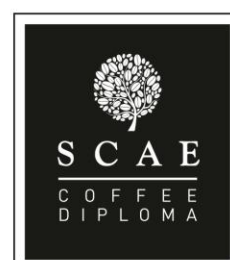


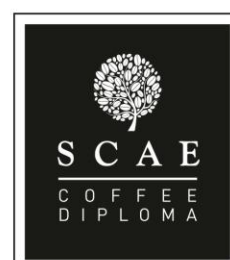
GREEN  
COFFEE

*Green coffee*



GREEN  
COFFEE

*Green coffee*



# SCAE COFFEE DIPLOMA: GREEN COFFEE

## GREEN COFFEE INTERMEDIATE

### Blooms Taxonomy for Foundation Level

Level 1: Knowledge – Remembering information				
Recognize	Memorize	List	Name	Relate
Define	Identify	Distinguish	Repeat	Recall
Level 2: Comprehension – Explaining concepts				
Restate	Describe	Explain		
Discuss	Identify	Express	Translate	Recognize
Locate	Report	Extrapolate	Convert	Review
Interpret	Abstract	Transform		

#### Pre-Requisites

It is recommended that the following CDS courses are designated as pre-requisites to this CDS module Green Coffee Foundation Level:

1. Introduction to Coffee.
2. Sensory/Cup Tasting Foundation.

The reason for recommending the 'Sensory/Cup Tasting Foundation' module as a pre-requisite is because there is a practical cupping in the examination and candidates will be more familiar with standard cupping protocol if the advice is followed.

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
<b>1.0 THEORETICAL PRINCIPLES</b>			
1.01.01	<b>BOTANY</b> The origin of coffee	L3	
1.01.02	Explain that Robusta ( <i>Canephora</i> ) is a parent of Arabica along with <i>Coffea Eugenioides</i>	L3	
1.01.03	Outline the spread of coffee species grown commercially from their origins to the current countries producing coffee	L3	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.01.04	Sequence the general historical global spread of Arabica from origins in Ethiopia through the Yemen to the current countries producing the species	L3	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)



# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
1.01.05	Explain the spread of Robusta is different to Arabica and that it was cultivated commercially from a much later point in time	L3	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.01.06	There are over 120 species in the Coffea genus and more than just Arabica and Robusta are grown commercially  Approximately 55 of these are indigenous to Madagascar	L3	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.01.07	Identify Excelsa and Liberica and being other commercially grown species accounting for up to 1-2% of total global production	L3	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.01.08	Distinguish between species and variety in coffee terminology	L3	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.01	<b>WHY IS BOTANY IMPORTANT</b> Recognise well known Arabica cultivars and understand basic Arabica lineage	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.02	Cultivated coffee varieties have developed over the last 500 years as a result of spontaneous mutation and specific selection	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.03	The majority of coffee variety development has been farmer focused in orientation with improving disease resistance and yield increase rather than cup improvement	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.04	There are a number of different colour fruiting varieties. These include red, yellow, orange and pink	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)



# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
1.02.05	Identify the two main strands of commercial Arabica cultivars as being mostly derived from Typica and Bourbon	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.06	Define a Catimor as being a hybrid plant with both Arabica and Robusta genes. Explain that it is categorised as Arabica in production statistics	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.07	Explain that different varieties will have different shape characteristics e.g. Pacamara/Maragogipe. Apply this knowledge to their different behaviour in grading	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.08	Different species of coffee are suited to different climates	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.09	There are limits within tropics of where you can grow certain species	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.10	No one variety of Arabica is preferential the cup to others. Different varieties of species will perform better in different micro-climates	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.11	Some farms use shade and others do not. The decision to grow under a monoculture system or diverse shade system is multi-faceted. Some factors include: <ul style="list-style-type: none"> <li>• Farm system</li> <li>• Local climate</li> <li>• Environment</li> <li>• Finance</li> <li>• Certification</li> </ul>	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.12	Recall the optimum conditions for both species in: <ul style="list-style-type: none"> <li>• Rainfall</li> <li>• Soils</li> <li>• Temperature Range</li> <li>• Soil Depth</li> </ul>	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)

# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
1.02.13	Explain that coffee Arabica is typically a one crop plant but long and short rains will lead to two crop cycles (known as a main and fly crop)	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.14	Explain that coffee is biennial in nature and has a large crop year followed by a vegetative year. Recognise that this will impact on global production statistics	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.15	Explain that coffee is naturally a plant that exists in a shaded environment	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.02.16	Recognise some of the factors that determine if shade may be used on a coffee farm	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.03.01	<b>WHAT PART OF THE WORLD DOES COFFEE GROW?</b> Coffee species are limited and affected by: <ul style="list-style-type: none"> <li>• Altitude range</li> <li>• Latitude</li> <li>• Longitude</li> </ul> <p>As well as placing limits on coffee farmers in the way coffee grows, this also has an impact on cup characteristics</p>	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.03.02	Recognise that cup characteristics come in part as a direct result of where a coffee grows	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.03.03	Explain that altitude in particular has an important role to play in determining cup quality	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
1.03.04	Distinguish between a high altitude Arabica and a low grown Arabica processed by the same method from the same origin in a cupping assessment	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)

# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
<b>2.0 WORLD PRODUCTION</b>			
<b>2.01.01</b>	<b>GLOBAL PRODUCTION STATISTICS</b> Know where to access global production and consumption statistics	L3/L4	ICO
<b>2.01.02</b>	Be aware of change over time in statistics	L3/L4	ICO
<b>2.01.03</b>	Recognise that general global coffee production and consumption impact on the speciality coffee world	L3/L4	ICO
<b>2.01.04</b>	The changing global production and consumption statistics impact on the cost of coffee	L3/L4	ICO
<b>2.01.05</b>	There is a changing difference between the split of natural and washed process – this may be different to the perception of a speciality coffee professional	L3/L4	ICO
<b>2.01.06</b>	Market fluctuations affect the balance of species and process	L3/L4	ICO
<b>2.01.07</b>	Explain that world production in volume and location is constantly evolving	L3/L4	ICO
<b>2.01.08</b>	Identify where the dynamic growth in global production is	L3/L4	ICO
<b>2.01.09</b>	Recognise that evolution of consumption is changing and is linked to the evolution of supply	L3/L4	ICO
<b>3.0 FARMING</b>			
<b>3.01.01</b>	<b>LAND TENURE</b> Recognise that farms of different sizes grow coffee	L3	
<b>3.01.02</b>	Certification is sometimes applicable to certain land tenure types	L3	
<b>3.01.03</b>	Certification is sometimes applicable to the farming system e.g. Agro forest vs monoculture	L3	
<b>3.01.04</b>	Shade balances biennial nature. This is often linked to certification requirements	L3	
<b>3.01.05</b>	Distinguish between the term smallholder and farm	L3	
<b>3.01.06</b>	Link certification to land tenure	L3	

# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
<b>3.02.01</b>	<b>PLANT MANAGEMENT</b> Coffee needs fertilizers and pesticides as part of the farming system to maintain productivity. What inputs are used on a farm is dictated by many factors including: <ul style="list-style-type: none"> <li>Economic cost</li> <li>Certification</li> <li>Local availability</li> <li>Technical knowledge</li> </ul>	L3	
<b>3.02.02</b>	Explain that pruning ensures productivity and quality	L3	
<b>3.02.03</b>	Fertilizers and pesticides are part of the system but are limited by certification requirements	L3	
<b>4.0 PROCESSING METHODOLOGY</b>			
<b>4.01.01</b>	<b>PROCESSING</b> Recognise that processing is common to all coffees because you have to harvest the seed from the cherry in some way	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
<b>4.01.02</b>	The core elements of coffee remain common to all methods of processing but some are used in different ways depending on process	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
<b>4.01.03</b>	Farmers and buyers talk about different weight categories including: <ul style="list-style-type: none"> <li>Red cherry</li> <li>Parchment</li> <li>Clean green</li> </ul>	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
<b>4.01.04</b>	Identify all elements of a cross section picture of coffee	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
<b>4.01.05</b>	Understand that only 18 - 20% coffee weight is the final green coffee we roast. Recognise other elements of coffee that we remove through processing including water	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
<b>4.01.06</b>	Explain what mucilage is and apply knowledge of this to processing methods	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
<b>4.01.07</b>	Recognise that coffee is stripped at the end of the season to prevent disease	L3/L4	Espresso Coffee A. Illy R. Viani (2005)





## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.02.01	<b>PICKING</b> Different ratios of ripe to slightly over ripe depending on process	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  SCAA Arabica Coffee Defect Handbook
4.02.02	Amount of water to be evaporated is key to the success of drying and certain process methodologies	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  SCAA Arabica Coffee Defect Handbook
4.02.03	Poor quality picking can lead to mixed quality roast	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  SCAA Arabica Coffee Defect Handbook
4.02.04	Explain that fully ripe coffee has a moisture content of 60 – 65% and that over ripe can have as little as 30 – 35%	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  SCAA Arabica Coffee Defect Handbook
4.02.05	Identify a quaker in a roasted sample and in a cupping assessment	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  SCAA Arabica Coffee Defect Handbook
4.02.06	Recognise the link between level of ripening and moisture in the final cup quality	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  SCAA Arabica Coffee Defect Handbook
4.03.01	<b>WASHED PROCESS</b> Discuss the uses of floatation tank in removing defective coffee	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)



## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.03.02	Review different pulper types including: <ul style="list-style-type: none"> <li>Vertical disc</li> <li>Horizontal drum</li> <li>Eco</li> </ul>	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)
4.03.03	Discuss that each uses different amounts of water but do the same job. Where quality begins to change is mucilage removal	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)
4.03.04	Discuss different types of fermentation tanks and how they are used	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)
4.03.05	Differentiate between ferment and mechanical mucilage removal	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)
4.03.06	Channelling	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)



## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.03.07	Post channelling and fermentation soaking takes place in some parts of the world	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)
4.03.08	Explain and correctly sequence the basic flow of the washed process including: <ul style="list-style-type: none"> <li>• Cherry quality separation</li> <li>• Floatation tank</li> <li>• Washer separator</li> <li>• Pulping</li> <li>• Fermentation/ Mechanical mucilage removal</li> <li>• Channelling</li> <li>• Soaking</li> <li>• Drying</li> </ul>	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)
4.03.09	Explain the reason for carrying out each stage outlined above. E.g. channelling ensures all mucilage is removed from coffee and separates beans by density separate quality and potential value	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)
4.03.10	Differentiate between fermentation and mechanical mucilage removal	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)
4.03.11	Relate how control of these steps impacts on end results and final cup quality	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  ITC Exporters Guide (2011)



# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.04.01	<p><b>NATURAL PROCESS</b> This is the most common form of process in the world</p>	L3	<p>Espresso Coffee A. Illy R. Viani (2005)</p> <p>Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)</p> <p>ITC Exporters Guide (2011)</p>
4.04.02	<p>Less inputs are required and it uses less water than the washed method</p>	L3	<p>Espresso Coffee A. Illy R. Viani (2005)</p> <p>Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)</p> <p>ITC Exporters Guide (2011)</p>
4.04.03	<p>Discuss how process influences quality both on positive and negative side</p>	L3	<p>Espresso Coffee A. Illy R. Viani (2005)</p> <p>Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)</p> <p>ITC Exporters Guide (2011)</p>
4.04.04	<p>Discuss how farmers manage process to optimise quality</p>	L3	<p>Espresso Coffee A. Illy R. Viani (2005)</p> <p>Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)</p> <p>ITC Exporters Guide (2011)</p>
4.04.05	<p>There is more risk associated in having unseen defects with the natural process until milling</p>	L3	<p>Espresso Coffee A. Illy R. Viani (2005)</p> <p>Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)</p> <p>ITC Exporters Guide (2011)</p>

# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.04.06	<p>Explain and correctly sequence the basic flow of the natural process including:</p> <ul style="list-style-type: none"> <li>• Winnowing</li> <li>• Cherry quality separation</li> </ul>	L3	<p>Espresso Coffee A. Illy R. Viani (2005)</p> <p>Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)</p> <p>ITC Exporters Guide (2011)</p>
4.04.07	<p>Explain the reason for carrying out each stage outlined above. E.g. Relate how control of these steps impacts on end results and final cup quality</p>	L3	<p>Espresso Coffee A. Illy R. Viani (2005)</p> <p>Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)</p> <p>ITC Exporters Guide (2011)</p>
4.05.01	<p><b>PULPED NATURAL PROCESS</b> Recognise that this is different to the washed and natural process</p>	L3/L4	<p>Espresso Coffee A. Illy R. Viani (2005)</p>
4.05.02	<p>Recall that coffee is pulped and mucilage is left on the seeds prior to drying</p>	L3/L4	<p>Espresso Coffee A. Illy R. Viani (2005)</p>
4.05.03	<p>Cherry selection in terms of ripeness and quality is more similar to the washed than the natural process</p>	L3/L4	<p>Espresso Coffee A. Illy R. Viani (2005)</p>
4.05.04	<p>Sugars migrate to seed and hence sweeter cup</p>	L3/L4	<p>Espresso Coffee A. Illy R. Viani (2005)</p>
4.05.05	<p>Discuss the impact of removing different amounts of mucilage on the end cup</p>	L3/L4	<p>Espresso Coffee A. Illy R. Viani (2005)</p>
4.05.06	<p>Explain and correctly sequence the basic flow of the pulped natural process including:</p> <ul style="list-style-type: none"> <li>• Cherry quality separation</li> <li>• None or partial mucilage removal</li> <li>• Drying</li> </ul>	L3/L4	<p>Espresso Coffee A. Illy R. Viani (2005)</p>

## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.05.07	Explain that skin drying is harder for pulped natural coffees and define why	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.05.08	Explain the reason for carrying out each stage outlined above. E.g. Removing none or a small amount of mucilage changes the cup characteristics	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.05.09	Relate how control of these steps impacts on end results and final cup quality	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.05.10	Recognise that this process sometimes has different names such as honey or semi dry	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.01	<b>DRYING</b> On a raised bed a parchment depth of 2-4cm best for quality in parchment. This is 4-6cm for whole cherry	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.02	Over 4cm (parchment) & 6cm (cherry) increases risk of off flavours and mould	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.03	Discuss how some defect removal takes place on the raised beds or patios	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.04	Drying must be on impervious material patio or beds to prevent the risk of ocratoxin	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.05	Constant raking is necessary to obtain quality defect free coffee	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.06	Covering at key times is vital to maintaining quality	L3/L4	Espresso Coffee A. Illy R. Viani (2005)

## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.06.07	Review the limits on mechanical drying	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.08	Explain basic drying protocol for each of the following processes: <ul style="list-style-type: none"> <li>Washed</li> <li>Pulped Natural</li> <li>Natural</li> </ul>	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.09	Distinguish between the correct and incorrect drying depths	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.10	Explain why and when coffee might be covered during drying	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.11	Define the correct target drying moisture content to be 12%	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.12	Recognise the following off flavours that result from poor drying: <ul style="list-style-type: none"> <li>Ferment</li> <li>Earthy</li> <li>Musty</li> </ul>	L3/L4	Espresso Coffee A. Illy R. Viani (2005)
4.06.13	Introduce students to what OTA is and the main reason for it occurring in coffee	L3	
4.06.14	Define OTA and explain where it's presence is likely to come from	L3	
4.07.01	<b>SEASONALITY AND CROP CYCLES</b> Coffee rests for minimum of 30 days and sometimes up to 120 days for quality	L3/L4	The importance of the resting period in the coffee grain aspect and beverage quality MY Rendon et al (2010)
4.07.02	Explain that coffee rested in husk or parchment for up to three months after processing has finished results in an improved and less astringent cup	L3/L4	The importance of the resting period in the coffee grain aspect and beverage quality MY Rendon et al (2010)
4.07.03	Explain that rested coffee also settles in equilibrium of TM/RH	L3/L4	The importance of the resting period in the coffee grain aspect and beverage quality MY Rendon et al (2010)



## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.07.04	Understand that different countries produce coffee at different times of the year	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.07.05	Generalise that there is a broad split between northern hemisphere and southern hemisphere countries. Harvesting seasons are usually in the drier winter seasons of a hemisphere	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.07.06	Understand that there is an optimum phase for every coffee. This optimum phase is a result of factors not completely understood but is related to terroir, processing quality and also processing methodology	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.07.07	Explain that each country has its own flower to fruit cycle, and therefore unique harvest conditions and season	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.07.08	Recognise that this harvest cycle sets the time in a year when the best coffee available from specific producing countries	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)





## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.07.09	Explain that generally that the crop cycle in a producing country will start with low grown areas, progressing up altitude ranges to high grown areas	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.07.10	Recognise that this will impact on shipping times	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.07.11	Coffee is constantly ageing and changing and that you are to make a choice accordingly	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.07.12	Recognise and understand the process flow of aged coffees and of monsoon Malabar including some historical referencing	L3	
4.08.01	<b>GRADING</b> Systems	L3	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.08.02	Understand that no universal grading and classification system exists	L3	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)



## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.08.03	There are positive grading variables. These include: <ul style="list-style-type: none"> <li>• Bean size</li> <li>• Altitude</li> </ul>	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.08.04	Different countries have different systems	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.08.05	Knowing these systems is an important aspect of buying and selling coffee, and of placing specific value on the coffee we drink	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.08.06	Demonstrate knowledge of coffee being classified by screen size	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.08.07	Recognise key screening references e.g. AA, A, AB Supremo	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)



## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.08.08	Demonstrate knowledge of coffee being classified by altitude range	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.08.09	Recognise key altitude references e.g. SHG/SHB/HG/HB	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.08.10	Understand that positive variables of grading change the value of coffee	L3/L4	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
4.08.11	Defects	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  SCAA Arabica Green Coffee Defect Handbook
4.08.12	Defects are anything that diverges from a normal bean inside the lot and that can be produced in the field or during the harvest, processing, transport or storage	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  SCAA Arabica Green Coffee Defect Handbook
4.08.13	Gravity separators are used to remove certain defects. They work because of density separation	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  SCAA Arabica Green Coffee Defect Handbook



# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
4.08.14	Explain that defects can come from a variety of sources through the supply chain and that there are visual and non-visual defects	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  SCAA Arabica Green Coffee Defect Handbook
4.08.15	Differentiate between the following different physical defects found in green coffee and correctly name them: <ul style="list-style-type: none"> <li>• Insect Damage</li> <li>• Black Bean</li> <li>• Stick/Stone</li> <li>• Sour</li> <li>• Broken/Chipped/Cut</li> <li>• Shell</li> <li>• Withered</li> <li>• Immature</li> <li>• Floater</li> <li>• Parchment/Husk</li> </ul>	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  SCAA Arabica Green Coffee Defect Handbook
4.08.16	Explain that there are also non-visual defects that are only present in the cup	L3/L4	Espresso Coffee A. Illy R. Viani (2005)  SCAA Arabica Green Coffee Defect Handbook
<b>5.0 MARKETS</b>			
5.01.01	<b>FUTURES MARKETS</b> Cash vs Futures Market	L3	ITC Exporters Guide (2011)
5.01.02	Explain the difference between a cash market and a futures market	L3	ITC Exporters Guide (2011)
5.01.03	Explain that futures prices are intended to reflect current and future supply and demand of coffee	L3	ITC Exporters Guide (2011)
5.01.04	SPOT Price		ITC Exporters Guide (2011)
5.01.05	Explain what a SPOT coffee sale or purchase is		ITC Exporters Guide (2011)
5.01.06	Spot coffees are sold on the basis of delivery within 14 days of sale		ITC Exporters Guide (2011)
5.01.07	Understand Differentials with reference to the market price and differing qualities of coffee	L3	ITC Exporters Guide (2011)
5.01.08	Explain a differential is the physical premium or discount represented in a +/- value given by the market for a given coffee	L3	ITC Exporters Guide (2011)

## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
5.01.09	Use a market price and differential to calculate the outright price for a coffee	L3	ITC Exporters Guide (2011)
5.01.10	Arbitrage	L3	ITC Exporters Guide (2011)
5.01.11	What is the difference between NY and London	L3	ITC Exporters Guide (2011)
5.01.12	Understand concept of dollar market	L3	ITC Exporters Guide (2011)
5.01.13	Understand Arbitrage	L3	ITC Exporters Guide (2011)
5.01.14	Explain the comparison of price	L3	ITC Exporters Guide (2011)
5.01.15	Relate this to quality comparison	L3	ITC Exporters Guide (2011)
5.01.16	Hedging	L3	ITC Exporters Guide (2011)
5.01.17	Explain what hedging is	L3	ITC Exporters Guide (2011)
5.01.18	What is the purpose	L3	ITC Exporters Guide (2011)
5.02.01	<b>CONTRACTS</b> Basics of a physical contract	L4	ITC Exporters Guide (2011) ECF
5.02.02	ECF contract terms	L4	ITC Exporters Guide (2011) ECF
5.02.03	Global organisations look after legislative control of green coffee. These include: <ul style="list-style-type: none"> <li>• ICO</li> <li>• ECF</li> <li>• GCA</li> <li>• NCA</li> </ul>	L4	ITC Exporters Guide (2011) ECF
5.02.04	Relate grading and pricing terminology already discussed to contract formulation	L4	ITC Exporters Guide (2011) ECF
5.02.05	Recognise shipping terms (see below) are important in terms of contracting	L4	ITC Exporters Guide (2011) ECF
5.02.06	Explain that samples for assessment of quality must be drawn within 21 days of landing	L4	ITC Exporters Guide (2011) ECF
<b>6.0 STORAGE AND TRANSPORTATION</b>			



## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
6.01.01	<b>TRANSPORT</b> Bagging Types	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin
6.01.02	Coffee is shipped in containers	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin
6.01.03	There are different bag types and weights	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin
6.01.04	Different bagging technologies are applicable for different qualities and shipping weights	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin
6.01.05	Countries have standard bag weights outside of the ICO average bag weight of 60kg	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin
6.01.06	Recognise that coffee is shipped almost exclusively by boat and in containers and that bag weights are different and material	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin

# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
6.01.07	Explain that different bagging technologies are available for different coffees and that hessian is the current standard bagging method	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin
6.01.08	Apply knowledge of different standard bag weights used in certain countries to total weights in contracts	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin
6.01.09	Match different origins with standard bag weights or contracts (If I buy 20 bags of Honduras, what is my net weight?)	L3/L4	Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)  The Coffees Produced Throughout the World (1992) by P Jobin
6.01.10	Coffee is hygroscopic and contains water so water condensation during shipping should be minimised to protect coffee quality	L3	ITC Exporters Guide (2011)  Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
6.01.11	Coffee shipped in containers without humectants may be damaged on arrival at the destination port	L3	ITC Exporters Guide (2011)  Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
6.01.12	Humectants are used in containers to prevent the air reaching dew point during shipment	L3	ITC Exporters Guide (2011)  Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)



## SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
6.01.13	Know what humectants are	L3	ITC Exporters Guide (2011)  Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
6.01.14	Name two types of humectant commonly used in shipment of coffee	L3	ITC Exporters Guide (2011)  Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
6.01.15	Explain that humectants are important in maintaining quality in speciality coffee	L3	ITC Exporters Guide (2011)  Espresso Coffee A. Illy R. Viani (2005)  Coffee: Growing, Processing, Sustainable Production JN Wintgens (2009)
6.01.16	RH and temp	L3	Espresso Coffee A. Illy R. Viani (2005)
6.01.17	Explain that storage is a factor of both RH and temp  60% RH @ 20°C	L3	Espresso Coffee A. Illy R. Viani (2005)
6.01.18	Incoterms	L3	Incoterms website  ITC Exporters Guide (2011)
6.01.19	Understand what incoterms are and key ones appropriate to coffee	L3	Incoterms website  ITC Exporters Guide (2011)
6.01.20	Relate Incoterms to different responsibilities when purchasing coffee	L3	Incoterms website  ITC Exporters Guide (2011)





# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
6.01.21	Shipping documents	L3	ECF
6.01.22	List the following documents as those that the seller is obliged to supply free of charge: <ul style="list-style-type: none"> <li>• Invoice</li> <li>• Complete set of bills of lading or a copy of the bill of lading</li> <li>• Certificate of weight</li> <li>• Certificate of insurance (CIF only)</li> <li>• ICO certificate</li> <li>• GSP Certificate</li> <li>• Phytosanitary certificate</li> <li>• Fumigation certificate</li> </ul>	L3	ECF
6.01.23	Landing protocol	L3	
6.01.24	That you have limited period to assess coffee for quality on landing	L3	
6.01.25	Explain how you check a bag origin on arrival to check authenticity (using the ICO reference and bill of lading)	L3	
6.01.26	Complete the process of checking coffee for key quality attributes to determine if it is on standard when landed	L3	
6.02.01	<b>STORAGE</b> Purchasing within seasons optimizes product quality	L3	ITC Exporters Guide (2011)
6.02.02	Green coffee does not have an infinite life in terms of cup quality	L3	ITC Exporters Guide (2011)
6.02.03	Understand that coffee changes in character over time	L3	ITC Exporters Guide (2011)
<b>7.0 CERTIFICATION</b>			
7.01.01	<b>CERTIFICATION</b> Discuss differences between certification including: <ul style="list-style-type: none"> <li>• RA</li> <li>• Utz</li> <li>• FLO</li> <li>• Organic</li> </ul>	L3	Certification system websites ITC Exporters Guide (2011)
7.01.02	Recognise the key differences between the goals of certification systems	L3	Certification system websites ITC Exporters Guide (2011)
7.01.03	Explain that certification is third party accreditation	L3	Certification system websites ITC Exporters Guide (2011)
<b>8.0 DECAFFEINATION</b>			



# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
8.01.01	Compare the legislative controls in North America and the EU	L3	Certification system websites ITC Exporters Guide (2011)
8.01.02	Review the basic process of decaffeination and outline common solvents	L3	Coffee: Recent Developments (2001) by RJ Clarke and OG Vitzthum
8.01.03	Recall the basic flow of decaffeination	L3	Coffee: Recent Developments (2001) by RJ Clarke and OG Vitzthum
8.01.04	Identify four methods of decaffeination	L3	Coffee: Recent Developments (2001) by RJ Clarke and OG Vitzthum
8.01.05	Explain what the basic legal criteria are	L3	Coffee: Recent Developments (2001) by RJ Clarke and OG Vitzthum
<b>9.0 EQUIPMENT AND MAINTENANCE</b>			
9.01.01	<b>SPACE REQUIREMENTS</b> Physical analysis space requires: <ul style="list-style-type: none"> <li>• All equipment</li> <li>• Non-reflective neutral counter</li> <li>• Extra counter space for green assessment</li> <li>• Dedicated lighting space</li> <li>• Black light analysis</li> <li>• Appropriate ergonomics</li> <li>• Adequate electricity/plumbing</li> <li>• Separate location from cupping</li> </ul>		Speciality Coffee: Managing Quality (2012) Oberthür et al  SCAA lab standards
9.01.02	Recognise the similarity between cupping lab requirements and those of a green coffee analysis space		Speciality Coffee: Managing Quality (2012) Oberthür et al  SCAA lab standards
9.01.03	Understand the need for specialized lighting such as black light		Speciality Coffee: Managing Quality (2012) Oberthür et al  SCAA lab standards
9.02.01	<b>SIZING SCREENS</b> Coffee sizing screens are used to determine if samples of coffee meet a grade or specification	L3	ITC Exporters Guide (2011)  The Coffees Produced Throughout the World (1992) by P Jobin



# SCAE COFFEE DIPLOMA: GREEN COFFEE

SUB CODE	KNOWLEDGE/SKILL REQUIRED	STANDARDS	REFERENCE
9.02.02	Use coffee sizing screens to determine if samples meet a contract specification	L3	ITC Exporters Guide (2011) The Coffees Produced Throughout the World (1992) by P Jobin
9.03.01	<b>MOISTURE METERS</b> There are different methodologies of xxxxx	L3	Manufacturer Manual
9.03.02	Know how to use conductivity moisture meters	L3	Manufacturer Manual
9.03.03	Explain that there are different types of moisture meter available	L3	Manufacturer Manual
9.03.04	Explain that different moisture meters have different tolerances and apply this knowledge to daily testing	L3	Manufacturer Manual
<b>10.0 PLANNING AND FINANCIAL MANAGEMENT</b>			
	Not required		

