

FRUIT PROCESSING *digital*

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Business News
Filling & Packaging
Market Trends
Market Price Report
New Product Launches
Process Technology
Raw Material

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INTERNATIONAL JOURNAL FOR THE FRUIT PROCESSING, JUICE AND SOFT DRINKS PRODUCING INDUSTRY

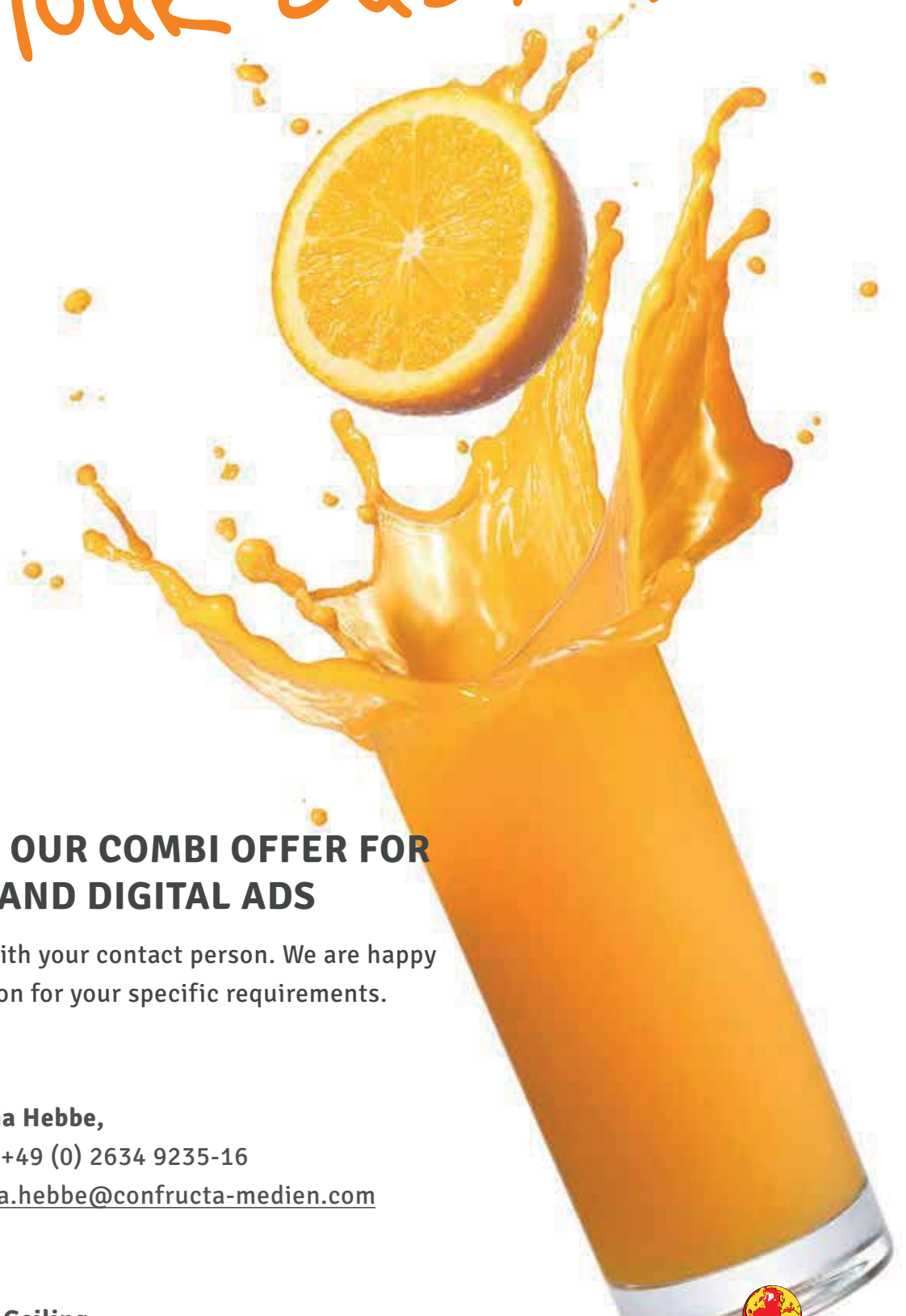


Orange Juice Futures – predictably irrational?

Orange juice and the effect of hurricane Irma ...

read more on p. 350

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FRUIT
PROCESSING

EDITORIAL

Dear Readers,

To start with this digital edition of FRUIT PROCESSING we look back to September 2017. Major devastation was caused by hurricane Irma as it hits the heart of the Florida's citrus growing region. Fruit trees were battered, animals drowned and the subsequent flooding was widespread. On page 350 ff you will find a news extract released by Mintec in the aftermath of the storm rising the critical question: „Orange Juice Futures – Predictably Irrational?“.

According to the UN Food and Agriculture Organization, the world will need to produce 70 % more food in 2050 than it did in 2006. How do we get around feeding more people with less food? A key to enhance end products that will deliver greater nutrition, so we can feed more people with less, and a process that generates little to no waste, thus preventing further degradation to the environment. Please become acquainted with the Disruptor™ technology on page 354 ff.

Marcos Fava Neves prepared a list of global trends for food, fruit and juice companies on page 361 ff. The contribution is aimed to help companies to monitor some of the trends and try to find where threats and opportunities are coming in order to be prepared.

On page 364 ff we introduce to you Whole Green Coffee Powder (WGCP®). This product contains much less caffeine than roasted coffee, so has fewer side-effects. At the same time, it is much more effective because the fiber and bean husks it contains prevent the rapid release of the natural caffeine. WGCP® caffeine reaches the bloodstream gradually during a period of 6-8 hours. The powder can be added in stabilized form to RTD drinks such as functional soft drinks, energy drinks and smoothies.

Enjoy reading.

Yours,



M. Benich

RAW MATERIAL

Nick Peksa

Orange Juice Futures – predictably irrational? 350



Back in September 2017 major devastation was caused by hurricane Irma as it plowed its way through Puerto Rico and then into the heart of the Florida’s citrus growing region. Fruit trees were battered, animals drowned and the subsequent flooding was widespread. Below is a news extract released by one of our analyst in the aftermath of the storm. Can we use this information to predict the future price of orange juice? ...

PROCESS TECHNOLOGY

Time to get radical? New technology is needed to hit the sweet spot in the food industry 354

Essential disruption and overhaul of the entire food and beverage manufacturing sectors must happen to face the future of food. Investment into existing processing structures is fruitless. States Roy Henderson, CEO of Green Cell Technologies®. As of September 2017, planet Earth is home to over 7.5 billion people. That’s an awful lot of mouths to feed. It’s especially scary considering it does not take into account the fact that raising animals for food, (including land used for grazing and land used to grow feed crops) now uses a staggering 30 % of the Earth’s land mass. While urbanisation is seeing people herded into high-rise buildings to accommodate our expanding population, available agricultural land is still shrinking and with it, our ability to effectively feed everyone. So, it doesn’t really matter where we live if there is not enough food or water (or fruit juice) ...

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FILLING & PACKAGING

The smart Sidel Super Combi brings equipment intelligence to today’s production 358

Successfully launched at Drinktec 2017, the world’s leading trade fair for the beverage and liquid food industry, the Super Combi is designed and engineered as a single smart solution. It makes life easier for producers of water and CSD beverages, via integrated data-driven intelligence, making optimum performance easily and continuously achievable across the entire production process. Sidel Super Combi is the next generation solution integrating five process steps: preform feeder, blower, labeller, filler/capper and cap feeder into an all-in-one smart system ...



MARKET TRENDS

Marcos Fava Neves

Global trends for food, fruit and juice companies. 362

The objective in this article is to list some of the global trends happening in the macro environment of food, fruit and juice companies. I am dividing in 5 majors areas, as seen in the following figure, where changes are impacting food, juice and agribusiness companies, to know: economic environment, governance, consumer movements, technology and management. This list is far away from being complete and aims to be a contribution helping these companies to monitor some of the trends and try to find where threats and opportunities are coming in order to be prepared, react and neutralize or even take advantage ...

FLAVOURS & INGREDIENTS

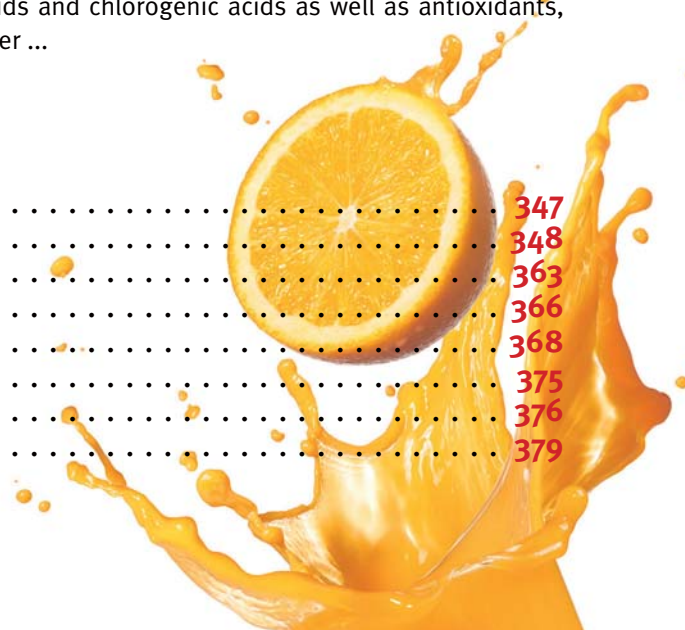
Whole green coffee powder for everyday performance 364



Taiyo’s whole green coffee powder, or WGCP® for short, is a carefully processed and finely ground powder derived from green *Coffea arabica* and *Coffea robusta* beans respectively. Because WGCP® is made from dried, unroasted whole green coffee beans, it contains all of the valuable ingredients from the beans – in contrast to roasted coffee or green coffee extract. WGCP® therefore is high in amino acids, quinic acids and chlorogenic acids as well as antioxidants, minerals and fiber ...

REGULAR SECTIONS

Editorial 347
Imprint 348
Peer Review Board 363
New Product Launches 366
Business News 368
Business Contacts 375
Market Price Report 376
World of Fruit Processing 379



Orange Juice Futures – predictably irrational?

| Citrus Crop | FCOJ | Futures | Orange Juice |

Some poignant words of wisdom are always an excellent way to start an article.

“The best way to predict the future is to create it.” – Abraham Lincoln

To a degree, I am sure this statement has some truth to it, but how do we test its validity? Surely the future depends on your perspective, where you are right now and where you would like to be. Let us try and explore this concept further with an example closer to our frame of reference.

Orange juice and hurricane Irma

Back in September 2017 major devastation was caused by hurricane Irma as it plowed its way through Puerto Rico and then into the heart of the Florida’s citrus growing region. Fruit trees were battered, animals drowned and the subsequent flooding was widespread. Below is a news extract released by one of our analyst in the aftermath of the storm. Can we use this information to predict the future price of orange juice?

“Orange concentrate prices on ICE in New York have risen 13 % in September, following the damage caused by hurricane Irma to orange grooves in Florida. In the aftermath of the hurricane, a significant loss of fruit has been reported by orange farmers in Florida, the main orange producing state in the US.

While most trees survived the adverse weather, the fruit drop has been extensive, with some farmers claiming up that to 75 % of their fruit could be lost. Overall, based on initial estimates, between 25 % and 35 % of fruit could be lost in Florida this year due to hurricane Irma.” – Source: Mintec analyst

On the 4th of October, a subsequent report issued by from Florida’s commissioner of agriculture – Adam Putnam, upgraded this view to 75 % of revenue from citrus crops could be lost, close to \$0.76bn.

Overall the commentary from the analyst is factual and the new information from the commissioner is already setting the scene for what will happen as he quantified the situa-



Surveys citrus groves damaged by Hurricane Irma

© Commissioner Adam H. Putnam

tion with a cash value. Intuition tells you that prices for Florida Juice must go up. So, what should a buyer do? Should the buyer pay a higher price right now to protect from further increases or should they wait to see what will happen?

Market experts

Even though the article was balanced and fair, the problems start to occur when the facts are interpreted, extrapolated and then communicated by industry experts and speculative traders.

To see how this happens just follow live commentary on news channels and you can watch experts contextualise price movements and deliver their opinions in a confident and authoritative manner. These opinions may well be used by traders to take a position. My warning is that market experts tend to be wrong.

In their defence, many experts may understand the underlying principles of how many different commodities and stocks operate, but as humans they have limitations – they can't know everything. The mechanism they rely on in these situations is to utilise past experiences of similar situations and to use their intuition rather than facts.

One memorable example that springs to mind relates back to the day that Osama bin Laden was killed. The world stock markets described this as a 'positive sign' and they rallied and stock prices increased. Several hours later the markets flat lined and was explained that 'fears of reprisals' caused the market to recede. World sentiment certainly does not change that quickly, what happens is that traders are making bets on the future.

