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INDONESIA

Indonesian Coffee

What's Inside

Being the world's largest archipelago and located in the equator allows Indonesia to offer plenty of coffee types to the world, especially those termed as specialty coffee. The specialty varieties include those cultivated in various places in Indonesia, such as Flores, Sidikalang, Toraja and Wamena. Each of the specialty coffee has its own distinguished aroma and taste.

trade with remarkable indonesia

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FROM EDITOR'S DESK

Dear Valued Readers,

We are now entering the second half of 2014 and we do hope that you have reached your targets so far. We at the Directorate General of National Export Development, Ministry of Trade of the Republic of Indonesia, keeps working to increase the Indonesian export through various means including publishing this monthly Export News bulletin to disseminate information on the country's leading export commodities.

One of the leading export commodities is coffee beans, especially those considered as specialty coffee such as Luwak Coffee, Wamena Coffee, Toraja Coffee, Gayo Coffee and Kintamani Coffee. Each coffee has its own aroma and taste according to the location, soil type and land elevation. This July edition of Export News gives you more information on various types of specialty coffee from Indonesia. The export of Gayo coffee to the United States, for example, in the first four months of 2014 reached 1,920.8 ton worth US$7.39 million. The United States is the largest importer of Gayo Coffee.

Coffee plantation in Indonesia started in 1699 during the Dutch East Indies Company (VOC) time and currently the some third-quarter of the coffee being cultivated is the Robusta Coffee while the remaining is Arabica Coffee.

With plenty of specialty coffee types, Indoesia has the potentials to be known as a top producer of specialty coffee. In the international market, the term "Java coffee" is used to label a high quality coffee, usually Arabica. So famous that a computer programming language is named after Java coffee. Interested buyers are most welcomed to directly contact the exporters from a list of exporters provided in this edition. We do hope that you will reach a deal that is beneficial to all parties.

Thank You

In *this* issue

hot issue

Revitalizing the national coffee sector

The Indonesian government is currently revitalizing the national coffee sector in which the inital stage is prioritized on developing Arabica coffee. It is expected that the export of Arabica coffee could reach a minimum of 30% from the total national coffee export in the next 10 years while maintaining the level of production and export for Robusta coffee

The coffee revitalization policy is taken to take the advantage of opportunities in international market, both regarding demands and pricing.

The development of Arabica coffee is also meant to maintain Indonesia's position as an important source for a number of the world's specialty coffees in accordance with specific geographic location such as for Baliem coffee, Bali Kintamani coffee, Flores Bajawa coffee, Gayo coffee, Java coffee, Kalosi coffee, Mandheling coffee and Toraja coffee.

Market for specialty coffee is currently growing in major consumer countries such as the United States, the European Union and Japan and new markets such as South Korea, Brazil and Indonesia.

In addition to market consideration, developing Arabica coffee is also expected to bring positive impacts to environmental conservation such as land, water and natural diversity in Indonesian mountaineous regions.

Currently there is 1.2 million hectares of coffee plantation consisting of 985.000 ha (77,77%) of Robusta cofee and 281.000 ha (22,23%) of Arabica coffee. Coffee is also a social commodity as 96,51% is being cultivated by farmers involving 1,9 million families.

Indonesia's coffee total production reached 682.000 tons consisting off 535.000 tons (78,73%) of Robusta coffee and 148.000 tons (21,63%) of Arabica coffee. The commodity contributes US$824 million to the state coffer.

Indonesian ground coffee

The productions of Indonesian coffee is currently ranked the world's third largest. Coffee does not only provide the experience of taste but also cultural identity of Indonesia. With the climate condition in the country, coffee can grow very well.

Coffee plant is part of Rubiaceae family and has many varieties such as Arabica coffee, Robusta coffee and Liberica coffee. The color of mature coffee berries will range from reddish yellow to dark red.

Coffee berries are divided into three parts:
1. Outer skin or exocarp
2. Pulp or mesocarp
3. Hull or endoscarp

Indonesia is the world's best producer of Arabica coffee and second only to Vietnam for Robusta coffee.

1. Coffea arabica
This coffee is the first to be cultivated and the most produced, representing more than 60% of the world's coffee production. The Coffea arabica species produces the best coffee and usually grows in highlands. With caffeine content of less than 1,5%, the plant grows up to between 4 and 6 meters.

2. Coffea canephora
The plant of Coffea canephora could reach 12 meters high and can be cultivated in lower altitude than Arabica coffee. Robusta coffee is usually used for instant coffee, has higher cafeine content, which can reach 2,8%, and emits a stronger aroma. The production of Robusta coffee constitutes roughly one-third of the world's total coffee production.

