

Food & Drink

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TECHNOLOGY



Red letter day

Behind the scenes at
Sensient Food Colours Italy

Blending room

Take it as red

spray drier

Grape expectations!

Experimenting with colours

Ready for the tour

Tanks for the memory

Well equipped

'We colour the world around you'



When Sensient Colours invited Michelle Maynard to become the very first journalist to be let through its doors, it was an offer too good to refuse...

Tucked away down the winding road of the Corte Tegge industrial estate in Cavriago is an anonymous-looking building that gives little clue as to what goes on behind its white façade.

But venture beyond the gleaming glass doors, and you'll discover one of northern Italy's best-kept secrets.

For here, in the heart of an agricultural red wine-producing community, is Sensient Food Colours (SFC) Italy – the largest European producer of red natural food grade colours, more commonly known as anthocyanins.

It's an operation run with military precision, in both raw material selection and prompt collection of the grape skins.

"We are actively involved in primary extraction from raw materials, which is very important for traceability and safety," explains managing director Imerio Bortot. "We also like to be part of the local agricultural community, and work very closely with the wine producers."

The company deals mainly in red shades from grape skin extract (E163) and black carrot.

"The region is very important for dark red wine production," says Bortot. "During the grape harvest, we have just a six-week window to organise the transport and processing of the raw materials."

Those raw materials, which for wine-makers are a by-product, consist of two grape varieties – lambrusco and ancellotta – both used for their rich, strong colour.



“Time is of the essence as we need to secure the quality”

Bortot is in regular contact with the wineries dotted around the region, in order to assess the quality and quantity of the harvest. The region is, he says, very important for dark red wine production.

"We are embedded in the local north Italian agricultural wine-producing community, and focus on local sourcing, environmentally friendly production, short transport and the production of all grape derivatives – grape seeds for oil, tartaric acid and alcohol – with the exception of wine," he says.

"The raw material selection is vital, as is prompt collection of the skins once they've been pressed. During the harvest, we work 24 hours a day, seven days a week."

During that time, hundreds of dedicated and controlled trucks will pass through Sensient's doors, with more than 1,000 tonnes of materials processed each day, and 5,000 hectolitres of liquid.

Such a punishing schedule is vital, however, if the firm is to defeat its arch enemies 'oxidation' and 'microbiological activity'. As grape skins are a natural product, the colour and quality will quickly fade if they are not processed sufficiently quickly.

"When our trucks arrive with the grape skins, they are weighed and then sent to the appropriate production line, and processed in less than six hours from the time they left the vineyard," says Bortot.

"The six-week window for a harvest is like a Champions League Cup Final – there is no second chance. Time is of the essence as we need to secure the quality."



Extraction

Sensient uses two different extraction processes at its 22,000m² Corte Tegge site.

Traditional extraction is carried out with the aid of 160 fibreglass tanks and eight sieving machines for seed separation.

Continuous extraction (suitable for muta grape skins only) involves the use of two thermodynamic countercurrent extractors – built by Sensient's own engineers using proprietary technology.

Ninety per cent of the colour content is extracted in less than one hour, with the exhausted skins – and seeds – then sold on for biogas. "We don't waste anything," declares Bortot proudly.

After the extraction process comes evaporation and purification, before the product is then blended in mixers ranging in size from 1m³ to 22m³.

Liquid filling takes place on one of two lines – a dedicated filling line for packs of

Did you know?

If all the anthocyanins produced by Sensient in Italy each year were used in a red soft drink, the bottles placed end to end would circumnavigate the globe five times





“Ninety per cent of the colour content is extracted in less than one hour”

between five and 50kg, and an Alfa Laval aseptic filling line for customised packaging from five to 1,250kg bags.

The finished powder product has a shelf life of 24 months, and the liquid, nine months.

In terms of storage space, the site is able to accommodate finished goods in its 600m² warehouse. There is also a 200m² ingredients warehouse and cold store.

“We produce a full range of superior performance anthocyanins with colouring food-stuff properties,” says sales manager Alberto Forlini. “Our products are both liquid and powder, and come in different colour shades and strengths.”

Anthocyanins are water-soluble, natural colours widely used in the food processing industry. They are, however sensitive to pH change; they’re red in acidic conditions – where they are most stable – and

change colour as the pH increases.

“That’s why we carry out in-house stability testing, and also assist with scale-up,” adds Forlini. “Our R&D laboratory allows us to analyse and select high quality sources of raw material, and then develop innovative, formulated colour systems.”

Looking ahead, the firm says it has high hopes for the continued success of its products, as enhanced stability properties make for new applications, with a range of vibrant shades possible.

That means for Sensient, the future is, as they say, bright. Very bright indeed. ■



Grape skin extract: the benefits

- Strong, dark red colouring
- High light stability
- Transparent/low-turbidity
- Attractive price/performance ratio
- 100 per cent natural, meeting FDA and EU regulations
- Contains antioxidant polyphenols

Main applications

- Low alcohol beverages
- Soft drinks & fruit drinks
- Confectionery
- Sorbet and ice cream toppings
- Fruit preparations for dairy

Black carrot: the benefits

- Excellent stability
- Wide range of applications
- GMO-free
- Certified kosher and allergen-free
- Possible carmine (E120) replacement

Main applications

- Dairy
- Fruit preparations
- Yogurt
- Beverages
- Confectionery



The Colour of Innovation



Each innovation differs. With a vibrant and special shade, they truly stand out. Sensient's food colours enhance the unique character of your food and beverage products and add value to your brand. With our latest innovation of exclusively natural colouring foods, Cardea™, Sensient unlocks nature's potential supporting your specific needs.

We offer the leading global natural colours and colouring foods portfolio, process and application expertise, regulatory insight and local presence – let's create together.

Contact us
to make your ideas a colourful success

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Sensient Food Colors is a business unit of Sensient Technologies Corporation.

