directory includes two platforms:

1. **BUSINESS CONTACTS** print directory
2. **BUSINESS CONTACTS** online directory – with search function

The collage illustrates the dual presence of the BUSINESS CONTACTS directory. The top image shows the online platform on a laptop, highlighting its search functionality and geographical focus. Below, the print directory is shown in various formats, including a detailed company profile for Flottweg SE, which provides comprehensive information about the company's products and services, and other pages featuring various company listings and advertisements.

You can choose between a presence in both platforms (the advantage package for comprehensive presence in every **FRUIT PROCESSING** issue and on the web at www.fruit-processing.com) or just in one.

It is also possible to get a free online entry with basic information.

Would you like to participate?

We will be happy to answer your questions at +49 (0) 2634 9235-16 or advertisement@fruit-processing.com.

Our network is your profit. Advertising pays.

Over two decades of good cooperation: Ferdl-Most still relies on GERNEP

| Ferdl-Most | Format Changing | GERNEP Labetta | Labelling Machine | Self-adhesive Label Applicator |

The “Mostviertel” region in Western Lower Austria is characterized by its stunning nature and is known for its fertile ground for all kinds of fruits. Hence, it is not surprising that several farmers, winemakers, and fruit processing companies have settled there.

The beverage producer Ferdl-Most Litzellachner OG is located in the middle of the Mostviertel region. The name of the company is, as the region itself, characterized by a sense of tradition. Since the 16th century, the square-shaped farmhouse is owned by the Litzellachners family and since seven generations all male descendants are named Ferdinand. This explains the company name Ferdl as it is the Austrian nickname for Ferdinand.

The company produces a comprehensive range of fruit must and juice as well as different kinds of brandies. In the last few years, they have experienced a constant growth. The increasing production volumes is demanding efficient labelling, therefore, the factory equipment was modernized and a new GERNEP labelling machine model Labetta 4/3/16 1056 1A 3SK SD was installed.

GERNEP's labelling diversity convinced

A decisive factor for awarding another labelling machine to GERNEP was not only the decade-long cooperation

between the two companies, but also the technical possibilities of GERNEP's machines as they offer outstanding labelling possibilities.

Ferdl-Most Litzellachner OG currently presses four million kilograms of fruit. For this amount of processed fruit, it is very important for the family business to mostly use ingredients from regional farmers. 28 different kinds of fruit and vegetable juices, seven pure apple and pear musts as well as several syrups, ciders and lemonades are made from those ingredients. The variety of products is bottled in six different bottle sizes and forms from 0,2 to 1 litre. Most of them also show individual labels. To label the amount of products the GERNEP Labetta 4/3/16 1056 1A 3SK SD features three newly designed GERNEP self-adhesive label applicators and one cold glue labelling unit. They all apply different front, back and neck ring labels made out of paper or transparent labels in the so called no-label-look to the bottles. The labelling diversity as well as the quick change of format parts with the brand-new self-adhesive label applicators met the expectations of the Litzellachner family.

Technical developments made the difference

In order to meet the ever-increasing customer requirements, GERNEP continuously develops and improves its



Most ingredients stem from regional farmers.

© all GERNEP



From small to big bottles – the entire range of products is labeled with GERNEP.



The new GERNEP self-adhesive label applicator convinces with its precise performance.



A simple operation of all aggregates has always been targeted at GERNEP.

range of machines. Last year the labelling machine manufacturer introduced two new and innovative aggregates onto the market. The GERNEP Labetta 4/3/16 1056 1A 3SK SD is one of the first machines delivered with one of the two developed aggregates as it consists of three new GERNEP self-adhesive label applicators.

The aggregates combine the latest technology for a great performance. The big HMI display guarantees an intuitive handling, even for users without prior knowledge. The advantage? The operating personnel can be easily changed without any delays due to employee trainings. Both the different format parts like e.g. the infeed screw or the container guidance set as well as the label rolls can be changed toolless and quick. The Litzellachners really appreciated this because they can save a lot of time when changing the formats for 35 different kinds of juices.

As not all products are produced in the same quantity, it is advantageous that the speed can be adjusted. Depending on the format parts, the aggregate can be set from 2,000 to 10,000 bottles per hour.

The new GERNEP self-adhesive label applicator proves to be a compact machine module which labels at highest precision due to its new dispenser adjustment. The smart label sensor with auto-teach function recognizes all common label materials and their precise position to guarantee the best possible result. "When GERNEP's Managing Director Martin Hammerschmid introduced the new aggregate to us, we were ecstatic about all its advantages. We definitely wanted to have it installed at our new machine," says Ferdinand Litzellachner, owner of the company. Since then, the technical development did not just look good on paper but also performed perfectly during operation.

All good things go by three

Since 1999 the family-owned business counts on the labelling machine manufacturer from Bavaria. The GERNEP Labetta is already the third labelling machine they or-

dered. A great cooperation was established over the past two decades between both companies, so it has been clear right from the start that another labelling manufacturer was out of question. "GERNEP's service has always been highly professional and satisfactory. Concerns of any kind were handled quickly and without compromise, even during the continuing Covid-19 pandemic one could 100 % rely on GERNEP," says Ferdinand Litzellachner.

For the labelling machine manufacturer, it is very important to offer more than "just" a labelling machine. This also implies an optimal after-sales service. Due to GERNEP's high inhouse-production and warehousing spare parts and defect components are always on stock. As a result, the customer can benefit from quick replacements. But GERNEP'S service also shines by being retrievable at any time. If a downtime occurs, it is paramount to act fast and keep the process simple for the customer. Through its international service network of experts GERNEP can realize this even during the pandemic.

Conclusion

Ferdl-Most Litzellachner OG can look back at a successful company growth so that the square-shaped farmhouse had been regularly expanded and modernized. Today the beverage producer is up to date regarding its production and bottling technology – also due to its new GERNEP labelling machine. Projects like these are very special for Martin Hammerschmid: "I am delighted to serve clients for more than 20 years. To constantly provide them with the latest machines and to take a part in the production of such great products is a good feeling." Both parties look ahead positively and are excited for many more years of great cooperation.

GERNEP Etikettiertechnik
www.gernep.de

PURO: A scale of the digital age

| Industry 4.0 | Inspection Solutions | Precise Weighing | Puro | Weighing Solutions |

Since the product launch, the Puro industrial scale series has been convincing not only because of its performance and affordable price: smart logistics, transparent processes, online tutorials and an improved ecological footprint make Puro a product of the digital age.