The composition of coffee beans is different depending to the types of coffee, soil, and processing. The most important chemical structures inside coffee are caffeine and caffeol. Caffeine stimulates the nerve network while caffeol provides good flavor and aroma. The purest form of caffeine is found a crystaline white powder or look like a long, tangled silk yarn. Caffein crystal bonds one molecule of water and can be dissolved in boiling water. In organic solvent, the crystal can take place without water molecule bond. Caffeine dissolves at the temperature of 235°C to 237°C and will be sublimed at 1,760°C in the open air. Caffeine emits fragrant aroma and tastes bitter and expands in water. Caffeine is a derivative alcaloid from methyl xanthyne 1,3,7 trimethyl xanthyne and a weak moncidic base which can be separated through vaporizaton and by heated alcalies.

Roasted coffee beans no longer contain tanine. The content of sugar, consiting of galactose, manose and pantose, reaches 5% on dried beans and 3% on roasted beans.

Coffee berries are havested manually by handpicking ripe pods, usually colored red. Ripe berries still have soft, slimy pulp with relatively high sugar substances hence its sweet taste. After being harvested, coffee berries are then sorted according to its quality and separating superior berries (ripe and uniform) from inferior ones which are defect, black, broken, holed and infected. After harvesting, the berries should not be kept for more than 12 hours as it will lead to pre-fermentation causing the aroma and taste to spoil.

Processing coffee berries

In general, there are two methods to process coffee berries into beans: wet and dry.

DRY PROCESSING METHOD

• DRYING
There are two ways to dry coffee beans: natural and artificial.

Natural drying uses heat from the sun and requires a vast space and long time because coffee beans contain sugar and pectine. Heat in this process will cause the beans to change color and become ripe. The length of the process depends on weather, beans size, ripening level and water content in coffee benas. Usually it takes between 3 and 4 weeks. After the drying process, the water content usually becomes 12%.

The advantages of natural drying is cost efficient with focus on temperature setting. According to Roelofsen, drying should be done at a low temperature of 55°C which will produce reddish coffee beans and not too strong.

• HULLING
Hulling process in dry processing methond aims to separate coffee beans from its outer skin, pulp and hull. Hulling can be done with huller which consists of three types of manual huller, motorized huller and hummer mill.

WET PROCESSING METHOD

Wet processing method consists of receiving, pulping, classifying, fermenting, washing, drying, curing and storing.

• RECEIVING
Harvested coffee berries have to be immediately moved to processing facility to prevent direct heat which cause damage, such as color change and spoiling. Harvested berries are put into a water-filled tank to separate floating berries from those which are not floating. Floating berries usually dry on the trees but are infected with diseases such as Antestatia and stephanderes, and usually are processed with dry method. Coffee beans which do not float are usually moved to pulper section.

• PULPING
Pulping aims to separate coffee berries from outer skin (exocarp) and pulp (mesocarp) resulting in pulp. The process of removing exocarp and mesocarp is done in flowing water. The result of this process is dry green coffee beans with different types.

• FERMENTING
Fermentation process aims to remove mucilage which is still sticking to the endocarp and washing process will remove it easily so as facilitating drying process. Pectine hydrolisis is caused by pectihase which is contained in the fruit. The reaction can be expedited with the help of microorganism. Fermentation process happens with the help of Saccharomyces in a ripening process.

Types of fermentation:
• Wet fermentation: Coffee beans are soaked in water for 10 hours. Water is released through holes on the bottom of tank with the beans are being stirred. Water is changed every 3 to 4 hours. The length of fermentation is 36 to 40 hours otherwise the coffee beans will stink and yield in low quality beans.

•Dry fermentation: Cofee beans from pulper machine are stacked and covered with wet goni sacks to keep them moist. The beans are stirred every 5 to 6 hours to allow even fermentation. The length is 2 to 3 days.

• Rinsing
The coffee beans are rinsed by placing them inside a rinsing machine which spins in its horizontal axis and pushes coffee beans with flowing water. The mechanical rinser will separate sticking mucilage which will follow the flowing, discharged water

• Drying
Initial drying will reduce the water content from 60% to 53%. Alternately, coffee beans can also dried with sunlight for 2 or 3 days and stirred periodically. This way, the water content could reach 12.5%, making safe for coffee beans to be packaged in sacks and stored.

Processing coffee berries

• Curing
Curing process aims to maintain the appearance coffee beans so they can be exported or ready for next processing step.