These speculators are gambling. There are two sides to a trade, so one party will always lose (more research should be performed on trading performance and it appears the best traders are the luckiest traders). One point that is worth making here, over a long period of time market prices will normally regress to the mean.

Knee jerk reactions

Coming back to market news about Florida and the orange crops – the news is not good. Bad news tends to illicit stronger emotions. As people are naturally loss adverse this enables the markets to be highly volatile under these types of conditions. In some cases, the news is corroborated and the outlook can often turn out better than first predicted. So, before you panic and take any gambles there are several factors that would require further exploration.

- Who trades orange juice futures contracts?

- Where is our orange juice purchased from?
- How much of our volume has been contracted forward?
- Do we have dual origin supplier's agreements in place?
- Can we pass any price hikes directly down the supply chain?

Bad news in the market place will already have an effect on you and your decisions. Traders will inevitably force prices up, as some people take their market position driven by how bad the news is.

There is some good news though, if you are in Europe, you are probably buying your FCOJ from Brazil and the Florida hurricane should not affect your prices too much (unless the origin is Floridian). So, if it does not affect you directly, my suggestion is to ignore it.

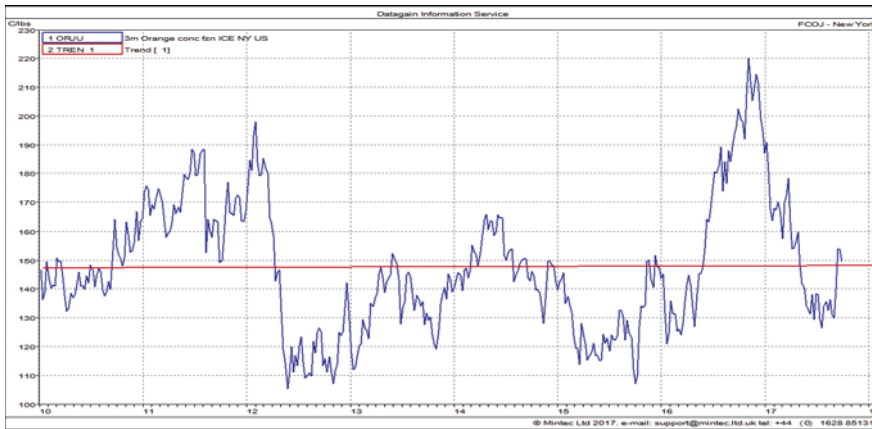
Using probability on the orange juice future market

The real use of the futures market from a buyer's perspective is that it can be used as a risk mitigation tool. Prior to the arrival of Irma, orange juice futures prices were in the doldrums – at close to 5 year lows. Probability dictates that when markets have been consistently low there is a greater chance that prices will increase (regressing to the mean). Good risk management policy enables you to understand the financial implications of prices rises to your organisation. Price increases tend to be far more damaging to a business's profitability than compared to a price decrease, which might affect the company's competitive position. So, on this basis, a US bottler or a retailer should already have taken advantage of low prices and contracted their volume for multiple years. As an aside allow me to explain the futures markets in more detail.

The History of futures

During the 19th Century, Chicago was hugely popular with grain traders due to its positioning, on the edge of Lake Michigan. These dealers traded in "spot" grain, with immediate delivery of the crop for a cash settlement. As the trading thrived, agreements were made for exchanging at fixed dates set in the future – a forward contract. This meant both parties knew the size and cost of the transaction and trading became easier. It also meant that the loans needed (as exchanges were now being done through an intermediate party) were cheaper and easier to acquire.

Traders needed grain to become fungible – i.e. each corn contract had to be exactly equal to another corn contract so standardisation was introduced. Thus, commodity exchanges were born, the largest of which was the Chicago Board of Trade (CBOT). Here a fixed structure of classification was used with set contract sizes and qualities of



FCOJ – New York

© Mintec Ltd

grain. This trading board also allowed for mutual trading of contracts, both spot and forward.

By the 1850s traders began to exchange these forward contracts prior to delivery. Rules were introduced to govern these to ensure traders were delivered. With the introduction of offsetting introduced, the modern-day futures market was born in the 1870s.

Hedgers vs. speculators

To ensure liquidity in the market (the futures price is to follow the spot) a large volume of trading is required. This trading is completed by two types of parties – hedgers who plan on buying and selling to counteract market changes, and speculators who use the market changes to make money (but are not involved directly with the cash commodity).

Speculators are required to ensure this liquidity and make up a large quantity of the trading. As a result, in volatile times, the futures price can be largely about speculation, brought about by a selection of important traders and their view of the coming market. All deals are paper transactions and only on contract maturity is a physical delivery expected.

Creating the future

It was mentioned previously that the value from a buyer's perspective depends on the relative price positions in a market and that buyers should take advantage when prices

are low. Please remember that buyers are NOT market traders or speculators, they want to buy at a low cost. However, minimizing risks is still an important factor.

The futures market can be used to protect corporate positions and there are potential gains to be made if the future markets move upwards.

Final thoughts

Going back to the original question; the answer is yes, you can create the

future. It may be a version of the future that will probably never come into fruition as experts have egos, investors can be irrational, the futures market is made up of buyers and sellers that both have opinions and people in general are loss adverse. Once you understand all the factors, figures (not opinion) and mathematics (learn about regression to the mean), you can plan to play the game but with a greater knowledge of how the other participants are thinking.

Upon finishing this article, I was reminded of a book written by Dan Ariely, an M.I.T economist, titled 'Predictably Irrational'. It explores the market approach you can take to understanding people through a set of assumptions. Once you understand both the coherent and irrational sides of yourself and other people you can eventually make better decisions.

Let's finish in a similar vein with a quote from Dan.

"We all think that in the future, we are wonderful people. We will be patient, we will not procrastinate, we will exercise, we will eat well... The problem is we never get to live in that future. We always live in the present." Dan Ariely



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Time to get radical? New technology is needed to hit the sweet spot in the food industry

| Disruptor™ | Dynamic Cellular Disruption® | Enzymes | Fruit Juices | Sugar |

Essential disruption and overhaul of the entire food and beverage manufacturing sectors must happen to face the future of food. Investment into existing processing structures is fruitless. States Roy Henderson, CEO of Green Cell Technologies®.



Roy Henderson, CEO of Green Cell Technologies®.
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As of September 2017, planet Earth is home to over 7.5 billion people. That's an awful lot of mouths to feed. It's especially scary considering it does not take into account the fact that raising animals for food, (including land used for grazing and land used to grow feed crops) now uses a staggering 30 % of the Earth's land mass.

While urbanisation is seeing people herded into high-rise buildings to accommodate our expanding population, available agricultural land is still shrinking and with it, our ability to effectively feed everyone. So, it doesn't really matter where we live if there is not enough food or water (or fruit juice).

According to the UN Food and Agriculture Organization, the world will need to produce 70 % more food in 2050 than it did in 2006, in order to feed the predicted 9 billion by 2020. How do we get around feeding more people and animals with less food? How do we prevent increasing the burden on already over stretched health care systems from a lack of food or poor food-choice related illnesses?

How do we plan for a world where we can no longer rely on weather patterns to guarantee the same yields? Should we solely consider solutions to increase the amount of food produced? Or should we consider the system as a

whole and also turn our attention to how we are processing and manufacturing our food stuffs?

(Paradoxically, the more people we feed, the more food wastage there will be, considering current food wastage is roughly one third of the food produced – 1.3 billion tons per year as per the FAO. An overwhelming percentage of this wastage is generated by current manufacturing methods, and this figure can easily double if we do nothing about changing how we make our foods.)

4th industrial revolution is here

The answer to my mind at least, goes beyond developing new ways to grow food, bugs and grubs and the creation of scientifically enhanced food-materials. It also needs to incorporate a radical overhaul of the current food and beverage processing systems and machinery. We need to be bold and embrace new thinking and technologies.

How we manufacture mass food and beverages has not essentially changed since the old industrial revolution. The machines have just got shinier and more expensive and they still do the same thing - mash up and spit out only a portion of what is available. Often in the process, the source material is denatured presenting the consumer with a less than nutritious product.

Cost saving and bottom line growth is and always will be, a company's commercial ambit. That's business. But, business as usual is not what is needed anymore. The 4th Industrial revolution is here and it's a case of adapt or die.

Some years ago, we had the pleasure of addressing industry intelligentsia at Confructa in Cologne, where we first presented Disruptor™ technology and what we considered to be the future of fruit juice. While met with a lot of interest, some of which is translating into actuality for those brave pioneers who could envision the future. It also met resistance, challenged by purveyors of conventional high shear and pressing equipment and reluctance from the old

guard to adopt new technologies, comfortable in their familiarity. No surprises there.

Fast forward to 2017 and several trials and unfolding commercial applications later, including the manufacturing of wine, beer, spirits, sauces, agricultural and nutraceuticals products, Disruptor™ technology is once again tackling the fruit juice and fruit sugar concentrates market. What is now presented, is a workable solution that addresses the required progression of global manufacturing techniques. A key to enhance end products that will deliver greater nutrition, so we can feed more people with less, and a process that generates little to no waste, thus preventing further degradation to the environment.

Tall claims? Lofty ideals? No. Fact.

Addressing the future potential of the fruit processing industry with new technologies

The global fruit sugar concentrates market is expected to grow exponentially and reach in the region of USD41 billion by 2022.

Growth will be driven by several factors: all natural fruit sugar concentrates that can be used as substitutes in the baking, confectionary and beverage industries; increased consumer demand for more 'natural' products as we enter an era of concentrated wellness; opportunities in the natural flavourant and colourant markets that provide excellent returns and business expansion possibilities for existing players, and an increasing raft of bold newcomers, who are more nimble and able to accommodate new technologies.

Current industry reports also predict that growth will be driven by a proliferation of new flavours and expanded product ranges. We believe otherwise. Growth can be attained easier and quicker, through the adoption of new, more efficient and effective technologies that drive down manufacturing costs, while producing potentially 'healthier' end products that can also support consumer demand and marketing claims.

Realising revenue potential

To date, manufacturers are reliant on traditional 'press' methods of extraction, which typically generate huge amounts of wastage containing vast levels of sugars. This represents millions of Dollars of unrealised revenue. Old equipment and methods have reached their zenith.

With the use of Dynamic Cellular Disruption® (DCD®), through Green Cell Technologies' Disruptor™, natural sugar extraction occurs with greater ease. This happens with-



Gentle Dejuicing Solutions from GEA

Keeps the vitamins in
and the oxygen out

Keep your juice drinks and smoothies healthy and fresh with GEA's highly efficient beverage decanter. Cutting-edge technology from GEA provides a rapid non-stop processing solution for fruit- and vegetable-based drinks. Much faster than a traditional press, efficient and hermetically sealed, it keeps the vitamins in and the oxygen out. Keep your production times down and your quality up. Pulp content concentrations can easily be adjusted. Robust, economical and reliable, the beverage decanter from GEA will improve your product quality and performance.

For contact details: gea.com/contact



out the need for any added enzymes – no pectinase or amylase at all. All available sugars are extracted and are immediately available for concentrates. This is achieved in one smooth process.

Further, the natural pectin in the pumice that remains, is intact, and this opens up opportunities to easily utilise the natural pectin and on-sell to the food industry for a multitude of applications. The cellulose fibres that are left behind in the pumice are also able to be efficiently processed, and used for the baking industry, as an example.

This has enormous consequences and significance for the global multi-billion Dollar concentrates commodity market, the world fruit juice-manufacturing sector, as well as food processing that involves pectin and cellulose.

Results

The results from recent trials conducted by Green Cell Technologies® – in-house Brics measurements on apples and other fruit types in confidential trials for clients - are impressive and show further benefits down the line too.

Utilising DCD® and Disruptor™ technology means that manufacturers are now able to produce fruit juices with lower sugar content, but with similar taste profiles to their existing products and, with the added benefit of increased nourishment. This comes as a result of DCD opening up all of the plant cell structures – without the use of harmful heat or chemicals – to release all of the available nutrition. With consumers being more informed about the effect of the foodstuffs they consume and the growing demand for less sugary products, this is good news for producers and marketers hard-pressed to find novel ways to make better products, at reduced cost and with actual benefit.



Disruptor™

We have always ‘theoretically’ known what processing apples upfront, using the Disruptor could achieve, but now we can conclusively show that the use of Disruptor technology can replace the conventional press and use of added enzymes, for making juices and extracting fruit sugars.

By the numbers:

If one looks at an industry standard of 14 Brics in an apple, with the costly addition of amylase and pectinase enzymes and other now unnecessary processing aids, typical yields are 113 to 115 litres of 70 Brics concentrate per tonne of raw material used. This is the first press.

In traditional methods, a secondary processing step is also undertaken to utilise the pumice by adding water, more enzymes and heat the product to a specific temperature that needs to be retained for a period of time, then centrifugally decanted to remove more of the sugars. This then takes the yield to a typical 130 – 132 litres of 70 Brics concentrate per tonne of raw material.