In times of Industry 4.0, customers expect more than just reliable weighing technology: the entire package must be right – not just the product alone, but the complete product cycle is important: from the ordering process to the service case, Minebea Intec and its partners are there to support the customer. With Puro, the customer also receives the strong quality of a leading supplier at a fair price. With Puro®, the global leader in weighing and inspection solutions offers a complete package of performance, quality, features and functions, enabling the broad and affordable portfolio that customers wanted.

Precise weighing results, flexible in use and still affordable

In the beginning, the goal was to offer Minebea Intec's reliable weighing technology at an affordable price. However, it quickly became clear that Puro is not just an innovative industrial scale – but an overall digital concept. This starts with the smart logistics network: Registered dealers can conveniently obtain information on the Puro series via the online shop: Here, it is possible to see transparently what the availability of the respective models is and when the product is available. Customers who are not registered in the online shop can use the site to find the nearest dealer from whom they can order the product: Thanks to the broadly developed partner network, the weighing solution is at the customer's within a few days later. Thanks to the connection to an inventory management system, the figures given are 100 % reliable.



With Puro, the customer gets an affordable weighing solution that leaves nothing to be desired, from the first click when ordering to the smart accessories.

© Minebea Intec

“Through transparent communication of availability and delivery times, Minebea Intec offers exactly what customers want: Reliability from the manufacturer that starts with the order.” Says Product Manager Sebastian Pedroß. Proudly. “With the three supply hubs in China, the USA and Germany, we ensure that our more than 200 partners worldwide always have the right model available within the shortest possible time. This means that customers worldwide not only get the quality they are used to from Minebea Intec at an affordable price, but also within the shortest possible time.”

How Puro convinces as a digital solution

But even after delivery, the customer – and the environment – benefits from digital solutions: via the QR code enclosed in the packaging, customers can access the Puro website, which contains all the information material on the industrial scale series: Operating instructions, technical details and exciting best practices that show the Puro in use by customers. Minebea Intec places great emphasis on reducing its environmental footprint by not using printed information material. This concept, coupled with the company’s own initiatives such as “Zero Waste”, should also ensure better environmental sustainability in the future.

The multitude of smart details in the product design also pays off. A typical example is the extremely long-lasting lithium-ion battery, which allows the Puro to be operated for up to 500 hours without a power connection. After unpacking the scale, it can be put into operation directly. The user-friendly interface makes it easy to learn the basic functions. To support this, Minebea Intec offers practical video tutorials on YouTube that briefly and concisely illustrate all the functions of the industrial scale.

Intuitive operation and best possible customer comfort

Large front and rear displays with LCD backlighting guarantee optimal readability, stabilisation in seconds ensures immediate weighing results and the tactile buttons ensure intuitive operation. Depending on the requirement profile, there are models that offer, for example, a rear display for readability on both sides, a traffic light LED for check weighing or non-slip feet for use in difficult environments. Across all models, there is a coordinated user interface that makes handling easier for the user. Puro’s portfolio is still being developed: in addition to the Puro printer, other smart accessories are being planned, such as a barcode scanner that can be connected to the Puro counting scale. With this, barcodes of stored products can be easily captured. This makes tedious tasks such as stocktaking easy, even in smaller businesses. With Puro, the customer gets an affordable weighing solution that leaves nothing to be

desired, from the first click when ordering to the smart accessories.

Smart portfolio continues to grow

Minebea Intec sees digital solutions for industry as a fundamental part of its portfolios. This is demonstrated by the latest additions: On the manufacturer’s website, customers can find interactive offers to inform themselves: In addition to the free webinars with compactly conveyed expert knowledge, Minebea Intec also offers digital offers for other areas: The classic customer appointment can be replaced by a free appointment in the Virtual Showroom, practical online calculators help to calculate the return on investment.

Minebea Intec also scores in the service area: With the smart augmented reality service tool miRemote, the customer can establish a video connection to the service department via PC, smartphone or tablet if necessary. Through this, the technician can see what problem the customer has via the camera of the device used and can give direct instructions to possibly fix the problem quickly and avoid unnecessary downtime. “Our new Puro series of industrial scales is a good example of the holistic approach to digitalisation that we have been pursuing for several years, and which has even been significantly strengthened by the Corona pandemic. “, says Willy-Sebastian Metzger, Director Marketing & Business Development. “For us, the topic of digitalisation has the highest priority. We are pursuing two central approaches here. Firstly, increasing our efficiency and secondly, improving our customer focus. Therefore, digitalisation is reflected in all areas of our company. In new products such as Puro, in production and internal processes, but also in services and offers for our customers. This can be seen particularly well in our virtual showrooms or webinars, which we use, among other things, to inform interested parties digitally about weighing in the digital age.”

Minebea Intec GmbH
www.minebea-intec.com

Cherry trees, Arrigoni's solutions against cracking and pests

| Anti-insect Screens | Cherry Trees | Cracking | Flowering Process | Horticulture | Pests | Rain |

Several testimonies collected “in the field” testify to the effectiveness of PROTECTA® and Fructus® for the safety of the most delicate crops

Spring rains have a decisive influence on the quality of fruits, especially when it comes to delicate cherry cultivars. Rainwater can in fact interrupt the flowering process, reduce quality and, in severe cases, start fruit cracking. The rupture of the drupa, in fact, makes the fruit no longer marketable. Another minor damage, caused by rainfall, is that of excessive humidity, which can encourage the development of dangerous fungal diseases, thus requiring the use of plant protection products. Arrigoni, with solutions such as PROTECTA®, PROTECTA® SYSTEM and FRUCTUS®, offers an effective solution to these problems, going so far as to guarantee a very high protection, as evidenced by producers from different countries.

Arrigoni's cherry protection solutions are distinguished from traditional protective systems in terms of both effectiveness and degree of innovation. Arrigoni's purpose was to create, maintain and restore conditions favorable to the growth and increase of the natural resistance of the plant itself.



Arrigoni's cherry protection solutions are distinguished from traditional protective systems in terms of both effectiveness and degree of innovation. © all Arrigoni

PROTECTA®, specifically, is a protective fabric screen characterized by a calibrated porosity in the textile structure. This allows to increase the ventilation and passage of the wind, thus contributing to the rapid removal of moisture in the protected area. It is weaved with high tenacity Arlene HT® monofilament, that guarantees three times longer duration if compared to plastic film and a greater slippage of water. At the same time, the fabric also ensures protection from hail, optimal airflow and good light filtering. By connecting PROTECTA® with BIORETE® anti-insect screens, you get instead all the safety of PROTECTA SYSTEM, an effective solution to prevent insects – Drosophila Suzukii, etc. – from reaching crops and causing damage to fruit growing. Alternatively, ideal for cherries as well as other tree crops, Arrigoni also offers FRUCTUS®, a leno-weave anti-hail and anti-frost net, both black and in natural gray, available in different versions depending on the needs.