• Storage
Coffee beans can be stored as dry coffee beans or parchment dry coffee beans which need similar storage condition with water content of 11% and air humidity of less than 74%. This will minimize the growth of fungi such as Aspergilus niger, A. oucharaceous and Rhizopus sp.

PROCESSING COFFEE BEANS INTO ROASTED COFFEE AND GROUND COFFEE

• Decaffeination
Decaffeination is ussual don before the coffee beans are roasted after being cleaned and sorted. The process starts by making the beans wet and then being extracted in organic solvent methylen chloride (CH_2Cl_2) in an extractor. The process also includes heating coffee beans with hot steam.

• Roasting
Roasting brings out the aroma and taste from coffee beans by way of heating. Coffee beans contain ample organic substances which will form coffee's signature aroma and taste.

Roasting causes significant chemical changes with the loss of dry weight especially gas and other volatile pyrolisis products. Most pyrolisis products determine coffee taste. The loss of dry weight relates to roasting temperature. There are three types of roasting: high roast uses 199°C to 199°C, medium roast uses 204°C and dark roast uses 213°C to 221°C.

Changes in physical and chemical properties take place during roasting, according to Ukers and Prescott in Ciptadi and Nasution (1985), such as swelling, vaporization, forming of volatile compounds, carbohydrate caramelization, rough fiber reduction, protein denaturation, forming of CO_2 as the result of oxidation and forming of aroma charateristic of coffee.

During roasting, a small number of caffeine will vaporize and form a number of other compounds such as acetone, furfural, ammonia, trimethilamin, formiat acid and acetate acid. Caffeine in coffee can be found as free compound or in combination with chlorogenate as Kalium caffeine chlorogenate.

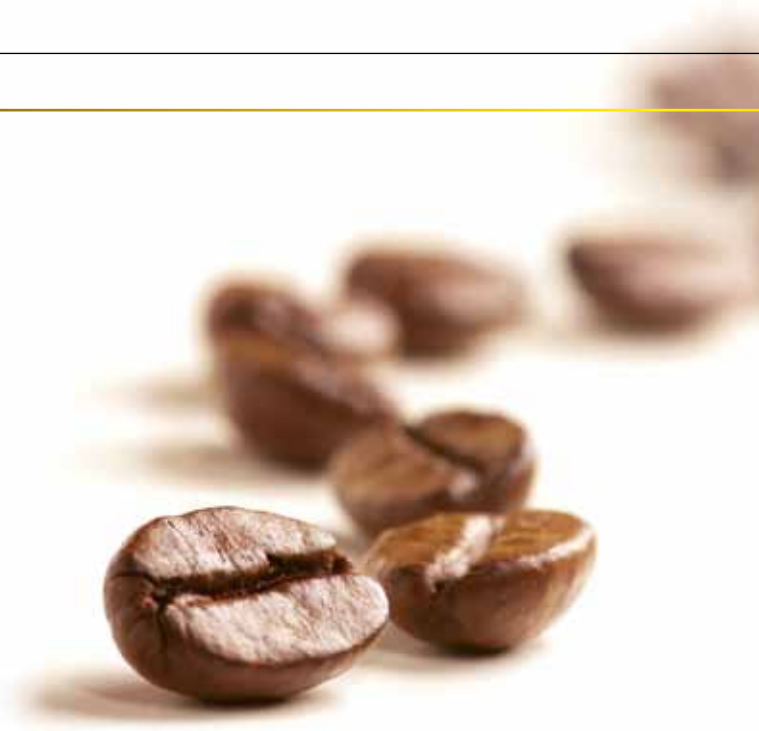
• Cooling
Cooling process is applied to roasted coffee beans to prevent subsequent heating which can change the wanted color, flavor, volume or ripening level. Late cooling can cause continued roasting and resulted in over roasted beans. During cooling process, coffee beans are stirred manually to expedite and spread the cooling process evenly. Cooling process also sorts remaining hull which are separated from the coffee beans during roasting process.

• Packaging
The next step is packaging the roasted coffee beans. Better container and vacuum packages are needed to prevent oxydative deterioration if coffee does not go through special outlets. Currently being used are tin vacuum packages which can hold resulting pressure or bags which can release CO_2 but receives oxygen.

• Grinding and sorting roasted coffee beans
To get coffee powder, roasted coffee beans are ground with grinding machine until the beans turned into powder. Coffee powder have larger surface area when compared to in the form of beans. Therefore, substances forming flavor will easily soluble in brewing water.

Grinding coffee beans into fine particles can cause the lost of volatile substances due to heat produced during grinding process. The lost of aroma in coffee can be caused by the vaporizing of caffeol, a substance with coffee specific aroma, resulting in the coffee-specific aroma to be less distinct.