However, in one simple continuous flow, the Disruptor™ achieves an average of 150 litres of 70 Brics concentrate per tonne (apples) – a 31 % increase. This is attained with no added enzymes or the increase of adulterants such as D-Galacturonic acid. DCD Concentrates can therefore command higher commodity prices for the simple reason they are unadulterated or more naturally manufactured. Couple this with the fact that it is also far more cost effective to process using Disruptor technology.

By example; If we take a basic commodity price of USD61.20 per tonne added profit, derived from using Disruptor technology, and an average of 200 tones processed per day, this would amount to an approximate USD367 200 per month extra income. These sorts of numbers would typically see the return on investment from the capital outlay of installing a Disruptor, realised in less than 18-months.

Lessons from the grapes

As already mentioned, it is not just the fruit juice and concentrates markets that can benefit from new ways to approach old problems. In a commercial trial utilising Shiraz grapes conducted in 2016, use of the Disruptor™ and DCD® conclusively proved that new technologies have their place in revolutionising and enhancing age-old traditions too.

Winemaking is essentially about extraction and manipulating the maceration process between the contact of the grape skins and the juice. Winemakers use a variety of traditional methods to promote extended extraction to ob-

tain their desired result. These could range from ‘pumping over’, stainless steel or oak or rotary tanks, or even the old school ‘punch down’. Think stomping of the grapes after the vendange - a practice that continues today, although mostly for show, as ‘modern’ machinery does the job much better.

Using the entire grape (flesh, skin, pips and even the stalk), we were able to reduce waste; increase yield, flavours and nutritional benefits (the grape seed oils are emulsified into the wine itself up front); enhance colour and obviate the need for added chemicals as DCD® inhibits unwanted micro. Like its counterparts in the fruit juice and other beverage sectors, DCD® also significantly reduces time and overall cost of manufacturing, thus removing the requirement for much of the existing equipment used in current processes.

From a technical perspective, in the ‘chemistry’ phase of the winemaking process ‘Methode DCD®’ manages the natural yeasts and moulds right up front. This minimises stuck fermentation risks and maximises inoculations allowing for the winemaking ‘artist’ to have an improved canvas on which to create their signatures. Among many incredible benefits, we believe we have created the number one solution for those cultivars that struggle with extraction, like Pinot Noir. It is also for winemakers looking to create lasting wines and those looking for grape concentrates to add to their wines to make something good much better.

Timing is everything in winemaking. In many regions around the world (and heavily influenced by climatic conditions), viticulturists often encounter phenolic ripeness but not the right sugar content. DCD® allows for the grapes to be harvested earlier and get the same alcohol content but with a greater concentration of phenolic.

Benefits of adopting a new approach – in short:

- Disruptor™ technology and the DCD® process is a simpler, cheaper, quicker, production process.
- Less processing aids, smaller footprint to do the same volume If not more
- Processing plants can be smaller and less capital intensive – using less equipment to make the same amount of end product, if not more
- Lower grade of fruit can be processed therefore reducing raw material costs and reducing wastage or dumping.
- This equally applies to any fruit sugar extraction product – from oranges, pears, grapes, and more.
- A waste stream that can be further beneficiated to generate goods with higher commodity prices
- Whole juice emulsions can be dried into powders – leaving the fibre in to increase yields and which can be



Wine alchemy team.

reconstituted at home for example, or used in a host of other applications

- Technology that can suit a multitude of different plant types and can therefore be used to process different products during off-season times, if required
- Increased revenue opportunities
- Better nutritional products
- Potential cost savings to consumers
- Food security and sustainability achieved
- The Disruptor™ is manufactured from food grade components with some of the proprietary mechanisms being pharma-grade, more than meeting regulatory standards.

The definition of madness is doing the same thing but expecting different results. Entrenched in habit, we know it's not easy to shift old thinking, but actually we do not have the choice anymore. We need a radical shift in mindset now, not tomorrow, to deal with the future fruits of our labours and our lives.

In closing, the following pithy comment from Oran Harari, business Professor at the University of San Francisco sums it up: “The electric light did not come from the continuous improvement of candles”.

Likewise, progression in providing foods for tomorrow will not come from the continued support of obsolete processes today.

Green Cell Technologies®
www.greencelltechnologies.com

The smart Sidel Super Combi brings equipment intelligence to today's production

| Autonomous Regulation | Data-driven Intelligence | Efficiency Improvement Tool | Labelling | Root Cause Analysis |

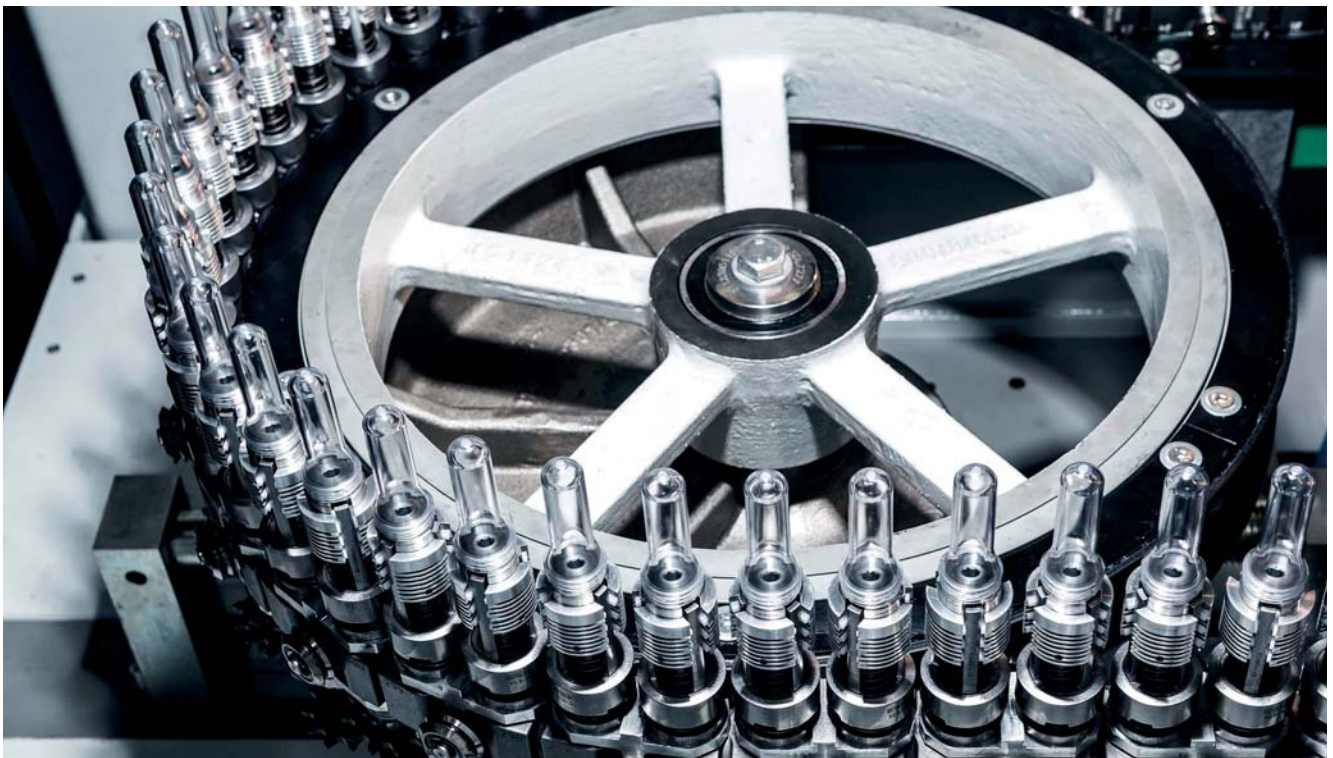
Successfully launched at Drinktec 2017, the world's leading trade fair for the beverage and liquid food industry, the Super Combi is designed and engineered as a single smart solution. It makes life easier for producers of water and CSD beverages, via integrated data-driven intelligence, making optimum performance easily and continuously achievable across the entire production process.

Sidel Super Combi is the next generation solution integrating five process steps: preform feeder, blower, labeller, filler/capper and cap feeder into an all-in-one smart system. To deliver this self-optimising performance and increased long-term value, it combines intelligent automation with innovative technologies of connected machines and data-analytics management, leading to optimised production and maintenance services.

A smarter solution for today's demands

Consumer preferences are broadening and overall demand is increasing due to unprecedented population growth, increased consumer spending power and growing demand for personalisation of products in terms of design and taste. The ability of production solutions to satisfy output requirements for new products efficiently, while implementing technologies that improve long-term viability, has become vital to manufacturers' success.

Beverage producers simply want a solution that does the thinking for them and acts on their behalf. This is where Sidel Super Combi, with its data-driven intelligence and advanced automation, provides the answers. For instance, autonomous regulation is achieved via Sidel Intelli-adjust™



© all Sidel



controlling the system's performance and automatically applying adjustments wherever they are needed. Long-term enhancement without compromising on simplified operation, reduced maintenance time and minimal downtime are all also possible thanks to intuitive interfaces such as augmented reality guidance and GPS localisation.

For instance, for improved reactivity of the operator, it has an automated alert system to provide advanced timely reports through the EIT™ (Efficiency Improvement Tool) audio and smart portables, on events such as changeovers, label or cap shortages and possible faults. Improved Root Cause Analysis (RCA) software enables intuitive intervention, making it easier for operators to solve problems quickly. Additionally, guided trouble-shooting reduces operator skill requirements and offers increased repeatability of changeover and maintenance procedures. By 'learning from experience', the Sidel InUse platform is able to predict potential failures and optimise maintenance plans. Accessible via smartphone or tablet with a dedicated mobile app – developed for both Android and iOS – the platform enables producers to share and interpret the data of connected equipment. This helps to speed up problem solving and offers the chance of timely detection of possible issues, as well as guidance for their successful resolution. The Super Combi also provides real-time access to the Sidel Big Data repository – where customer data is safely held under conditions of total cyber security – for refining its own prediction algorithms. This makes it possible to maintain, control and even improve the performance of main components and modules.

The lowest production cost per square metre

To ensure an even more sustainable production, the Super Combi has been entirely designed to minimise the use of

resources. For example, the Super Combi blower – based on the Sidel Matrix™ platform – operates at high oven efficiency and minimal environmental footprint; yet pushing the boundaries of ultra-lightweight bottle production and handling, thanks to the labelling process now integrated in the solution. Consumption of electrical power is reduced by up to 45 %, preform-heating time is lowered by up to 15 % and, with the option of AirEco2 double air-recovery, a 35 % reduction in the use of compressed air is also achieved. To further reduce the environmental footprint, the entire system is based on brushless motors. In addition, the new melter and glue control distribution on the labeller minimises the consumption. The OptiFeed® cap feeder system from Gebro Cermex, part of the Sidel Group, combines storage, elevation, orientation and high-speed feeding with energy savings, as its individual cap-elevating technology eliminates the need for compressed air and electronic fan systems during extraction.

Ergonomic, compact and easy to operate

The solution is designed for ease of operation, with its intuitive interfaces, ergonomic design and clear guidance on operations and maintenance activities for ongoing high levels of performance and uptime. Super Combi has been engineered to ensure operator access is immediate and safe, examples being the location of the preform feeder at ground level, or the labeller and cap feeder which are both designed for easier access. With the new ergonomic, compact design – up to 30 % smaller when compared to stand-alone equipment – and increased visibility of all blocks, the Sidel Super Combi makes single-operator control possible.

Safer and more hygienic

With a strict focus on hygiene, packaging quality and beverage integrity, Sidel Super Combi ensures maximum



food safety, a critical requirement for producers. Gentle handling of the preforms by the preform feeder ensure their original quality is retained. Similarly, positive handling of the bottles by the neck throughout the whole system and across a safe environment – from blowing to capping – guarantees optimal care. This enables higher bottle quality overall and maximises lightweighting opportunities. The integrated vision/rejection systems from preform to caps always ensure the best product quality, saving both raw materials and resources consumption.

Ultimate flexibility for improved uptime

The integration of innovative new technologies minimises changeovers on the Sidel Super Combi, which can be guided for improved speed and efficiency to keep the line running smoothly with minimal downtime. The simplified settings of the preform feeder, the quick release blowing moulds and a reliable high-speed reel auto-splicer, along with the sector based vacuum drum of the labeller, are just some of the ways that Sidel Super Combi makes changeovers easier and faster than ever.

Innovative labelling flexibility to minimise downtime

High-output production of beverages at high and very high speeds requires equipment that overcomes traditional obstacles to ensure continuous uptime. The Sidel Super Combi is the result of extensive innovation and improvements to the company's existing labelling technology. With different machine configurations possible based on

the output required, the new labelling process is highly efficient and provides unmatched process flexibility, the integrated labeller being able to carry out different labelling processes, including the application of PSL (pressure sensitive labels) and roll-fed labels.

The labelling process can be optimised to work with up to three stations running simultaneously or with a 'master/slave' setup, in which the one or two stations run while the designated 'slave' station remains idle – still achieving the nominal output. When a reel-change is required, the roles automatically switch. This creates a labelling process that delivers uncompromising continuous high-speed production with no product loss or reduction in speed of production resulting from reel-changes.