Among those who are trying in the field all the effectiveness of PROTECTA® there is Maurizio Baldisserri, owner of the farm “La Corte Bianca” near Imola, in Northern Italy. “For 8 years – explains Baldisserri – I have planted 12 hectares of cherries within my company. Of these, 6 hectares are south of Imola, five kilometers from the city, so in an area with a usually very hot climate. Here I grow early varieties. The other cherries are in Castel del Rio, on the hills just four kilometers from the Tuscan border. Here the weather is definitely cooler, so I planted late varieties.

I started introducing Arrigoni agrotexiles two years ago, after suffering in 2019 heavy rain damage. In May that year, for four consecutive weekends, a total of 400 milliliters of rain fell. Practically 100 mm every weekend. It had disastrous consequences for my cherries. For some varieties, losses reached 100 % of production.

In fact, it must be remembered – continues Baldisserri – that rain, hail and excessive humidity are some of the main enemies of

cherries. The epicarp of this fruit, in fact, is not able to stop the excess of water. So, when this happens, it often causes the fruit cracking, that is, the rupture of the fruit.

Thanks to a fruitful collaboration with the agronomists of Arrigoni, who led me to visit already covered orchards in Trentino, I have installed PROTECTA® for a couple of years in part of my cherry orchards. I replaced anti-hail nets, which had not given me much satisfaction, as they kept a high percentage of moisture in the covered area.

So far, the results I've achieved in the hectares where I use PROTECTA® have been much better than I expected. In fact, if on the eve of this operation I still expected a loss of 5 to 10 % of production, so far, I have collected 100 %. In addition to protecting against rain, PROTECTA's action is also effective inside the cherry orchard because rainwater becomes a kind of fine fog, which does not bother cherries, and humidity – unlike traditional protection systems – remains controlled, because the level of ventilation it guarantees is much higher. I also associate this system with foliar fertilization with calcium oxide, to ensure epicarp resistance, and I implement a high micro irrigation, to ensure that the cherry plants do not have sudden humidity accelerations during its annual cycle, suddenly moving from a drought situation to one of high humidity. Finally – concludes Baldisserrri – PROTECTA SYSTEM is also very effective against insects, as *Drosophila Suzukii*. In fact, an anti-*Drosophila* net already existed for five – six years – but PROTECTA® meshes are even thicker than that one. Therefore, its function can be ambivalent: rain control and anti-pests”.



The function of a PROTECTA SYSTEM can be ambivalent: rain control and anti-pests.

Positive comments arrive from Portugal from different producers on Arrigoni solutions. The testimony comes from Novafrut, Arrigoni's partner in the Iberian market: “We receive numerous positive comments, for cherries now harvested. All the varieties, some of them very early, arrived perfect at this appointment, even though this year the most delicate days, from the veraison onwards, were very rainy. Thanks to PROTECTA®, no rain damage was recorded and the microclimate inside cherry orchards has always remained the ideal one”.

Arrigoni SpA
www.arrigoni.it

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Symrise opens innovation center in Dubai to shape the future of taste for food in the Middle East



Right to Left: Jens Meier, Technical Manager, Flavor Division Middle East, Sofiane Berrahmoune, Sub Regional Director Flavor Africa Middle East, Feryal Ahmadi, Chief Operating Officer – DMCC, Dhanu Abhyankar, Director – Sales & Leasing – DMCC, Paul Ashton, Executive Director – Property-DMCC © Symrise

Symrise AG has opened its state-of-the-art development, application, and sensory laboratories in Dubai. The company has invested about 1 million Euro into the facilities to decode, design, and deliver winning taste solutions for leading food and beverages brands that consumers love. To meet the demands of its partners and to accommodate its growing team, the company recently moved to the iconic Gold Tower Building in the Dubai Multi Commodities Center (DMCC), Dubai's dedicated hub for global trade, business and specialist industries in JLT. Symrise AG has been operation in the Middle East for many decades leading to the first opening of its first sub-regional offices in Dubai in 2005. Since then, the company has seen double-digit

growth year on year with its partners across the Middle East region.

The new sub-regional centre spreads across 10,500 sq ft and occupies the entire lower penthouse level/36th floor of the Gold Tower. The contemporary workspace has been designed in line with the company's four pillars of sustainability in mind; footprint, innovation, sourcing and care. It is working towards achieving carbon neutral status, to support the Symrise AG global objective of halving its greenhouse gas emissions by 2025 and reaching climate positive operations from 2030 onwards.

The facilities are designed to take customers on a journey, and support the development of consumer-led winning concepts and taste solutions for high-growth categories, beverages, culinary, dairy, snacks, and confectionery.

The premises will allow the company to support diverse working styles and is split into a variety of working and meeting areas, for Symrise Middle East's expanding cross-functional teams to interact and collaborate in a bright, modern, and dynamic working environment. The dedicated application and sensory laboratories will help the teams – from marketing, sensory and consumer insights to regulatory, technical, and commercial to continue achieving in the field of flavour and nutrition evaluation.

The sensory booths, where panellists taste, evaluate, and describe flavours in application, features state of the art equipment and programs that help design solutions meeting customers' expectations.

Recycling is top of the agenda for Plastipak as major investment announced in Spain

Plastipak, a global leader in the design, manufacture and recycling of plastic containers has announced a major investment in recycling at its manufacturing site in Toledo, Spain. The new recycling facility will convert PET flake into food-grade recycled PET (rPET) pellets suitable for direct use in new preforms, bottles and containers.

The new facility will be co-located with the current preform and container manufacturing plant facilitating additional carbon savings through the elimination of resin transport. The new recycling plant will produce 20,000 tonnes of food-grade pellet per year and will commence production in the summer of 2022. The project will create approximately 14 new jobs and include additional manufacturing and warehouse space.

Pedro Martins, Plastipak's Executive Managing Director Europe, explained "The investment in a new recycling facility in Spain will support both Plastipak and our customers in fulfilling our commitments to corporate social responsibility. The project comes in advance of minimum levels of recycled content mandated by the Single Use Plastics Directive, and will support brand owners to reduce their financial obligations under the planned Spanish plastics tax."

This will be Plastipak's fifth global location producing recycled PET (rPET) and confirms Plastipak as the largest producer of bottle-grade recycled PET in Europe. With three long-established rPET facilities in Europe (France, Luxembourg and the United Kingdom), Plastipak already produces well over 130,000 tonnes of recycled PET in Europe. Plastipak also operates a HDPE and PET recycling plant in the US.

