



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."