Decaffeination option available in Vietnam

As Ruth Ann Church* of Artisan Coffee Imports in the US explains, although most decaffeination companies are based in Europe or North America, there is now an option to produce decaf coffee in Vietnam

Through a chance meeting with Will Frith (www.willfrith.com) at a Roasters Guild retreat in August 2015, I learned about a new option for decaffeination in Asia. Thanks to Will's travels and explorations in coffee in Vietnam, he was able to introduce me to a relatively new player in the decaffeination world: Hiang Kie Industries Limited (HKI).

HKI began operations in 2007 and was the first decaffeination plant set up in the Long Thanh Industrial Zone in Dong Nai Province, Vietnam (about an hour drive from Ho Chi Minh City). They process coffee using methylene chloride (MC) as a solvent.

The company runs two decaffeination plants: one can handle small batches and the other handles larger scale work. They process beans from all coffee regions: South America, Africa and Asia. The minimum batch size is 2.5 tonnes, or about 5,500 lb, which is about 42 60kg bags.

Samples from Hiang Kie all cupped well

Consumers need to know more

Swiss Water Decaffeinated Coffee Company (SWDCC) tells *C&CI* that it believes conscientious consumers are "looking beyond food safety" and many are basing purchasing decisions on a product's provenance, quality and traceability. This is true of coffee and of decaffeinated coffee, it says, but the industry "has to be accountable for what is promoted" and has to educate and inform customers about the ways the coffee is being decaffeinated. "After all," says the company, "it is part of the traceability mandate."

As it notes, food and beverage companies face a growing challenge meeting labelling requirements and providing consumers with access to food and nutritional information. "This general movement toward increased demand for natural, organic food and more traceable products is also very relevant to the coffee industry. Producers, importers, manufacturers, retailers, roasters among others have been focusing on improving the coffee supply chain in order to offer better traceability and a more sustainable operation.

"Although several initiatives have been implemented, when it comes to the decaf category, there are still many things that can be done and that are unique to the segment," says SWDCC. "One challenge is that consumers have certain stereotypes about decaf coffee that aren't necessarily precise.

"For instance, a lot of people consider that decaf coffee does not have true coffee flavour and that is healthy per se. Although more information can be found about the methods of decaffeination, most of the time, shoppers don't find basic information about the process applied for the extraction of the caffeine in their products. The industry uses terms such as 'natural decaf' and the 'water decaf process', but these rather indistinct terms place most decaf coffees under the same umbrella.

"There is also indiscriminate use of the word 'water process' to describe what is actually a methylene chloride process," SWDCC claims. "This is highly confusing to the consumer and the coffee trade. While not new, the Swiss Water process is unique," it claimed, and is the only method of processing coffee using water and a green coffee extract alone. "For us, the use of the terms 'Swiss Water' and 'supercritical carbon dioxide' decaffeination are important because they are precise, and thus tell the consumer exactly how their coffee was manufactured."

Another well-known player in the market, Descamex in Mexico, concurred that there is a growing focus in the industry on 'natural' processes. "In Mexico, for example, Nestlé recently launched a big campaign focused on their natural decaf method," said the company. "In response to this, decaf companies are improving their processes and better-educated consumers are learning more about coffee and all of the processes involved. There is also a growing awareness of decaf options in many countries that are consuming countries, such as Brazil, that are just starting to find out about caffeine-free coffee alternatives."

Ruth Ann Church: "Hiang Kie Industries uses a 'direct' MC process"

Direct MC process

What intrigued me about their service is their transparency. With relatively little effort, their sales representative answered my questions about process details and costs. It is a 'direct' MC process, meaning that the beans soak in the solvent, and then the solvent, with the caffeine, is removed.

Of the different MC processes, this one has always been my favorite. It seems the simplest and 'cleaner' than the indirect process. It seems to offer the best chance that original coffee bean is left intact as much as possible.

Hiang Kie offers two types of dryers. A drum dryer takes about eight hours to dry the coffee and a vacuum dryer takes about three hours. Total processing time about is about 14 to 16 hours depending on the type of beans.

Coffee cups well

I was eager to sample the company's coffee, so Dinesh Bhojwani, Hiang Kie's sales representative, arranged to send me three samples: a Colombian, a Brazilian and a Vietnamese Arabica.

All were decaffeinated at Hiang Kie and they all cupped quite well. I admit I was surprised, having lived my entire 'coffee life' believing Vietnam can only produce low-quality Robusta. The Colombia was my favorite. It retained a lot of its acidity and fruity notes. The Brazil had typical earthiness and body of a Brazil natural. The Vietnamese Arabica had brilliant aroma with sweet cherry and dark chocolate. Admittedly, much of this amazing aroma was tempered in the brewed cup. But this decaf Vietnam still had smooth body and minimal bitterness in the after-taste. So if you've been wondering whether to try decaffeination in Asia, HKI would certainly be worth considering. ■ C&CI

** Ruth Ann Church is President of Artisan Coffee Imports, an importer and trader of specialty green decaffeinated coffee. Artisan is now offering consulting at origin for work related to sustainability and impact assessment. She is currently studying for a second master's degree focused on the coffee value chain and sustainability at Michigan State University.*

Demus unveils more details of Aqua process

As highlighted in the March 2016 issue of *C&CI*, Demus in Italy is now also offering a water decaffeination process. "Using water as a solvent has excellent commercial appeal," said the company, "and in fact it was one of the first solvents to be used for decaffeination. It is rather complicated to use because it is not particularly selective, so it extracts some of the water soluble flavour components from the product, along with the caffeine. However, various methods are used to get around these drawbacks: the water can be saturated in advance with the flavours that coffee normally contains, thus reducing the extent to which they are extracted from the processed coffee. However, this leads to a certain degree of molecule exchange between the solution and the coffee, which alters the product's characteristics. An alternative is to extract the caffeine and the water soluble flavours, remove the caffeine from the solution using a solvent or – much better – activated carbon, and then allow the coffee to reabsorb the molecules lost during the extraction process."

In Demus' new process, which it calls 'Demus Aqua,' green coffee and pure water are loaded together into a stirred tank extractor. This mixture is heated to the temperature set to start the extraction process. As highlighted above, water is not a selective solvent. Indeed, the water extracts almost all water soluble substances from coffee and the solution continuously flows and passes through a bed of special activated carbons with selectivity towards caffeine and its molecules are captured.

"The solution, now deprived of the alkaloid but still rich of coffee aromas, is sent back, inhibiting the extraction of flavourings," said a spokesperson for Demus. "This process has a variable length depending on the amount to be extracted. After this stage, the residual aqueous solution is concentrated to suitable conditions without the caffeine.

"When a certain concentration of flavours in the solution has been reached, the reincorporation phase begins. This stage consists of bringing the coffee into contact with the concentrated solution in conditions that facilitate penetration of the flavouring in the coffee bean, thus reintroducing the flavour extracted beforehand. The coffee is then dried and cooled. Finally the coffee is bagged and analysed in our accredited laboratory."

As he explained, the water-decaffeinated coffee appears darker than un-decaffeinated beans. Some of the coffee beans may be slightly chipped because of the prolonged contact with hot water. "Decaf is mechanically more delicate than non-decaffeinated coffee," the company explained, "and thus a little more fragile and, from an organoleptic point of view, it degrades a little more quickly than decaffeinated coffee obtained with dichloromethane. The roasting process for the product is also different: to obtain a product with good organoleptic characteristics in the cup, the colour of the roast should be slightly darker than it would be for a non-decaffeinated coffee."