BPI partners with fruit beverage leader SUMOL+COMPAL

Beverage Partners International (BPI) has the great pleasure of announcing that moving forward, it will offer a licensing and distribution opportunity for SUMOL+COMPAL, a world-leading market player in the fruit beverages category.

SUMOL+COMPAL is the largest juice producer in Portugal, with a global footprint in more than 68 countries around the world. The proud owner of a varied portfolio of 16 brands, the company's offering is split across 6 different segments: juices and nectars, soft drinks, water, snacks, vegetables and alcoholic drinks.

Moshy Cohen, CEO, BPI, commented: "We are very proud to partner with S+C in their rapid international expansion. S+C is a company with unique know-how in the juice based beverage market, and excellent brands that can significantly improve the capabilities and competitive advantage of BPI's bottlers across the world."

Nadia Franco, S+C, Head of New Business, Int'l, added: "Sumol and Compal have great momentum in international markets. Both brands present superior products and unique positioning that perfectly fit the most important consumer trends."

"We are excited to join BPI and present licensing opportunities for its bottlers and distributors network across the world."

Complementing a healthy lifestyle

SUMOL+COMPAL bases its ethos on inspiration it draws from fruits, vegetables and water, all indispensable

natural sources of nutrition, hydration and pleasure. The global market for juice-based beverages, both fruit and vegetable-based, is projected to continue to grow thanks to innovation in the category alongside consumer demand for products that enable a healthy lifestyle.

The drive for Health and Wellness is providing huge opportunities for pioneering beverage industry players. Rising interest in non-alcoholic drinks options and beverages that complement a healthy lifestyle means that SUMOL+COMPAL offers a dynamic opportunity within the beverage category, targeting consumers with tasty, nutritious fruit and vegetable ingredients via established brands and exciting flavours.

Flagship brand COMPAL is the market leader in the Juice category in Portugal, with over 60 % market share in the country as well as a global presence, owing its loyal consumer following to its delicious and nutritional juices and nectars – picked at the perfect moment to ensure the final product is always rich in nutrients, and keeps the flavour and aroma of freshly-picked fruit.

SUMOL, meanwhile, is a slightly sparkling drink made with real fruit juice and pulp. With a wide and unique range of fruit flavours and a 62.4 % market share in Portugal, it is perfect for consumers looking for refreshment without compromising on their health and wellness lifestyle.

OFFERS & REQUESTS

**Do you want to sell used tanks or pasteurizers? Or offer fruit concentrates?
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Improve accuracy and process economy with new lower-flow Twin Screw Pumps

The popular Alfa Laval Twin Screw Pump comes in three new model sizes optimized to handle lower flow rates for hygienic applications across the dairy, food and beverage industries.



Twin Screw Pump

© Alfa Laval

Designed for process flexibility, the Alfa Laval Twin Screw Pump is built on a robust, reliable platform that meets stringent hygienic standards. It is capable of handling both product transfer and Cleaning-in-Place (CIP). Its low

pulsation characteristics and excellent solids handling capability reduce the risk of product damage, thereby improving product quality. Maintenance is simplified and process uptime increased.

By increasing the performance envelope of the pump, you reap the benefits of lower flow rates yet get better accuracy, higher volumetric efficiency and more economical operation.

Like all Alfa Laval Twin Screw Pumps, these small, but mighty new models excel at multi-duty applications, handling both product transfer and cleaning duties. This eliminates the need for a separate Cleaning-in-Place pump and bypass piping. Cost savings add up thanks to a truly front-loading cartridge seal that simplifies maintenance and extends process uptime.

The new compact, lower-flow Twin Screw Pumps are the right choices for low-shear transfer of sensitive, abrasive and high and low viscosity fluids with high large solids content. Low pulsation characteristics greatly reduce the risk of product damage, thereby improving product quality.

SAW flowmeter with explosion protection approval

Bürkert's proven FLOWave flowmeters are now approved for use in potentially explosive atmospheres. Hygienic measurement without media contacting sensor elements in the tube is thus also possible in Ex zones with flammable solvents such as alcohols, e. g. for the production of spirits and pharmaceutical products.

For a reliable process, quality and production guidelines must be observed and production parameters documented, even with frequent product changes. To this end, Bürkert Fluid Control Systems now also offers its FLOWave flowmeter Type 8098 as an ATEX-certified version up to Ex zone 2 for production processes in potentially explosive atmospheres.

The compact and lightweight device measures the volume flow independent of the medium's conductivity and is, therefore, also suitable for measuring ultrapure water and alcohols. It can thus be used, e. g. for the production of



The proven FLOWave flowmeter is now available as an ATEX version
© Bürkert Fluid Control Systems

spirits and pharmaceutical products. The flow sensor also measures the temperature and the density factor and can quickly and reliably detect any media change, e. g. during rinsing processes. It supports Bürkert's EDIP (Efficient Device Integration Platform) for easy digital integration into the system control.

Hygienic measurements thanks to SAW technology

The flowmeter operates according to the SAW method (Surface Acoustic Waves). When using this measuring principle with acoustic surface waves, there are no dead legs or sensor elements in the measuring tube. The CIP/SIP-capable

flowmeters can thus be cleaned just as easily as normal pipelines, which reduces operating costs. All media contacting parts are made of stainless steel. The sensors thus meet the highest hygiene standards and facilitate the validation of production or cleaning processes.

Elopak announced tethered cap solution

Elopak announced a new tethered cap solution for its iconic Pure-Pak® cartons – the Pure-TwistFlip™.

The tethered cap is the latest sustainability-focused innovation announced by Elopak. The closure remains attached to the carton throughout its entire lifetime, helping to tackle the serious problem of marine littering by ensuring that the cap is disposed of properly. It is also Elopak's lightest screw cap to date, helping to reduce the use of plastics.

As cartons can be recycled with the tethered cap attached, the Pure-TwistFlip™ offers up an exciting new option for brands looking to meet the growing consumer demand for sustainable packaging, without compromising on convenience or product integrity.

Beverage cartons have strong environmental credentials when compared with alternatives such as plastic bottles. Even with a regular cap studies have shown that in the case of UHT milk, cartons result in 70.7 % less CO₂ emissions and in the case of fresh milk 83.6 % less CO₂ emissions in comparison to disposable PET bottles.



Pure-TwistFlip™

© Elopak

Elopak supplies renewable, recyclable, and carbon neutral Pure-Pak® cartons. The new Pure-TwistFlip™ cap can be combined with any existing Pure-Pak® carton to provide an original Elopak packaging solution that prioritizes the environment, consumer convenience and safety. The innovation is expected to launch to the market in Autumn 2021.