By utilising integrated equipment intelligence and innovative technologies from Sidel, the new Super Combi enables continuous production-optimisation and enhanced performance for producers of PET bottled water and CSD. This makes it the ideal way to maximise production and increase line efficiency while reducing TCO. It is yet another smart solution from Sidel. The next generation of water and CSD production is available now.

Sidel Group
www.sidel.com

Global trends for food, fruit and juice companies

| Agribusiness | Food | Global | Juice | Trends |

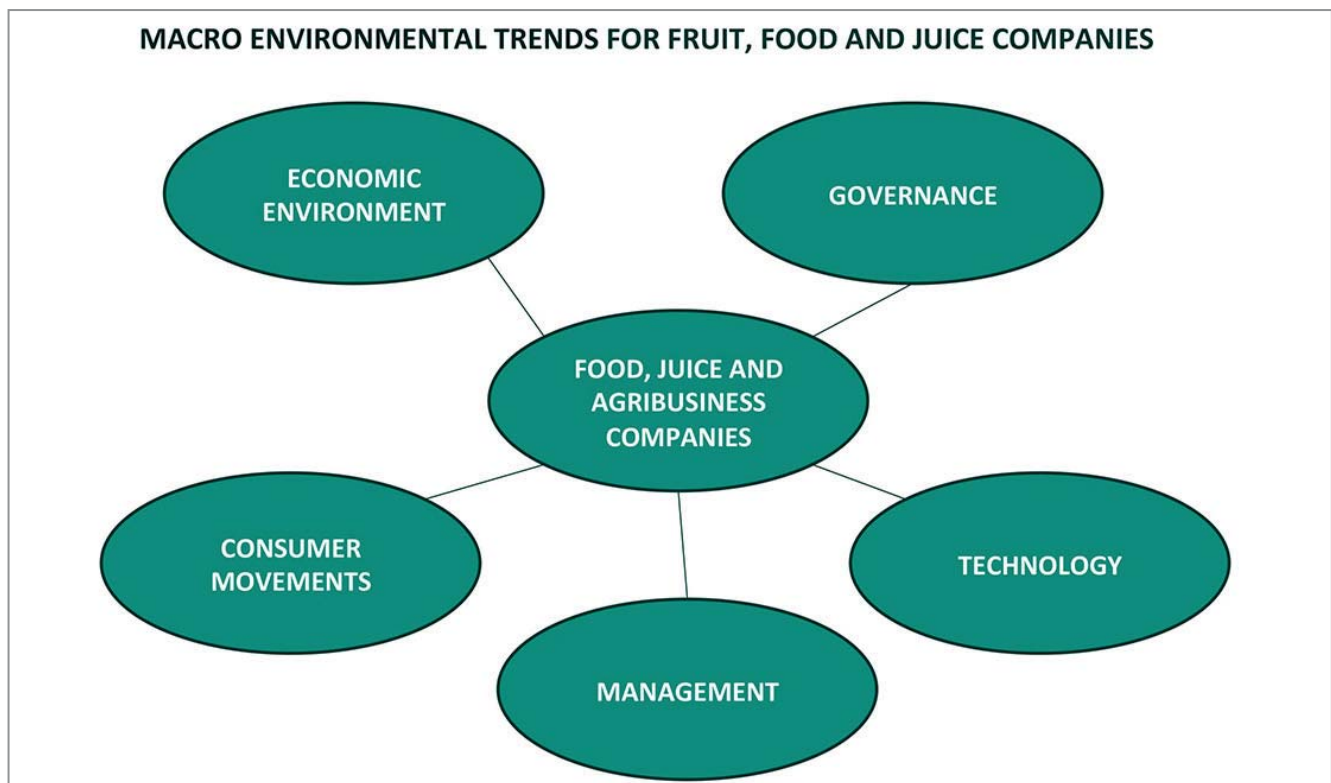
The objective in this article is to list some of the global trends happening in the macro environment of food, fruit and juice companies. I am dividing in 5 major areas, as seen in the following figure, where changes are impacting food, juice and agribusiness companies, to know: economic environment, governance, consumer movements, technology and management.

This list is far away from being complete and aims to be a contribution helping these companies to monitor some of the trends and try to find where threats and opportunities are coming in order to be prepared, react and neutralize or even take advantage. These are based on recent research, strategic plans done for food companies, board meetings and others.

a) Consumer movements

The following topics must deserve attention of food and juice companies regarding to consumer movements:

- Looking at waste, recycling, reuse, consumers giving value to circular economy;
- Worried with inclusion and social innovation (small-holders enhancement);
- Food miles (carbon emissions);
- Empowerment of “buy local” and other regional products consumption movements;
- Demanding more image information and country of origin denomination;
- Ethnic foods, artisanal products (home-made), organic and other consuming experiences;



© Marcos Fava Neves

- Increasing sophistication of companion animals (pet food);
- Slow-food movement, making meals a rest, dialogue and even thinking moments;
- Direct “farmers-to-consumers” channels (farmer’s markets);
- Multicultural: cultures differ in markets and so consumer’s behavior, diets, lifestyles, insights;
- Increasing purchasing power of consumers and choices available;
- Looking at land use (preservation) and animal welfare;
- Linked to climate change and climate related issues. Worried with carbon measurement and management (carbon footprint);
- Ethics, ethical living and responsibility,
- Wish to simplify life and time saving movements (buying time, learning how to use and others);
- Older (+ 65) population demands (will double until 2030)
- Totally connected food consumers;

After looking at consumer movements, the next topic deals with the fast changing economic environment.

b) Economic environment

The following topics must deserve attention of food and juice companies regarding to the economic environment:

- Global economic growth and development;
- Less economic borders (more agreements and trade);
- Demand growth and diet changes;
- Increasing external impacts and capacity to adapt (flexibility);
- Growth of bio-economy (biomass, bioplastic, biofuel, bioelectricity) based chains;
- Natural resources scarcity;
- Different regions productivity levels and gaps;
- Circular economy (using by-products as inputs);
- Global investors and faster capital flows (credit), with new currencies coming;
- Terrorist risks on food stocks and food transport;
- Volatility in world food prices;
- Asian and emerging driven world (70 % of world GDP in 2030);
- Searching for inequalities solution: poverty, hunger;
- Increasing value of biodiversity;
- Education as a basic source for competitiveness;
- Sharing economy (“Uber” models);
- The food bridge: from the Americas (food production) to Asia (food consumption)
- New working ways (at home, transport, part time and others);
- New sources of protectionism;
- Job insecurities;

- Public (Government) debt.

After looking at economic environment, the next topic deals with governance.

c) Governance (coordination)

The following topics must deserve attention of food and juice companies regarding to governance (coordination):

- Design, planning, performance and governance of integrated food chains;
- Increasing collaboration & relationships in chains;
- Metropolitan agricultural chains (producing in cities). Indoor farms, green roofs and other surfaces;
- Governmental/public policies interventions and regulations;
- Chain agents (intermediaries) value equation (removing value extractors);
- Growing presence of digital contracts;
- More transparent income allocation (profit-pools) and distribution;
- New types of insurances & other risk management tools;
- The evolving role of NGO’s (non-Governmental organizations);
- Governance more linked to consumer demands and obligations;

After looking at governance, the next topic deals with the fast changing technological environment.

d) Technology

The following topics must deserve attention of food and juice companies regarding to technology:

- Increasing information flows, transparency, traceability and identity preservation;
- Higher levels of innovation and entrepreneurship in food chains;
- Smart farms: digital farming everywhere with GPS guided equipment, data driven drones, analytics software, advanced equipment;
- Increasing data generation, ownership and usage;
- Convergence of industries (food and medicine, food and cosmetics and others);
- Genetically modified organisms looking at plant resistance, resource usage, productivity and consumers. Increasing use of biotech, genomics, traits; fungi, bacteria and others;
- Enhancing intellectual property;
- Natural lab produced food substitutes (food coming from different sources);
- Organic market segments and yields;

MARKET TRENDS

- Increasing number of start-ups;
- Increasing amplitude of tablets/phones and their services;
- Artificial intelligence (robots);
- 3 D printing (seeds and others);
- Energy sources (solar power and others much more accessible);
- Totally digital world and internet acceptance;

After looking at technology, the next topic deals with the management challenges and opportunities.

e) Management

Finally, the following topics must deserve attention of food and juice companies regarding to management challenges:

- Increasing levels of security (data, quality, assurance, zero contaminations);
- Look for certification movements;
- Consumer communication tools (from in person to digital platforms);
- Search for talents, skills, human resources;
- Capacity to adapt to differences;
- Increasing innovations related to services, experiences and relationship marketing;

- Diversification towards complete solutions: a chemical company to a seed company, to precision planting, to climate corporation and high-tech services;
- Increasing entrepreneurial culture, vision and mission;
- More collaborative networks of companies (integrations);
- Authenticity, ethics and openness to consumers;
- Efficient “go-to-market” strategies with increasing relationships;
- New role of influencers;

These are some of the important topics to be monitored by companies in order to expand their management capacity and to be prepared for changes in the macro environmental trends, neutralizing some threats and taking advantages of opportunities.

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Whole green coffee powder for everyday performance

| Caffeine | Energy Drinks | Flavor Concepts | Green Coffee | Powder |

Long-term energy without the “crash”

With the need for high energy levels throughout the day — at home, work or play — it’s no surprise that functional energy drinks are extremely popular. However, many users are all too familiar with the “boost & crash” effect they deliver: after the initial energy boost, the tiredness that follows is even more intense.

Taiyo’s whole green coffee powder, or WGCP® for short, is a carefully processed and finely ground powder derived from green *Coffea arabica* and *Coffea robusta* beans respectively. Because WGCP® is made from dried, unroasted whole green coffee beans, it contains all of the valuable ingredients from the beans — in contrast to roasted coffee or green coffee extract. WGCP® therefore is high in amino acids, quinic acids and chlorogenic acids as well as antioxidants, minerals and fiber.

Less caffeine, more energy

WGCP® contains much less caffeine than roasted coffee, so has fewer side-effects. At the same time, it is much more effective because the fiber and bean husks it

contains prevent the rapid release of the natural caffeine. WGCP® caffeine reaches the bloodstream gradually during a period of 6-8 hours, which is much slower than the caffeine contained in conventional coffee preparations. Its gradual release profile has also been proven: WGCP® provides the body with sustained energy without the negative side-effects associated with consumption of caffeine. If conventional coffee is consumed in large quantities, it can lead to sleep disorders, headaches, nervousness and gastrointestinal complaints.

The recommended dose of WGCP® is 3.5-5 g per serving, which equates to about 35-50 mg of caffeine in the Arabica variant. This is less than a typical cup of coffee, which contains 80-150 mg of caffeine. The average advised dosage of WGCP® Arabica needed to help manage blood glucose levels is 4-5 g. An average dose of 3.5 g of the stronger WGCP® Robusta contains 70 mg caffeine, while the highest proposed dosage of 5 g contains 100 mg caffeine.

But it’s not just the caffeine in WGCP® that is important. The innovative product acts through its entire matrix of ingredients — in particular, its chlorogenic acid. As well as having a strong antioxidant effect, this natural component has blood pressure lowering and blood glucose regulating properties. Thus, not only does WGCP® ensure long-lasting energy during extended periods of exercise, long days in the office and evening study sessions, it also boosts concentration and attention. In weight reduction too, the energy it provides can help to prevent feelings of lethargy brought on by lack of food. This has the added positive benefit of allowing increased activity, which in turn helps the body to burn more calories for further weight loss.

Natural, delicious and easy to process

WGCP® has a mild, hay-green taste that is easy to mask and integrate into appropriate flavor concepts. As it is not soluble in water, it imparts a slightly cloudy appearance. This can, however, be a positive attribute because many consumers perceive slight turbidity as a sign of natural-



Taiyo’s whole green coffee powder, or WGCP® for short, is a carefully processed and finely ground powder derived from green *Coffea arabica* and *Coffea robusta* beans respectively. © all Taiyo

FLAVOURS & INGREDIENTS

The difference between WGCP® and green coffee extract:

WGCP®	Green Coffee Extract
Comprises the whole green coffee bean	Is an extract of coffee beans and contains just a few of their natural ingredients
Contains all of the valuable ingredients from the entire green coffee bean	Contains mainly caffeine and chlorogenic acid
Contains all the amino acids, natural caffeine, antioxidants and fiber of the raw coffee bean	Contains mainly chlorogenic acid, no quinic acids, no amino acids and no fiber
Tastes less bitter than roasted coffee beans	Tastes very bitter, like roasted coffee beans
Caffeine, chlorogenic and quinic acids are organically bound to the bean matrix and are released slowly during digestion, maintaining increased plasma levels for 6-8 h	Caffeine and chlorogenic acid are in free form and immediately available. Thus, they are absorbed rapidly during consumption, leading to caffeine spikes in the blood followed by a rapid "crash"

ness. A particularly fine powder, it can also be added in stabilized form to RTD drinks such as functional soft drinks, energy drinks and smoothies, and is also ideal for instant beverages. As an addition to coffee specialties, WGCP® is a gentle way of extending their alertness-enhancing effects.