After grounded, the powder is sorted using a strainer to get fine and uniform granulate. The strainer usually has a size of 40 mesh, which means there are as many holes in a square-inch.



The export of Gayo coffee to the United States in the first four months of 2014 reached 1.920 ton worth US$7,39 million. Based on the Coffee Export License (SPEK) issued by the Central Aceh regency administration, there was an export of 2.077 tons in the first four months of 2014.

Indonesian Coffee

The US is the largest importer of Gayo coffee in 2014 with an average of 480,2 tons per month, or 92,4% of the total export. The remaining 7,6% is exported to Canada, Hong Kong, Ireland, the Netherlands, New Zealand, Malaysia, Sweden, Taiwan and Turkey.

The highest export of Gayo coffee to the US was recorded in February at 615,6 tons with a value of US$2,42 million. The export was 335,6 tons worth US$1,19 million in January. After February's high, the export dropped to 458,4 tons with a value of US$1,85 million in March. In April, the export rebounded with 511,2 tons worth US$1,91 million. At 519,3 tons per month, the average export in the four months of 2014 was higher than the average export in the entire 2013 which was recorded at 383,6 tons per month.

Based on the International Coffee Organization (ICO)'s publication, the trade statistics data showed that:

- The world exported 10,25 million bags of coffe in April 2014 when compared with 9,8 million bags in 2013.
- Export in the first seven months of the 2013-2014 coffee year (October 2013-April 2014) fell by 3,4% when compared to the first seven months in the previous year.
- In the 12 months ending in April 2014, the export of Arabica coffee reached 68,99 million bags compared to 68,78 million bags in the previous year. Meanwhile, the export of Robusta coffee reached 40,64 million bags in the 12 years ending in April 2014 when compared ot 43,12 million bags in the previous year.

Coffee price fluctuated in April 2014 with the ICO composite indicator recorded the highest monthly average in more than two years, surpassing the record in the previous month.

Indonesia is not only known for its batik makers or tourism on Bali Island but is also known for its reliable taste of Indonesia's original coffee. The followings are types of Indonesian originated specialty coffee which aromas are already spread across the globe:

1. Luwak Coffee

Luwak coffee is fermented in the stomach of a luwak, or civet, and has a unique taste for having more acidity when compared to other coffee types. Luwak coffee lost its bitter taste during fermentation and also has the taste of caramel and cacao. These factors have made Luwak coffee as the world's most expensive coffee. The price of a cup of luwak coffee could reach US$50 while the beans could fetch as high as US$600 per kilogram.

2. Wamena Coffee

The coffee from Papua has less caffeine and has a taste similar with Jamaica Blue Mountain Coffee, a type of Arabica coffee which grows in Blue Mountain. Jamaica Blue Mountain is America's No. 1 coffee.

3. Toraja Coffee

The coffee comes from the Toraja mountaineous area in South Sulawesi which has low acidity and its unique taste is affected by the high quality of soil. Toraja coffee was listed as the world's second best coffee. The Disadvantaged Regions Ministry has designateed North Toraja regency to become the showcase of Arabica coffee in an effort to penetrate the world's coffee market. Aficionados for Toraja Coffee are mostly Japanese.

4. Gayo Coffee

Gayo Coffee is from Gayo mountaineous area in Aceh and has been acknowledged by coffee connoisseur Christopher Davidson. North America's favorite specialty coffee got a score of 85 when graded by the Specialty Coffee Association of America.

5. Kintamani Coffee

The light and sweet Kintamani Coffee is from Bali and is produced in the subak abian system which encourages organic coffee cultivation. Kintamani Coffee has received a Geographic Indication (GI) specification from the Paris-based Centre de Cooperation Internationale en Recherce Agronomiques pour le Developpement (CIRAD) as a Balinese unique coffee.

6. Flores Coffee

Being consumed in America, Flores Coffe has large, shiny beans with strong chocolate aroma and a heavy sensation in the palate with a high level of acidity. Flores Coffee comes from Ngada regency in East Nusa Tenggara province.

7. Sidikalang Coffee

Sidikalang Coffee coms from Sidikalang district in Dairi regency, North Sumatra. Cool weather with mineral-rich mountainaous soil in the Bukit Barisan range allows the production of high quality coffee beans. Sidikalang coffee is well known for its taste and is said to be able to compete with Brazilian coffee. Considered as an icon of coffee from North Sumatra, Sidikalang coffee is special because it grows on volcanic highlands.

Indonesia has its own pride for having abundant natural resources and various top quality crops. Other than batik, Bali and coffee, Indonesia still has a lot to offer the world.