First commercial launch for SIG's Paper U-straw for aseptic cartons



Paper U-straw

© SIG

SIG's pioneering Paper U-straw made its commercial debut in April. CAPSA Food is the first to take advantage of this innovation for its 'Central Lechera Asturiana' whole milk, Spain's number one dairy brand.

Sustainable alternatives continue to gain momentum because of the EU Waste

Legislation and growing concerns about the environmental impact of plastic straws. According to the European

Union's SUP (Single Use Plastic) directive, plastic straws in Europe must be replaced by July 2021.

CAPSA Food has launched its Central Lechera Asturiana whole milk with the new SIG Paper U-straw on SIG's combiblocSmall 200 ml carton packs.

The innovative Paper U-straw supports SIG's ongoing efforts to use more renewable materials. The paper used to produce SIG paper straws, including straight and U-shaped in 4 and 6mm diameter, is FSC™-certified. The wrapper for the straw has also been redesigned to remain attached to the packaging to prevent littering and can also be disposed with the carton pack.

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To view our news section, please visit www.fruit-processing.com



Firmenich pioneers a revolutionary natural extraction technology & launches Firgood™ ingredients

Firmenich, one of the world's largest privately-owned fragrance and taste companies, unveils the Firgood™ collection, a brand new range of pure, 100 % natural extracts obtained by a revolutionary, sustainable proprietary extraction technology. This patented process, pioneered by Firmenich, enables the processing of biomass never previously used in the industry for natural ingredients. Part of the Naturals Together™ platform, Firgood™ extracts complement Firmenich's extraordinary palette of natural perfumery and taste ingredients with unique new naturals.



Patented process

© Odds

More environmentally friendly than any other extraction method, this technology is the culmination of advances in sustainable extraction. Solvent-free, dry biomasses only require water humidification, while low energy consumption is an added benefit of the process. In addition, the waste produced is clean and can easily be upcycled, reinforcing the sustainable value of this pure extraction.

“This advanced and highly sustainable technology is a revolution for natural ingredients in our industry. It opens new creative territories, unexplored until now,” said Gilbert Ghostine, CEO Firmenich. “The development of this brand-new industrial facility in our Naturals Center of Excellence in Grasse reinforces our continued leadership in naturals.”

The Firgood™ technology uses only the water that is an inherent part of the biomass cells. Once warmed up by electromagnetic vibration, the water carries the odorant components, to yield the final pure extract.

“We have successfully scaled-up from lab and pilot plant to two industrial lines, offering production capacity that ranges from hundreds of kilograms to several tons of primary extracts,” added Boet Brinkgreve, President, Ingredients. “Today, a pear Firgood™, a ginger Firgood™ and a green bell pepper Firgood™ are part of the Firmenich creative Perfumery palette, and in the coming months we will introduce 10 additional ingredients followed by a rich pipeline of future launches for both Perfumery and Taste applications.”

These revolutionary three additions to Firmenich's creative palette are perfectly designed to create new natural signature answering our customers' expectations for the highest standards of differentiation and sustainability in the natural ingredients field.

100 percent organic, 100 percent plant-based Aloe Vera fruit juices coming to the US



© Veganic

Veganic is Ireland's 100 percent organic and plant-based eco-friendly supermarket that will soon introduce its Aloe Vera With Apple Juice to American consumers.

Organic food production helps keep the waterways, wild animals, insects, and farmers safer, and prevents toxins from working their way into the food chain. Veganic producers do not spray crops with chemicals or pesticides or feed them artificial fertilizers, which means the best possible quality end drink product for Veganic consumers.

When you drink Veganic's fruit juice the main ingredient is aloe vera, which is a great source of antioxidants, vitamins A, C, E, beta-carotene, folic acid, calcium, and magnesium.

This Veganic product with its high-quality ingredients, including Aloe Vera, come from the finest organic Aloe crops in Andalusia, Spain.

Parents may struggle with choosing healthy beverages for their children, new study suggests

*Current beverage labeling regulations appear to fall short of helping parents identify the ingredients, sugar and juice makeup of beverages they purchase for their children, a recent study published in *Pediatric Obesity* suggests. This has researchers calling for changes to beverage labeling regulations to increase transparency and help consumers choose healthier beverages.*

The experimental online study included over 1,600 parents who had healthy children aged 1 to 5 years old. Parents were shown product label information for commonly consumed children's beverages, including flavoured waters, 100 % fruit juice, and juice drinks and other beverages containing added sugars or non-nutritive (artificial) sweeteners. Some parents were shown only front labels, while some were shown both front and back or side labels which included the Nutrition Facts panel and other information. Study participants then answered questions concerning the sugar and percent juice content of the beverages.

About one-third of participants indicated they were not confident they could identify the added sugar and juice content of beverages. Only about half of study participants (48 percent) said they looked at the Nutrition Facts panel all or most of the time when choosing beverages for their children.

Overall, participants frequently underestimated the percent of juice in 100 % fruit juice. Even though the percent juice was stated on the package front for the 100 % fruit juice product in the study, only 51 percent of parents who were shown only the package front correctly identified the juice percentage. When exposed to additional information on the back and side panels, 37 percent still could not correctly identify the percent juice and 40 percent incorrectly said that 100 % juice contained added sugars.

Conversely, participants frequently overestimated the amount of pure fruit juice in sugar-sweetened juice drinks and beverages. For an added-sugar product that looks similar to 100 % orange juice but contains only 5 percent juice, almost all participants (98 percent) could not accurately state the amount of pure juice just by looking at the front of the label and, on average, estimated that the



Parents were shown product label information for commonly consumed children's beverages, including flavoured waters, 100 % fruit juice, and juice drinks and other beverages containing added sugars or non-nutritive (artificial) sweeteners. © FDOC

product contained 45 percent pure fruit juice, 40 percent higher than the actual juice content. Fewer than half of participants who additionally looked at back/side labels could correctly identify the percent juice content and, on average, estimated that the beverage contained 24 percent pure juice. For beverages that are not 100 % fruit juice there is no requirement to identify sweeteners or juice content on the front label.

"The results are striking and this study suggests that labels for 100 % fruit juice and fruit beverages or drinks are not working as intended and for many parents may result in misunderstandings and confusion when trying to choose healthful beverages for their children," said Gail Rampersaud, registered dietitian nutritionist in the Scientific Research Department of the Florida Department of Citrus. "Consumers need more education coupled with labels that are clearer and easier to understand," added Rampersaud.