WGCP® is both heat-stable and pH-stable, and can be used as a functional ingredient in many other applications — from baked goods and frozen products to dairy foods such as yogurt and ice cream, as well as bars and protein shakes. It is also suitable for all dietary supplement dosage forms, including tablets, shots and capsules.

Dr Stefan Siebrecht, Managing Director of Taiyo GmbH, has developed numerous concepts with WGCP®. "We are thrilled by the versatility of this natural energy booster. One of our most novel concepts is a cocoa and cappuccino flavored vegan protein shake with moringa, hemp protein, pea protein, bean fiber and WGCP®. This will be on show, alongside samples of our other concepts, at Fi Europe in Frankfurt."

High quality, low temperature

Compared with conventional coffee powder, for which coffee beans are dried and roasted, the beans used in the production of WGCP® remain raw and unroasted. A patented process is used to cryo-grind the beans very finely under extreme cooling and oxygen exclusion conditions. Thus, heat and oxidation are not able to cause damage and even the most sensitive ingredients are retained. During the complex process, the beans are finely ground at 20 or 40 mesh. The advantage is that the finer the grain of the powder, the better the body can use the ingredients. Conventionally ground green coffee powder has a far coarser grain size and is therefore less effective. WGCP® is available in eight different qualities and also as an organic variant. The standard 20-mesh product has a particle size of approximately 840 µm, while the extremely finely ground 40-mesh powder has a particle size of approximately 400 µm.



WGCP® has a mild, hay-green taste that is easy to mask and integrate into appropriate flavor concepts.

Safety first

WGCP® is a raw and natural product, and nature is not normally a clean environment. All natural products contain microorganisms such as bacteria, fungi and yeasts, which can multiply and produce mycotoxins such as aflatoxins, which are detrimental to human health. Therefore, natural products need to be sterilized. Roasting coffee beans does kill microorganisms, but many unroasted green coffee products could be potentially contaminated by mycotoxins and unsafe for human consumption. WGCP®, however, is sterilized by using a unique and patented, combined low heat steaming process. This means that all of the beneficial ingredients remain intact while harmful microorganisms are destroyed, ensuring that WGCP® is 100 % safe for human consumption.

Taiyo GmbH
www.taiyogmbh.com

NEW PRODUCT LAUNCHES



CANADA

Product: Tropicana Pure Premium Orange Juice
Company: Tropicana
Country: Canada
Category: Juice & Juice Drinks
Event Date: September 2017
Price: USD 5.38 EUR 4.47



Description: 100 % pure and natural orange with added calcium and vitamin D, in a 2.63L plastic jug.
Claims: Contains 110 calories per 250 ml. Helps build strong bones. Source of calcium and vitamin D for people, osteoporosis Canada. Pure premium. Certified kosher. Pasteurized. Never from concentrate. Specially designed as a source of calcium and vitamin D for people who do not drink milk. Recyclable packaging.
Ingredients: 100 % pure not from concentrate orange juice, calcium citrate malate, vitamin D.



CANADA

Product: Oxy-3 Raw And Organic Cold Pressed Juice
Company: Jus Dose
Country: Canada
Category: Juice & Juice Drinks
Event Date: August 2017
Price: USD 4.14 EUR 3.44



Description: Oxy-3 raw and organic cold pressed juice made from apple, cranberry, blueberry, haskap and camu camu. Oxy-3 combines the antioxidant powers of three locally harvested berries and camucamu, which packs more vitamin C than any other fruit. Keep your immune system running smooth throughout the cold season.
Claims: Seasonal. Certified organic by EcoCert Canada. USDA Organic. Non-GMO. Recyclable packaging. Never heat pasteurized. Up to 2 lbs of produce. Mother Nature's sports drink. Pressed twice. Cold pressed and pasteurized to seal freshness.
Ingredients: Apple*, cranberry*, blueberry*, haskap*, camu camu*; *Certified organic.



CHINA

Product: Jinshantang Enzyme Fruit Juice
Company: Beijing Jingshantang Beverage
Country: China
Category: Juice & Juice Drinks
Event Date: September 2017
Price: USD 1.32 EUR 1.14



Description: Fermented fruit juice drink in a 300ml PET bottle.
Claims: Contains enzyme. With fresh fruit taste. Recyclable packaging.
Ingredients: Drinking water, guava, pineapple, apple, passion fruit, grape, rock sugar, honey, fructose syrup.
Extra Notes: Shelf life: 12 months. May have pulp sediment.



CHINA

Product: Lactic Acid Water With Honey Flavor
Company: Want Want
Country: China
Category: Bottled Water – Flavored
Event Date: August 2017
Price: USD 0.30 EUR 0.26



Description: Lactic acid water with honey flavor, in a 450ml plastic bottle.
Ingredients: Water, white sugar, fructose syrup, honey (280 mg/kg), peach juice concentrate, whey fermented liquid, white granulated sugar, whey powder, thermophilic streptococcus, edible salt, food additive (citric acid, sodium citrate, DL-malic acid, lactic acid), food flavor.
Extra Notes: Shelf life: 12 months.



JAPAN

Product: Yamamori Diet Black Vinegar Drink: Yogurt
Company: Yamamori
Country: Japan
Category: Other Soft Drinks
Event Date: September 2017
Price: USD 6.14 EUR 5.08



Description: Black vinegar drink blended with yogurt, in a 500ml glass bottle.
Claims: Lactic acid bacteria M1. Contains 10 billion lactic acid bacteria per 1 cup (33ml). Mix with 3 times water. Recyclable packaging.
Ingredients: Rice vinegar, sugar, galactooligosaccharide, lactic acid bacteria dry powder (sterilization), fragrance, sweetener (sucralose).



PHILIPPINES

Product: Pomelone And Lasting Love Locally Blended Juice Drink
Company: Nutriasia
Country: Philippines
Category: Juice & Juice Drinks
Event Date: August 2017
Price: USD 0.85 EUR 0.68



Description: Natural homegrown pomelo blended juice drink, held in a glass bottle.
Claims: With Vitamin C. Eco friendly glass bottle. Made with natural homegrown fruits. Filipino flavors.
Ingredients: Water, pomelo puree, sugar, citric acid (E330) potassium sorbate (E202), cloudifier (coconut oil emulsion), ascorbic acid (E300), nature-identical pomelo flavor, xanthan gum (E415), sucralose (E955) and FD&C Red 40 (E129).

NEW PRODUCT LAUNCHES



SINGAPORE

Product: Madecold Mango Sticky Rice Cold Brew Tea
Company: Madecold
Country: Singapore
Category: Plant Based Waters
Event Date: September 2017
Price: USD 4.13 EUR 3.41

Description: Ready-to-drink cold brew tea with mango sticky rice flavor, in a 330 ml glass bottle.

Claims: Collaboration with Ette tea.

Ingredients: Distilled water, black teas, dried coconut, genmaicha, mango..



SINGAPORE

Product: Sealand Birk Organic Birch Water: Watermelon
Company: Sealand Natural Resources
Country: Singapore
Category: Plant Based Waters
Event Date: September 2017
Price: USD 3.68 EUR 3.04

Description: Organic birch water with watermelon flavor, in a 300 ml plastic PET bottle. Sealand Birk Organic Birch Water contains birch water harvested from the birch forest with infused fructose syrup. Sealand Birk Organic Birch water is a very refreshing, slightly sweet liquid. Enjoy Sealand Birk Organic Birch Water as the original taste or mixed with watermelon flavor.

Claims: Birch water is harvested and tapped once a year in early spring, before the trees get leaves. USDA organic. Recyclable packaging.

Ingredients: Birch water (organic), infused fructose syrup (organic), acid (ascorbic acid and citric acid), watermelon flavor, pasteurized.

Extra Notes: Shake gently, enjoy cold, keep chilled and consume within 5 days, once open. Store dark and cool, color may change in liquid.



UNITED STATES

Product: Kor Shots Wellness Ginger Cold-Pressed Juice
Company: Kor Shots
Country: United States
Category: Other Soft Drinks
Event Date: August 2017
Price: USD 3.99 EUR 3.31

Description: Organic cold-pressed ginger juice for wellness, in a plastic PET bottle.

Claims: USDA organic. The original raw shot. Raw organic ginger juice. Raw organic lemon juice. Raw organic coconut juice. Raw organic cayenne pepper. 100 % juice with added cayenne. BPA free. High pressure processed. Cheers to health. Recyclable packaging. Certified organic by ASCO.

Ingredients: Coconut water*, lemon juice*, ginger juice*, cayenne pepper*; *Organic ingredients.

Extra Notes: Perishable. Keep refrigerated. Shake me, shoot me, feel me. Contains tree nuts (coconut).



VIETNAM

Product: Justcool Chia Seed Drink: Banana Flavor
Company: Just Cool
Country: Vietnam
Category: Other Soft Drinks
Event Date: August 2017
Price: USD 0.90 EUR 0.74

Description: Chia seed drink with banana juice, in a 160 ml glass bottle.

Claims: Chia seed healthy drink. Green Dot Certified.

Ingredients: Chia seed, banana juice, sugar, gellifier (E418), water, citric acid (E330), color (E102), banana flavor.



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.

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For more details and more products please contact:

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Apples that don't go brown now available in US supermarkets



CSIRO scientists constructed an anti-PPO gene which, when inserted into plants, blocks the production of PPO and therefore stops the browning.

© Okanagan Specialty Fruits

This month, a special kind of sliced apple will go on sale at select US supermarkets, and thanks to CSIRO research these apples won't turn brown when they're cut, bitten or bruised.

Arctic® apples, have been developed by Canadian biotech company, Okanagan Specialty Fruits Inc. (OSF).

OSF is the first company to license CSIRO's non-browning technology.

Their first product will be snack-sized bags of fresh Arctic® Golden apple slices, with more non-browning varieties expected in future years, including Granny Smith and Fuji.

While there may be other sliced apple products already on the market, these are often coated with vitamin C and calcium to prevent browning and to preserve crispness, and this can change their taste.

Apples and other fruit and vegetables turn brown after they are cut or damaged because of a naturally occurring enzyme (polyphenol oxidase or PPO) that reacts with other components in the fruit cells when these cells are 'broken', producing a brown pigment.

CSIRO scientists constructed an anti-PPO gene which, when inserted into plants, blocks the production of PPO and therefore stops the browning.

Spoilage due to browning costs food processing industries worldwide millions of dollars each year in wastage and costly chemicals to prevent the reaction.

This non-browning technology has potential to reduce waste not only in apples and potatoes but also in other important horticultural crops, such as beans, lettuce and grapes where produce with only small injuries could still be sold.

Erbslöh receives the IFU Innovation Award 2017

On 4 October 2017 the team from Erbslöh's Fruit Processing division were awarded the IFU Award 2017 for their innovation at the Juice Summit 2017 gala dinner in Antwerp.

The prize was awarded for development of the concept for vegan fining and stabilisation of fruit juices and fruit-based beverages. The combined application of FloraClair® and Tannivin® Galléol has become successfully established in practice as a substitute for conventional gelatine-colloidal silica fining. There are many advantages to using the concept instead of gelatine. One is that it is virtually impossible to overfine with the combination of FloraClair®



IFU Innovation Award 2017

© Erbslöh

and Tannivin® Galléol, which means it is safer to use. Another is that the new concept makes it possible to focus on new customer groups, without the need to invest in costly technologies, as a result of the reliable production of vegan products. Furthermore, the fruit juice produced remains a pure phyto product, which fully complies with the demand for vegan, halal and kosher-certified products. The IFU (International Federation of Fruit Juice Producers) recognised these outstanding practical advantages and honoured the Rheingau beverage specialist's employees for this achievement.

Refresco and a consortium of PAI and bcIMC agree on a recommended cash public offer of EUR 20 per share for all shares of Refresco

With reference to the press releases of Refresco Group N.V. on 3 October 2017 and 17 October 2017, PAI, bcIMC and Refresco jointly announced that they have reached conditional agreement on a recommended, fully funded, public offer by a consortium of PAI and bcIMC, acting jointly through Sunshine Investments B.V. (“the Offeror” or the “Consortium”) for all the issued and outstanding ordinary shares of Refresco (the “Shares”) at an offer price of EUR 20 (cum dividend) in cash per Share (the “Offer”).

The Offer Price represents a premium of approximately 22 % to the Average Share Price, a premium of approximately 41 % to the April Share Price, and a premium of approximately 38 % to the Refresco IPO price. The Offer Price values 100 % of the Shares at EUR 1.623 billion and equates to an Enterprise Value of approximately EUR 3.3 billion, which implies an EBITDA multiple of 8.5x post Cott TB synergies for the twelve-month period ending 30 June 2017.

The Offer provides Refresco’s shareholders with a fair price for their Shares including an attractive premium. The Consortium has fully committed financing in place on a “certain funds” basis and has completed its due diligence, providing high deal certainty and facilitating a swift and efficient transaction process to completion.