The results suggest that lack of knowledge and clear labeling may lead parents to choose less healthy added-sugar beverages over 100 % juices, such as 100 % orange juice. The researchers suggest that the Food and Drug Administration allow label declarations that will increase transparency concerning juice percentage and sweetener content, particularly on front of package, to help consumers make healthful beverage choices.

NEW PRODUCT LAUNCHES



AURIC HAIR BOOST BRAHMI, AMLA AND ALOE VERA WITH COCONUT WATER



Juices & Nectars



May
2021



1.02 USD
0.84 EUR



India

Company: Zenith Drinks

Description: Hair boost brahmi, amla and aloe vera with coconut water in a 250 ml glass bottle.

Claims: 100 % vegetarian. No preservative. No added sugar. Low calorie. Brahmi: nourishes scalp & hair follicles. Amla: excellent for healthy hair. Aloe vera: improves hair shine & density. Crafted with premium herbs. 100 % natural.

Ingredients: Water, tender coconut water (15 %), deionized apple juice concentrate, lemon juice concentrate, herbal extracts (0.15 % - amla brahmi, aloe vera), beta carotene extract. Contains added flavours - natural flavouring substances (guava mango).



PALDO PORORO LYCHEE FLAVORED DRINK



Fruit/Flavored
Still Drinks



May
2021



0.95 USD
0.78 EUR



Indonesia

Company: Paldo

Description: Lychee flavored drink in a 235 ml PET bottle featuring Pororo.

Claims: Certified halal. Recyclable packaging.

Ingredients: Water, sugar, calcium lactate, lychee concentrate (0.22 %), skimmed milk powder, citric acid, sodium citrate, vitamin D3, artificial lychee flavor.

Analysis Insight: Non-carbonated fruit juice drink with no artificial colorings. It contains Vitamin D, Aeebon (children's health supplement) to benefit growing children. Vitamin D helps children build strong bones and prevent rickets. It features Pororo.



JUSSU ANTI-INFLAMMATORY COLD PRESSED PINK LADY APPLE AND STRAWBERRY JUICE



Juices & Nectars



May
2021



2.40 USD
1.98 EUR



Malaysia

Company: Kara F And B Productions

Description: Cold pressed pink lady apple and strawberry juice in a 250 ml plastic bottle.

Claims: 100 % pure juice. Certified halal.

Ingredients: Pink lady apple, strawberry.

Analysis Insight: Perfect sunny-afternoon hydrating juice. It improves blood antioxidant status, reduces inflammation as mentioned clearly front-of-pack and supports hydration. This cold-pressed juice highlights the specific apple being used: Pink lady.

NEW PRODUCT LAUNCHES



SOOCHI GLOW BERRY PREJUVENATION BEVERAGE



Carbonates



May
2021



3.97 USD
3.27 EUR



New Zealand

- Company:** Soochi
- Description:** Deliciously refreshing spritz with hints of berries and botanics, infused with Gelita Verisol collagen peptides, elastin, hyaluronic acid, prebiotics, and reishi. Comes in a 330 ml aluminum can.
- Claims:** Elevate your daily self-care routine. Contains prebiotics, hyaluronic acid, elastin, and reishi. With no added sugar. For the skin and gut.
- Ingredients:** Sparkling water, apple juice, pomegranate juice (8.0 %), beetroot juice, raspberry juice (3.0 %), Verisol collagen (1.6 %), dietary fiber (Fibersol-2 (1.5 %)), blackcurrant juice (1.3 %), natural flavor, ascorbic acid (vitamin C), hyaluronic acid (0.02 %), reishi (0.02 %), elastin (0.003 %), juice from concentrate.



4HEARTS CITRADORA LEMON VERBENA, CHAMOMILE AND GINGER KOMBUCHA



Iced Tea



May
2021



4.09 USD
3.37 EUR



United States

- Company:** 4Hearts Kombucha
- Description:** Kombucha brewed with lemon verbena, chamomile, and ginger flavor in a 473 ml aluminum can.
- Claims:** Adventure ready. Locally made with all organic ingredients and love. USDA Organic. Raw. Our eco-friendly packaging means you can take your favorite flavor anywhere.
- Ingredients:** Water, organic cane sugar, live organic probiotic kombucha cultures, organic green tea, organic ginger juice, organic lemon verbena, organic chamomile.
- Extra Notes:** Keep refrigerated. Natural fermentation causes trace amounts of alcohol.
- Analysis Insight:** Another kombucha launched in the US, now with the interesting ingredient mix of lemon verbena, chamomile and ginger. The ingredients, having a healthy halo to most consumers, should give the beverage a fresh and uplifting taste profile.



In cooperation with Innova Market Insights we are happy to publish new product launches on a global scale. Innova Market Insights is a world leading provider of knowledge solutions for the food and beverage industries. They serve their clients around the world with a full spectrum of solutions built around the professional needs of their individual roles.

The Innova Database is an online, cutting-edge food and beverage product database – created by a dedicated team of industry- leading food and beverage experts that collect the latest data from more than 70 countries. This allows you to instantly track trends and innovations across all food and beverage categories with just the click of a mouse. At Innova, their goal is simple – help you stay ahead of the curve.

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MARKET PRICE REPORT

(Price Information without Liability)

Source: Survey by confructa medien GmbH, from a minimum group of 5 marketers and 5 juice purchasers for each product. Since its first publication in 1991, more than 40 industry partners – manufacturers, traders, processors, bottlers, packers, bankers – have been contributing data.

Your price quotation data, too, is much appreciated.

Please forward your contributing input directly to the editorial team
c/o christian.friedel@confructa-medien.com

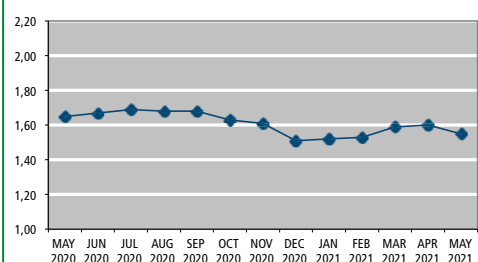
Prices: The price range is calculated for juice or puree of different proveniences, traded in drum or bulk; \$/kg = cif Rotterdam; EUR/kg = DDP

Custom Duties: The range encompasses preferential duties up to 30 %

—◆— This line represents the development of the mean values
(excepted graph 'orange juice concentrate – future markets')