Hans Roelofs, CEO of Refresco: “This Offer represents a fair value for our shareholders and is yet another milestone for the Company. The Consortium fully supports our strategy and with its track record, financial strength and understanding of our business, they can support the Company whilst we accelerate our growth plan going forward.

Obtaining a public listing in 2015 was a well-considered decision and it has brought the Company many opportuni-

centrimax ■ ■ ■

USED // FACTORY REBUILT



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Centrifuges, separators and decanters from GEA Westfalia Separator, Alfa Laval/Tetra Pak and Flottweg

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- Delivery with warranty
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ties. However, we have also grown and prospered under private equity ownership. Our ownership structure is never a goal in itself. Rather, our focus remains on being in an environment that allows us to continue executing our proven strategy of buy-and-build.

The first time PAI approached us was prior to our public listing in 2015. They have always been impressed by our business and performance, and the agreement reached today reflects the important steps Refresco has realised since the IPO. Our latest acquisition of Cott TB, creating the world’s largest independent bottler with leadership positions across Europe and North America, is a truly transformational acquisition right at the heart of our buy-and-build strategy.

We are convinced that this is a good transaction for the Company and all stakeholders involved and we therefore recommend our shareholders to accept the Offer. Our focus of growing alongside our customers in the markets where we currently operate and expanding geographically remains unchanged. I look forward to this new phase of private ownership, and for all our employees and customers to capitalize on the opportunities ahead of us.”

United Caps takes over the plastic closures division of Closures4you

United Caps, an international manufacturer of high performance plastic caps and closures, announced today that the company is taking over the plastic closures division of Closures4you. The takeover offer includes 28 mm caps for re-usable glass bottles and for disposable PET bottles.

This latest acquisition is part of United Caps’ comprehensive growth strategy. In June 2017, the company announced the takeover of cap and closure manufacturer Dewit Plastics. In the case of Closures4you, the plan is to ensure

future market supply from the United Caps plant in Schwerin. The takeover will make available capacity for a new closure design to replace some previous closures. To ensure a smooth transition in terms of customer supply, Closures4you will make its closure capacities available through the end of March 2018.

Cups4you, the former parent company of Closures4you, headquartered in Oss in the Netherlands, is the European specialist for thin-wall injection moulded packaging with a capacity of 100 to 2500 ml for the food industry.

New high-pressure gauges qualified as the first in accordance with DIN 16001



High-pressure gauges.

© WIKA

WIKA has launched a new generation of high-pressure gauges. These are the first instruments of their kind which have been constructed and qualified in accordance with the new DIN 16001 high-pressure standard.

Sports cap takes convenience and safety to a new level

RPC Massmould in conjunction with RPC Astra Plastique (Global Expert Centre for Flip Top Sports Closures) have developed and industrialised a next generation sports cap that breaks new ground with its combination of enhanced consumer convenience and maximum product safety and integrity, along with a contemporary design.

The new Secure Flip Sports Closure features intuitive one-handed opening via an ergonomically designed Thumb Tab. The cap opens to a full and stable 180°, providing easy and comfortable access for the consumer to drink from the closure spout. An audible click confirms that the cap is either fully open or re-closed.

The Sustainable Tamper-Evident Band within the closure breaks on first opening. Importantly, unlike other sports caps that feature a detachable tab which then has to be thrown away or in many instances simply dropped on the floor, both parts of the Secure Flip tamper-evident band are retained within the closure.

A second tamper-evident Tuck Under Band on the base of the closure features a series of individual upstands that are revealed when it is unscrewed from the bottle. Some of these are pushed outwards when the closure is replaced to provide a visual indication that the bottle has been opened. This overcomes the problems usually associated with creating effective tamper evidence for lightweight neck finishes. The Tuck Under Band design also aids alignment with the capping machinery for optimised efficiency on filling lines.

The marking in accordance with DIN 16001 certifies to the operator that no hazard will arise from these measuring instruments, even in critical situations. They fulfil standard-defined criteria of the category “S3” (safety pressure gauges with solid baffle wall).

With the new pressure gauges, the operator has a solution matched to each high-pressure application. The model PG23HP-P features scale ranges of up to 6,000 bar and a high indication accuracy of up to class 0.6 %. Its load cycle stability lies clearly over the requirements of the standard and is even maintained with dynamic pressure profiles. The PG23HP-S version has been designed for lower measuring and accuracy requirements.



Secure Flip Sports Closure.

© RPC

A further safety device is the unique Triskeles, a three-legged feature within the mouth of the closure that prevents items being dropped into the drink or small fingers getting stuck in the opening.

High-tech, high speed manufacturing at RPC Massmould has enabled the Secure Flip closure body to be moulded in the closed position, allowing it to incorporate an innovative IP protected hinge for a more compact overall design and enhanced aesthetics on-shelf.

Secure Flip is currently available in 29.25 and 18.81 neck finishes and can be customised to individual customer requirements with unique colours associated to particular brands and products.

Wavesafe has can hygiene covered

WaveGrip has launched another multi-packing innovation that provides enhanced hygiene protection for cans throughout the entire supply chain.

WaveSafe is the world's first covered flexible multi-pack carrier for cans. In addition to the advanced WaveGrip carrier it features an additional layer of recyclable and photodegradable PE material, which covers the top of the cans. This provides protection from dust and debris, giving consumers peace of mind that the drink has remained safe and hygienic from the factory to their hands.

Previously manufacturers had looked to collation shrink to ensure the can's hygiene. WaveSafe delivers this with reduced materials and expense and in particular does not obscure the primary can packaging. In addition, WaveSafe also offers a significant point of difference to brand owners. The new carrier style will stand out on-shelf and with the ability to link with the range of WaveGrip Colours ensure that branding is further enhanced, maximising on-shelf impact and consumer appeal.

The many benefits and features of the standard WaveGrip Carriers also apply to WaveSafe, making it the most



WaveGrip has launched another multi-packing innovation that provides enhanced hygiene protection for cans throughout the entire supply chain.
© Wavesafe

efficient collation carrier available for application as well as being environmentally-sustainable. Compatible with all WaveGrip applicators, WaveSafe is accessible for all beverage manufacturers, from smaller artisanal producers to high volume operators.

Direct Print Powered by KHS™ certified and fully recyclable

Until fairly recently it was impossible to imagine that printed bottles could find their way into the recycling process. However, the research carried out by KHS and its partners on development in this field has since paid off: Direct Print Powered by KHS™ has again been granted interim certification from an official body. The recyclability of the award-winning direct printing process was first certified by the EPBP in 2013 and has now been reconfirmed. This means that an independent organization has clearly attested that PET bottles processed by Direct Print Powered by KHS™ have no negative impact on the rPET and are thus officially approved for bottle-to-bottle PET recycling.

During development the experts had to overcome one specific challenge before the printed containers could be certified for the recycling process. “The washing water



Direct Print Powered by KHS™.

© NMP Systems

must not be contaminated during the recycling process,” explains Martin Schach, head of the Printing Technology Department at KHS GmbH. “The ink must also not deposit itself on the crushed PET bottles.” KHS has managed to develop a digital printing process with low-migration, LED UV-curing inks for the food-safe decoration of PET bottles where the print reliably flakes off during the recycling process.

The EPBP is a voluntary, industry-related initiative which provides PET bottle design guidelines for recycling, among other information.

It assesses new PET packaging systems and technologies as regards their effect on the recycling process and tests and certifies these according to strict guidelines. The EPBP also supports the European PET value chain in its striving for greater economic and ecological sustainability.

Sensient presents innovative taste modulation and protein masking solutions



Sensient Natural Origins™ is a comprehensive range of authentic “true to nature” extracts.
© Sensient

shakes or snack bars, the main challenge in product development is to mask the unpleasant taste that many proteins deliver. The experts at Sensient have developed innovative protein masking solutions that work with proteins from all sources as well as with protein blends. Using these solutions, manufacturers can improve the taste profile of their products by eliminating off-notes and even improving the unpleasant mouthfeel that some proteins display. The proprietary masking technologies allow for natural, non-GMO, allergen-free and kosher labelling – always in line with the customer’s products and needs.

FiE 2017: On stand Nr. o8.oC21, it’s all about better taste: Sensient Flavors showcases masking solutions for proteins, sweet solutions to support sugar reduction, its “All natural Collection” of extracts and flavours – and with Petrichor and Cucamelon flavours, two industry exclusives.

With its “Sweet Solutions”, Sensient Flavors supports sugar reduction concepts in various beverage, bakery and dairy applications. The range helps to maintain the full sensorial perception in the end product, even if sugar is significantly reduced. Without the need to change the labelling, Sensient Sweet Solutions can help to create pleasant sugar reduced still or carbonated drinks, from tea-based to fruit-based and many more, as well as a wide range of sweet products such as cookies, wafers and biscuits and yoghurt.

Protein masking – for delicious functional products

As the major trend in the food industry, protein has many benefits and helps to enhance the nutritional profile of numerous products. But whether it’s sports drinks, diet

Capturing the true flavour

Sensient Natural Origins™ is a comprehensive range of authentic “true to nature” extracts that come from the named source and thus fulfil the highest expectations. The Sensient Natural Origins™ botanicals collection includes herbs such as hop, basil and sage, spices such as cardamom, saffron and pink pepper, as well as a broad variety of dazzling floral notes such as cherry blossom, lavender and chrysanthemum. A highlight of the range is the ginger collection. These powerful extracts add a rich taste of different ginger profiles, including the exotic and powerful Chinese ginger, and the spicy Nigerian ginger.

On the stand, visitors will be able to experience Sensient’s “Trends to Taste” programme and sample two surprising flavours. Petrichor – the scent of rain on dry earth – and Cucamelon, a Mexican miniature watermelon with a surprising lime and cucumber taste. Also ready to be tasted will be new drinks concepts: A sugar reduced still drink with botanical flavours, a carbonated ginger beer with Sensient Natural Origins™ ginger extract and a botanical based alcoholic cocktail.

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Hot lifestyle trend: Turmeric attracts new target groups

A hot trend is currently conquering coffee shops: Curcuma Latte. This “golden milk”, the other name for this beverage, guarantees a perfect start to the day. This is due to the positive effects of turmeric. The Asian power tuber, also known as Indian saffron, has been used for more than a thousand years in Far Eastern medicine. In Europe the healing plant was primarily known as a spice or as the main ingredient in curry powder. Various studies have since confirmed the health-promoting action of its main constituent, curcumin. It has anti-oxidative and anti-inflammatory properties. It boosts the metabolism and can help with weight loss. According to more recent studies, curcumin is said to protect against cancer and Alzheimer’s, too.

No wonder turmeric is so much in demand. SternLife is now presenting innovative products based on this Indian saffron powder. Suppliers of lifestyle, health, fitness and sports nutrition products can now add them to their portfolio.

Curcuma Latte for different target groups

Curcuma Latte with protein is a special drink for athletes and fitness enthusiasts. With its high protein content of 71 percent, it enhances the effects of training. Whey protein

concentrate and isolate are the protein sources. The drink, with its delicate vanilla flavour, can be prepared with water, milk or plant-based milk alternatives. The practical portion size of 20 g powder is simply stirred into 200 ml warm or cold liquid.

The new, vegan Curcuma Latte is ready in no time, too. The instant powder is enriched with the dietary fibre, inulin. As the powder doesn’t contain any sugar or sweetening agent, it can be sweetened with agave syrup or something similar to cater for individual preferences. The powder is also very well suited for enhancing plant-based yoghurt and curd alternatives. Just like the protein shake, the vegan lifestyle drink contains cinnamon, ginger and pepper, in addition to curcuma, to boost the metabolism.



New, vegan Curcuma Latte.
© SternLife

Ocean Spray introduces organic 100 % juice blends and pure cranberry (unsweetened) 100 % juice



100 % organic juice blends.
© Ocean Spray

Ocean Spray, an agricultural cooperative owned by more than 700 cranberry farmers, announced that it has added two beverage lines to its extensive product portfolio: Ocean Spray® Organic 100 % Juice Blends and Ocean Spray® Pure Cranberry (Unsweetened) 100 % Juice.

per serving and each 8-ounce glass is equivalent to one cup of fruit. An 8-ounce glass of these blends contains 100-130 calories, depending on the flavor.

For the pure, authentic taste and unique health benefits of the cranberry, Ocean Spray’s Pure Cranberry (Unsweetened) 100 % Juice contains no added sugars¹, artificial flavors, preservatives or colors and is non-GMO. Each one-liter bottle provides the health benefits from the juice of more than 900 cranberries! An 8-ounce serving is only 60 calories and is equivalent to one cup of fruit to support daily nutritional needs. The juice can be enjoyed on its own or added to smoothies or sparkling water for an extra health boost.