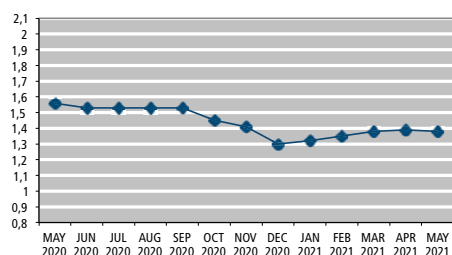
Apple

Concentrate, 70 °Brix, high acidity, EUR/kg



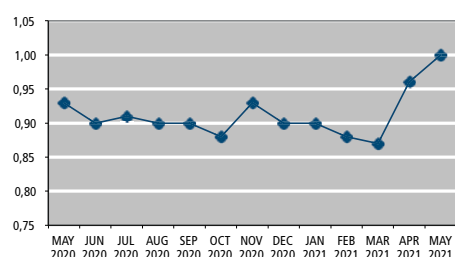
Apple

Concentrate, 70 °Brix, low acidity, EUR/kg



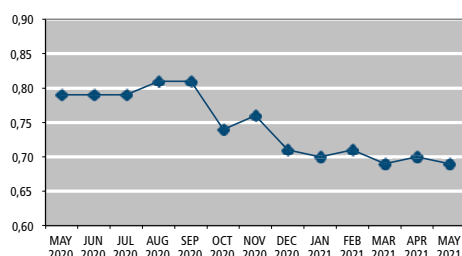
Apricot

Puree Concentrate, 30-32 °Brix, EUR/kg



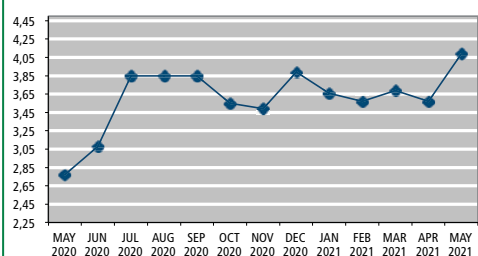
Banana

Puree Concentrate, 22-24 °Brix, \$/kg



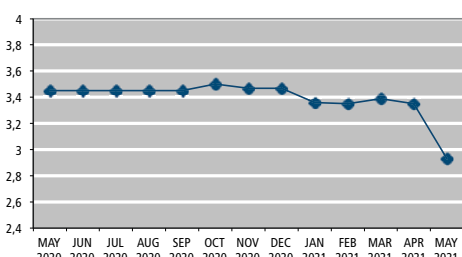
Black Currant

Concentrate, black, 65 °Brix, EUR/kg



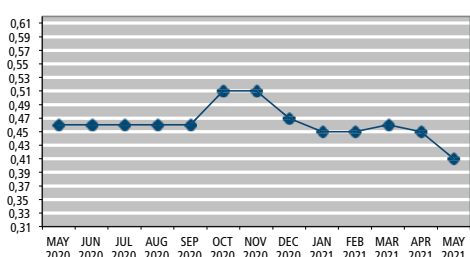
Carrot

Concentrate, 65 °Brix, EUR/kg



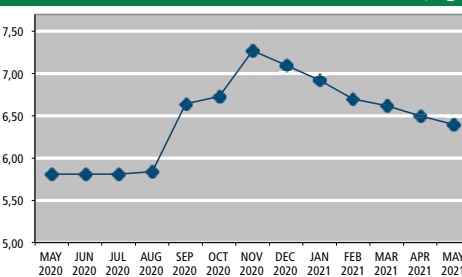
Carrot

NFC, EUR/l



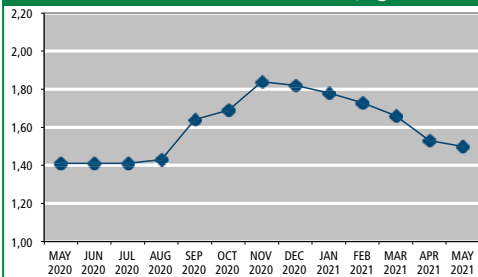
Coconut

Concentrate, 60 °Brix, \$/kg



Coconut

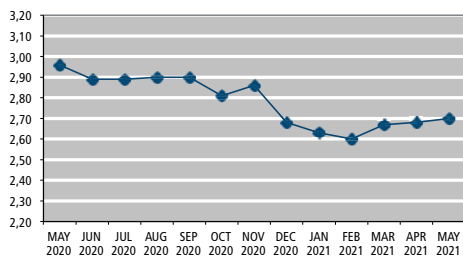
NFC, \$/kg



MARKET PRICE REPORT

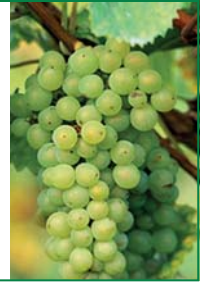
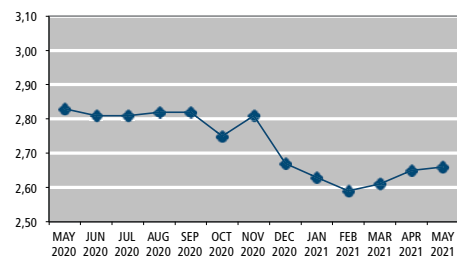
Grape