Ocean Spray® Organic 100 % Juice Blends are the perfect combination of organically grown North American cranberries from family farms, with other organic fruit juices. Organic 100 % Juice Blends contain no added sugars, preservatives or artificial flavors and are available in three delicious flavors: Cranberry, Cranberry Apple and Cranberry Blueberry. All Ocean Spray® Organic 100 % Juice Blends are non-GMO and feature the USDA Organic seal (certified organic by QAI). Each flavor has 100 % Vitamin C

Ocean Spray® Organic 100 % Juice Blend and Ocean Spray® Pure Cranberry (Unsweetened) 100 % Juice are available nationally in the US. The suggested retail price of Ocean Spray® Organic 100 % Juice Blends is \$3.99 per 1 liter bottle, while Ocean Spray® Pure Cranberry (unsweetened) 100 % Juice is \$5.98 per 1 liter bottle.

Anthem Worldwide refreshes Magners brand for APAC, launches newly designed range as well as new juicy apple flavour



Anthem Worldwide, a global creative agency that actively connects brands with consumers by amplifying desirability from package design to brand campaign to drive brand performance, has partnered with Magners to refresh its cider range across APAC..

©Anthem

Anthem Worldwide, a global creative agency that actively connects brands with consumers by amplifying desirability from package design to brand campaign to drive brand performance, has partnered with Magners to refresh its cider range across APAC.

To ensure consistency across the region, Magners partnered with Anthem Worldwide (Singapore) to re-design and create a cohesive packaging design system across all variants and sizes. This also included secondary

packaging designs, collateral and engaging instore point-of-sale management touchpoints within retail environments. Including a new and innovative flavor Juicy Apple, Magners sets out to excite experience-centric consumers.

“Understanding how APAC consumers connect within the respective markets is a crucial part of our discovery process when crafting a unique drinking experience. Together with the Anthem team in Singapore, we managed to unearth new insights into consumers’ self-expression journeys. This was fundamental to defining the user experience for Magners and we are motivated to witness its launch in Asia.” – Andrew Herd, Marketing Manager, C&C International

From insight to execution, both teams conducted extensive immersion activities, category analysis and audit sessions within the target markets in APAC. Gathering views on the cider consumption experience from a diverse range of internal and external stakeholders, cultural nuances and common drinking rituals in distribution markets were key to re-defining the brand experience.

Based on the value proposition of “real fruit, real cider”, the Anthem team spearheaded the creative strategy including key visual generation, brand re-positioning and point-of-sale touchpoints.

The new product range is scheduled for rollout within Australia, New Zealand, China, Hong Kong, Singapore, Taiwan, Thailand and Vietnam.

Ball Corporation board elects Cathy D. Ross and Pedro Henrique Mariani as directors

Ball Corporation’s board of directors has elected Cathy D. Ross, retired executive vice president and chief financial officer from FedEx Express, and Pedro Henrique Mariani, chairman of the board of Banco BBM to serve as directors of the corporation.

Ross, 59, worked at FedEx Express, FedEx Corporation’s largest operating unit, in financial roles of increasing responsibility for 30 years. She most recently served as executive vice president and chief financial officer. Prior to her career at FedEx, she worked at Kimberly-Clark Corporation and Procter & Gamble. Ross currently sits on the boards of directors of Avon Products, Inc. and Steelcase, Inc.

Mariani, 64, joined Ball’s board of directors as advisory director in July 2010 and has been chairman of the board, president and CEO for Banco BBM, a leading Brazilian financial institution. Mariani has served at BBM Group for 36 years and was appointed as chief executive officer in 1991. He also sits on the board of directors at FEBRABAN (Brazilian Federation of Banks).

“We are pleased to welcome Cathy to our board and to have Pedro move into a new role on Ball’s board of directors,” said John A. Hayes, chairman, president and chief executive officer. “Their financial acumen, international consumer products and banking expertise, values and ethics will complement our diverse board of directors as we continue to pursue our Drive for 10 vision.”

BUSINESS CONTACTS

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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

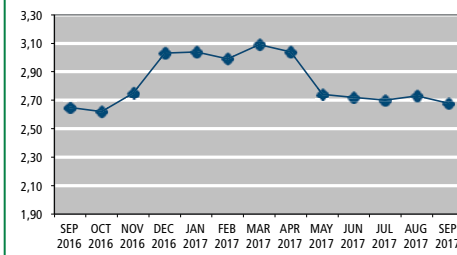
Prices: The price range is calculated for juice or puree of different proveniences, traded in drum or bulk; \$/kg = cif Rotterdam; EUR/kg = DDP

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')

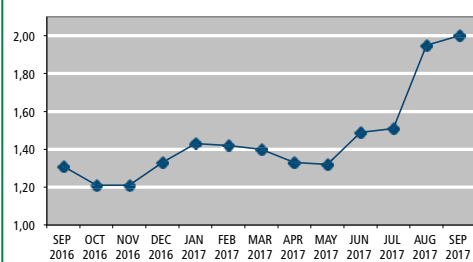
Orange Juice Concentrate

65 °Brix, \$/kg



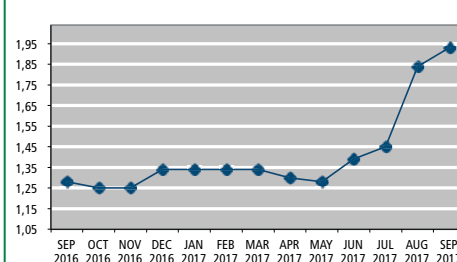
Apple Juice Concentrate

70 °Brix, high acidity, EUR/kg



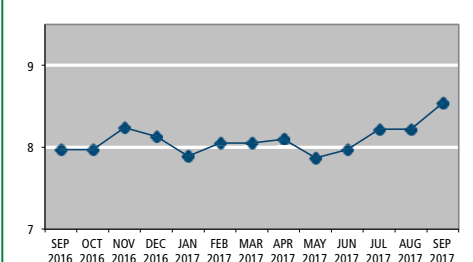
Apple Juice Concentrate

70 °Brix, low acidity, EUR/kg



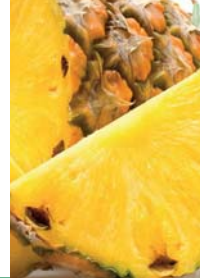
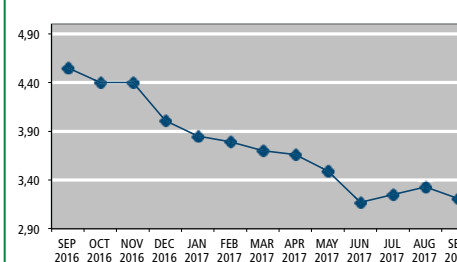
Passion Fruit Juice Concentrate

50 °Brix, \$/kg



Pineapple Juice Concentrate

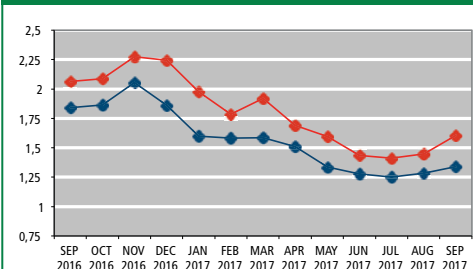
65 °Brix, \$/kg



Orange Juice Concentrate

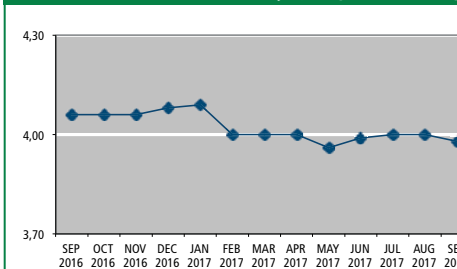
Future Markets \$/lb.

◆◆ = highest values
◆◆ = lowest values



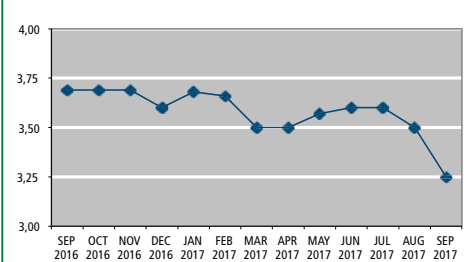
Lemon Juice Concentrate

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



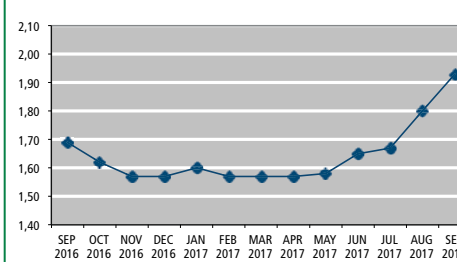
Grapefruit Juice Concentrate

58 °Brix, \$/kg



Pear Juice Concentrate

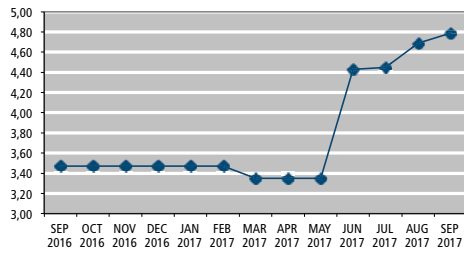
65 °Brix, EUR/kg



MARKET PRICE REPORT

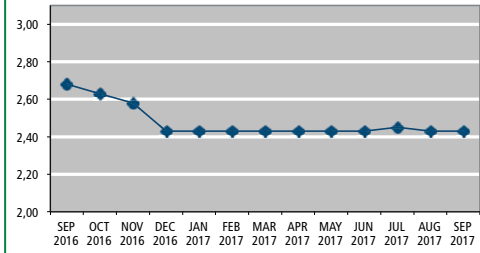
Sour Cherry Juice Concentrate

65 °Brix, EUR/kg



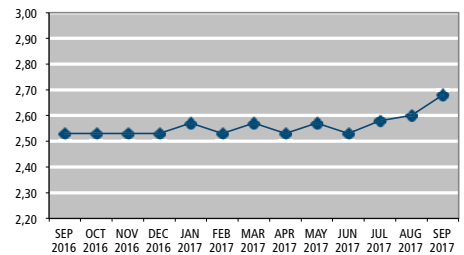
Black Currant Juice Concentrate

black, 65 °Brix, EUR/kg



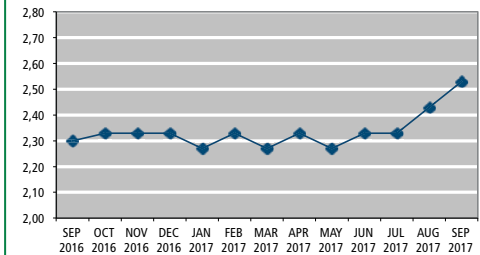
Grape Juice Concentrate

white, 65 °Brix, EUR/kg



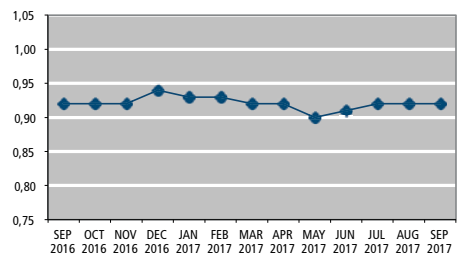
Grape Juice Concentrate

red, 65 °Brix, EUR/kg



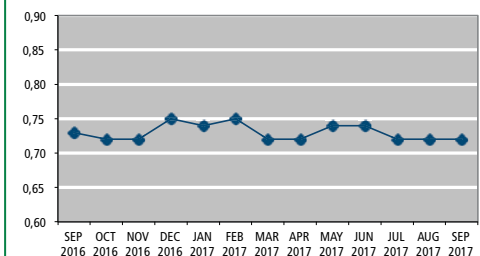
Apricot Puree

EUR/kg



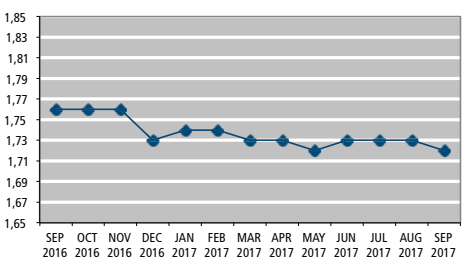
Banana Puree

22-24 °Brix, \$/kg



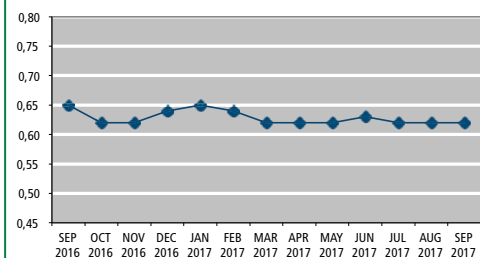
Mango Puree

15 °Brix, \$/kg



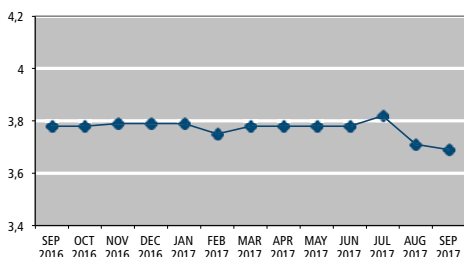
Peach Puree

EUR/kg



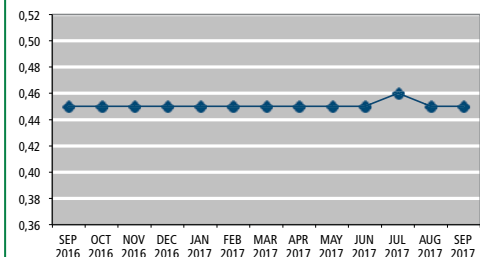
Carrot Juice Concentrate

65 °Brix, EUR/kg



Carrot Juice

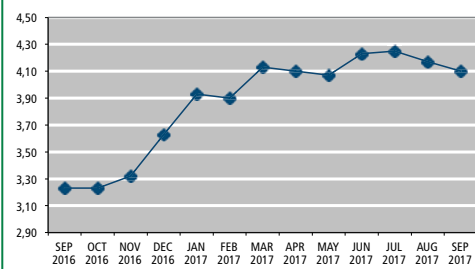
EUR/l



MARKET PRICE REPORT

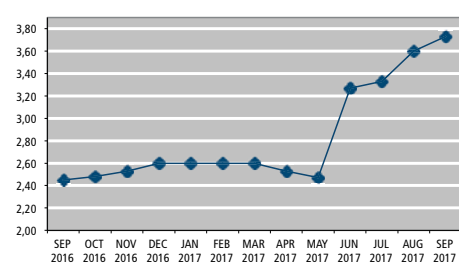
Orange Juice Concentrate

organic, 65 °Brix, \$/kg



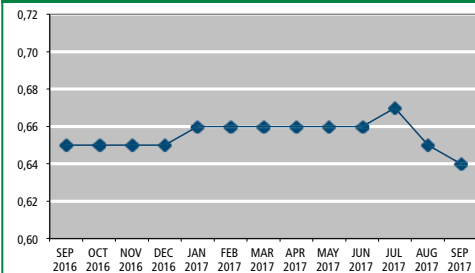
Apple Juice Concentrate

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



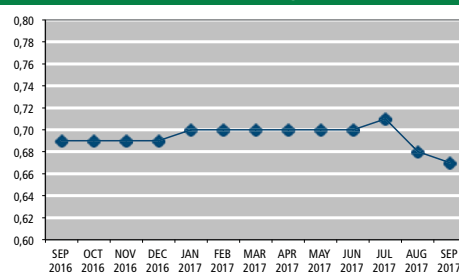
Carrot Juice

organic, EUR/l



Red Beet

organic, EUR/l



Breaking news +++ Breaking news +++ Breaking news +++ Breaking news +++ Breaking news +++

Mintel announces five global food and drink trends for 2018

Mintel, the world's leading market intelligence agency, has today (Thursday 26th October 2017) announced five key trends set to impact the global food and drink market over the coming year.

In 2018, expect to see transparency and traceability for all, regardless of their income. From ingredient scares to political bombshells, self-care has become a priority for many and one that includes choosing food and drink that will address perceived nutritional, physical and emotional needs. Opportunities also will be plentiful for natural, tantalising and unexpected textures from chewy beverages to cookies with popping candy inside. The rapid expansion in the variety of food and drink retail channels will fuel the opportunity for recommendations, promotions and product innovations that are personalised based on individual consumer behavior. Finally, forward-looking companies are developing solutions to replace traditional farms and factories with scientifically engineered ingredients and finished products.

Looking ahead to 2018, Mintel's Global Food and Drink Analyst Jenny Zegler discusses the major trends predicted to play out in food and drink markets around the world, beginning with the trends that will gain wider traction in the months ahead to emerging trends that are influential, but just on the fringe in many regions.

Widespread distrust places pressure on manufacturers to offer thorough and honest disclosures about how, where, when and by

whom food and drink is grown, harvested, made and/or sold. The need for reassurance about the safety and trustworthiness of food and drink has led to increased use of natural as well as ethical and environmental claims in global food and drink launches. In addition to more specific product details, the next wave of clean label will challenge manufacturers and retailers to democratise transparency and traceability so that products are accessible to all consumers regardless of household income.

In 2018, the sound, feel and satisfaction that texture provides will become more important for food and drink companies and consumers alike. Texture is the next facet of formulation that can be leveraged to provide consumers with interactive — and documentation-worthy — experiences.



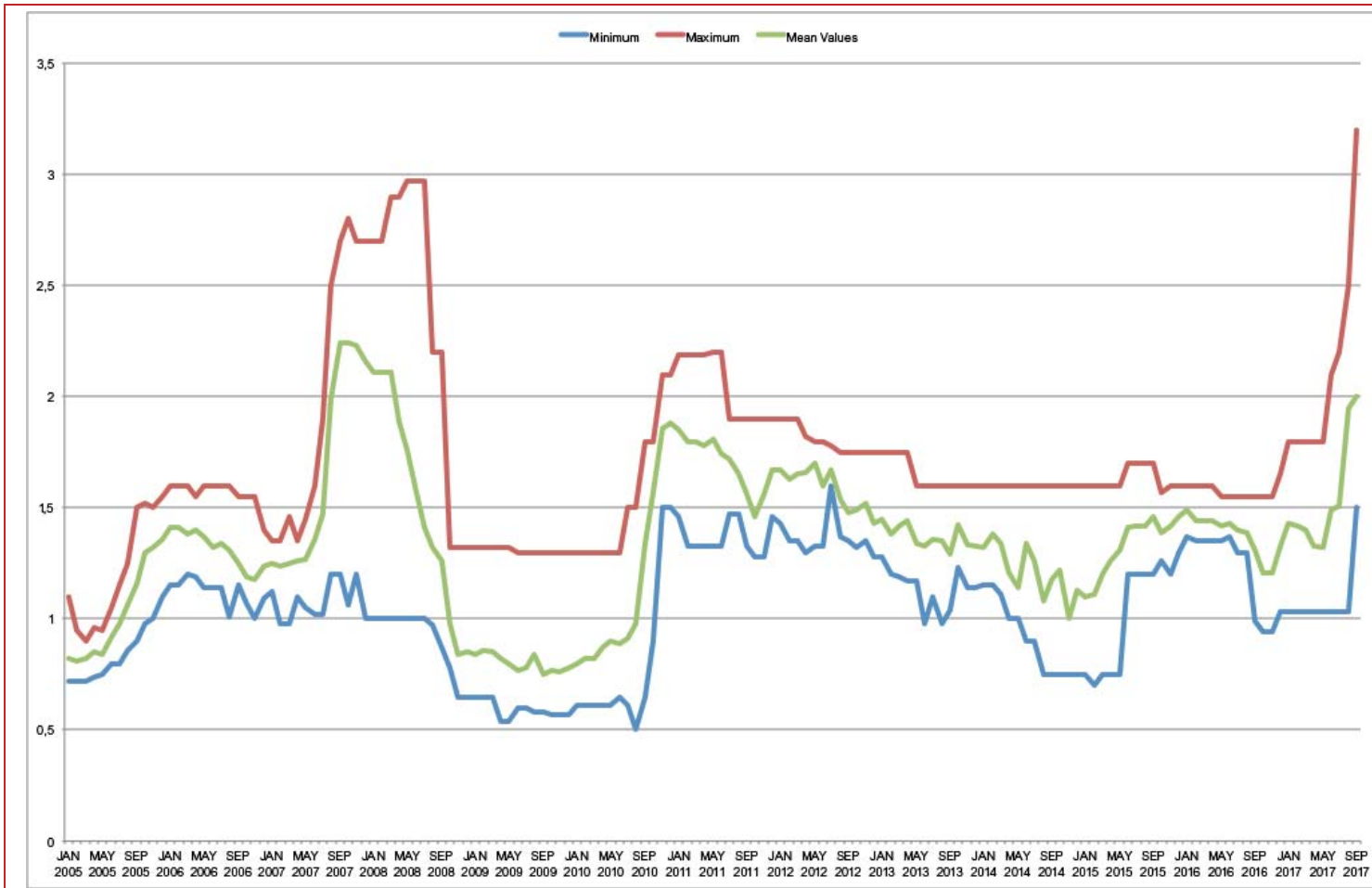
The quest for experiences will provide opportunities for multi-sensory food and drink that uses unexpected texture to provide consumers, especially the teens and young adults of the iGeneration, with tangible connections to the real world, as well as moments worth sharing either in-person or online. For more information on the 44-page-report please visit: www.mintel.com



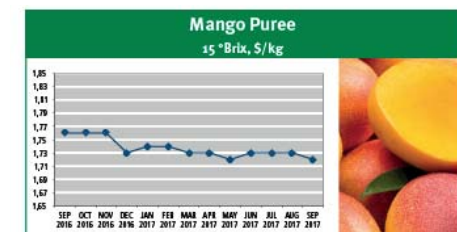
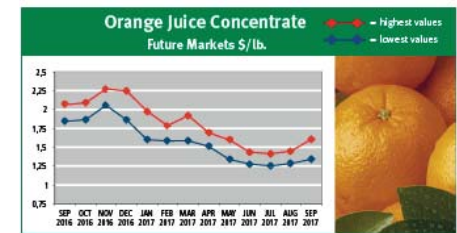
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Development of Commodity Prices 2005 – 2017: AJC , high acidity



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. For more insights and other commodities please contact Christian Friedel (christian.friedel@confructa-medien.com) and visit our website: www.fruit-processing.com



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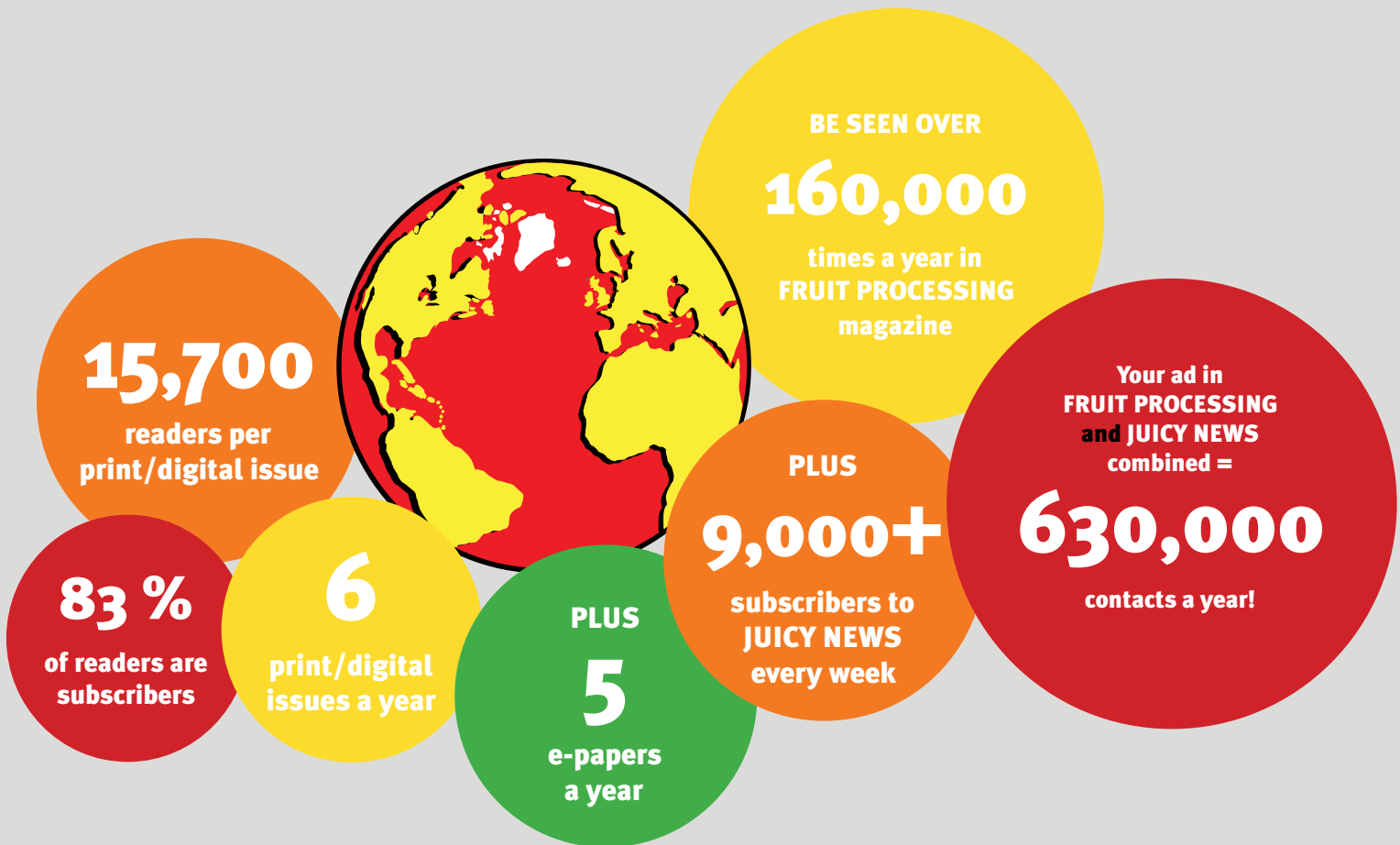
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