Concentrate, red, 65 °Brix, EUR/kg



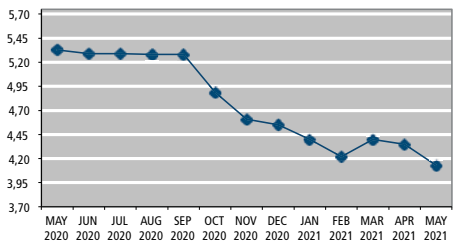
Grape

Concentrate, white, 65 °Brix, EUR/kg



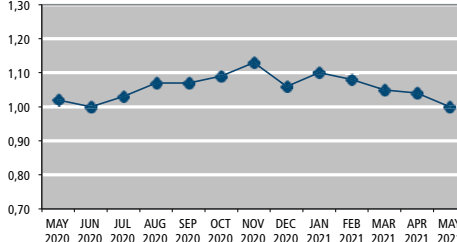
Grapefruit

Concentrate, 58 °Brix, \$/kg



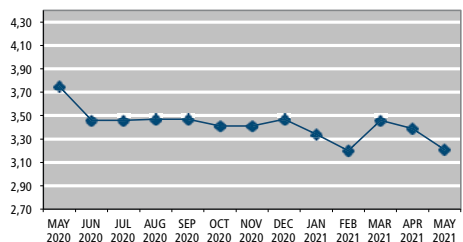
Guava

Puree Concentrate, pink, 8-10 °Brix, \$/kg



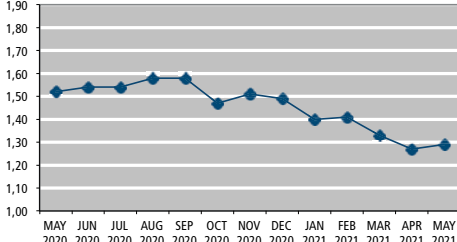
Lemon

Concentrate, cloudy, 400 g/l acid, \$/kg



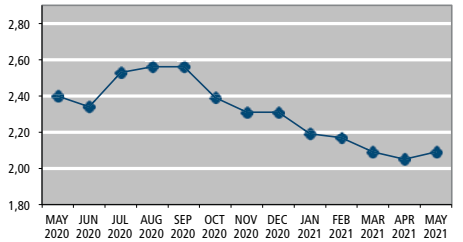
Mango

Puree Concentrate, 15 °Brix, \$/kg



Orange

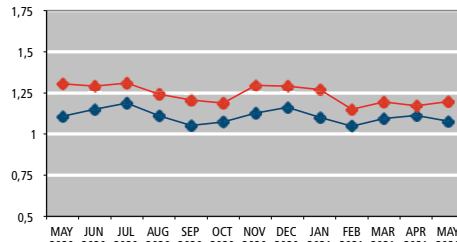
Concentrate, 66 °Brix, \$/kg



Orange

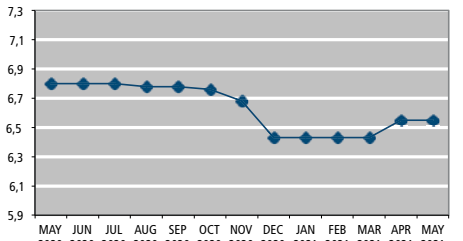
Concentrate, Future Markets \$/lb.

◆ = highest values
◆ = lowest values



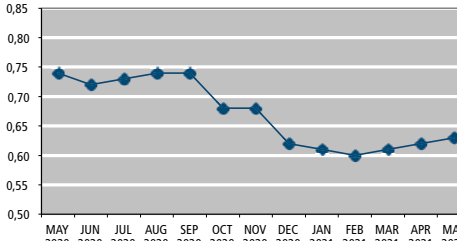
Passion Fruit

Concentrate, 50 °Brix, \$/kg



Peach

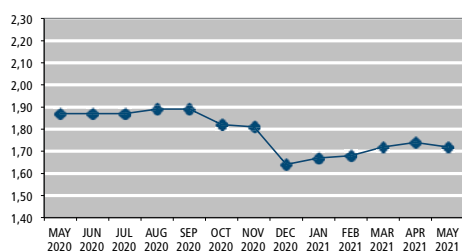
Puree Concentrate, EUR/kg



MARKET PRICE REPORT

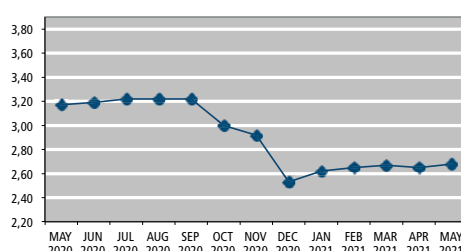
Pear

Concentrate, 65 °Brix, EUR/kg



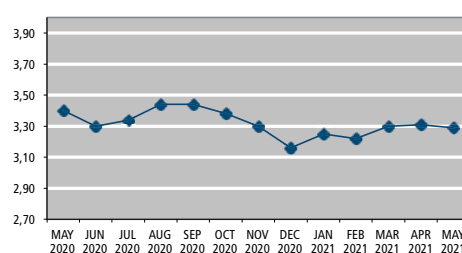
Pineapple

Concentrate, 65 °Brix, \$/kg



Sour Cherry

Concentrate, 65 °Brix, EUR/kg



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Concentrate
Aseptic
Raw
Organic
Fairtrade

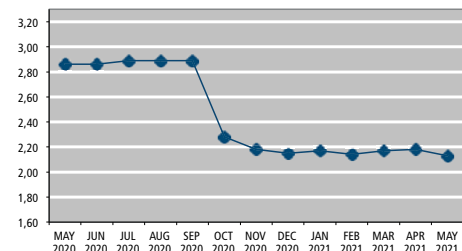
Drum
IBC
Tank truck
Container

dr-martins.com



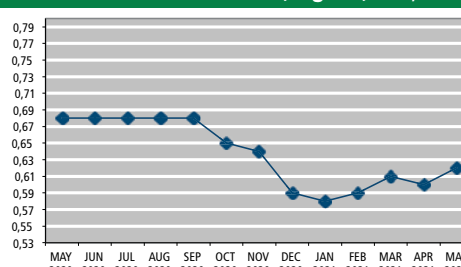
Apple

Concentrate, organic, high acidity, 70 °Brix, EUR/kg



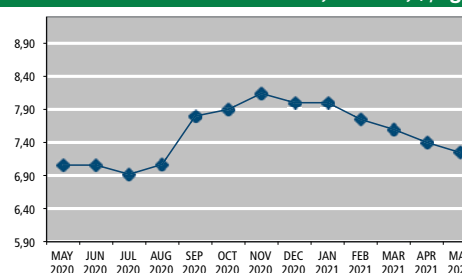
Carrot

NFC, organic, EUR/l



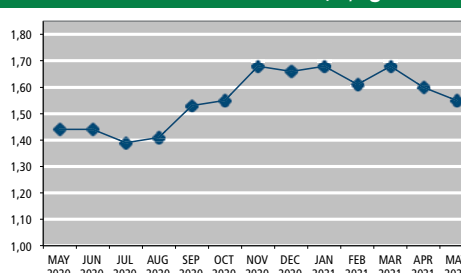
Coconut

Concentrate, 60 °Brix, \$/kg



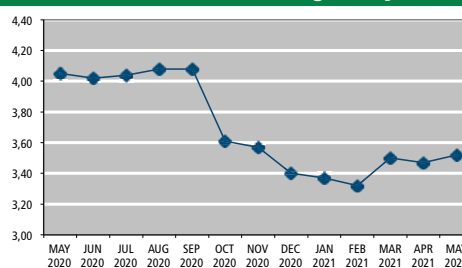
Coconut

NFC, \$/kg



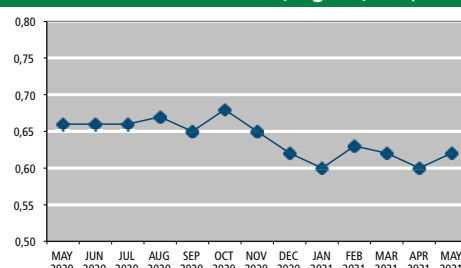
Orange

Concentrate, organic, 65 °Brix, \$/kg



Red Beet

NFC, organic, EUR/l



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