## SCAE COFFEE DIPLOMA: GREEN COFFEE

Word or Term	Proposed Description	Source
<b>Caffeine</b>	A bitter alkaloid compound present in the coffee bean that has a dose dependent action on the human body	
<b>Cash Market</b>	Participants buy and sell physical green coffee that will be delivered either immediately or promptly. The cash transaction therefore involves the transfer of ownership of a specific lot of a particular quality of physical coffee	ITC
<b>Certification</b>	A guarantee that specific rules and regulations of voluntary standards are met in a certain environment (e.g. individual producer, producer group, co-operative, or even region)	ITC
<b>Clean Coffee</b>	A well graded coffee, free of defects	Wintgens
<b>Coffee Cherry</b>	The flesh fruit of the coffee tree	Wintgens
<b>Coffee Farm</b>	A specialised coffee farm where: <ul style="list-style-type: none"> <li>workers who are not family members carry out the majority of work on the farm</li> <li>profit rather than subsistence is a primary goal</li> </ul>	
<b>Decaffeinated Coffee</b>	A coffee where the majority of caffeine has been removed by physical process and solvent medium. Specifically in EU countries there has to be a maximum concentration of 0.1% related to the dry mass	
<b>Fermentation Tank</b>	A specially designed tank, usually made of concrete, and often varying in shape and size with a sloped bottom. They are built for the natural fermentation and degradation of mucilage from coffee	
<b>Futures Market</b>	Participants buy and sell a price for a standard quality of coffee. The futures transaction centres around trading a futures contract based on a physical coffee at a price determined in an open auction – the futures market	
<b>Grading</b>	The process of separating green coffee by size, shape, density, colour and cup characteristics to defined standards prior to sale or export	
<b>Mechanical Drier</b>	Static or moving mechanical driers that force heated air through coffee to remove moisture until it reaches 12% total moisture	
<b>Mucilage</b>		
<b>Natural Process</b>	The whole cherries are dried on patios or racks under the sun or in mechanical driers	Illy
<b>Non Visual Defect</b>	Off tastes present in coffee only detectable by cup testing	Paraphrased from Illy
<b>Parchment/Pergamino</b>	The endocarp or inner skin surrounding the coffee. Coffee remains in this skin after the washed or pulped natural process and is kept form until milled	
<b>Patio</b>	Drying grounds for parchment coffee and cherries, usually made of concrete or asphalt and built on a slight incline to help drain rainwater	Paraphrased from Wintgens

# SCAE COFFEE DIPLOMA: GREEN COFFEE

Word or Term	Proposed Description	Source
<b>Pulped Natural Process</b>	The cherries are pulped and the beans in parchment dried while surrounded by the mucilage	Illy
<b>Pulper</b>	A type of machine that removes the pulp, and sometimes part of the mucilage, from the coffee cherry	
<b>Raised (African) Bed</b>	Flat wire or plastic mesh trays assembled on table legs ... used to dry parchment coffee	Paraphrased from Wintgens
<b>Screen Size</b>	<p>Coffee is graded by size using rotating or shaking screens.</p> <p>Screen sizes are expressed as numbers (e.g. Screen 16) or as letters (AA).</p> <p>Screen sizes are either measured in 64ths of one inch e.g. screen 18 (18/64 inch) or by mm against a comparable ISO scale (7.10mm).</p> <p>Slotted screens with oblong slits (usually 4.5mm or 5mm ) are used to remove peaberries</p>	Paraphrased from ITC
<b>Selective Picking</b>	The hand picking of ripe cherries only	Wintgens
<b>Smallholder</b>	<p>A small producer of coffee where:</p> <ul style="list-style-type: none"> <li>• Farm work is mostly done by members and their families</li> <li>• They do not hire workers all year round</li> </ul>	Fairtrade Labelling Organisation (2009)
<b>Species</b>	A group of interbreeding individuals having some common characteristics not normally able to interbreed with other such groups	Wintgens
<b>Strip Picking</b>	Also known as 'milking' it consists of removing all the cherries present on a branch irrespective of their degree of ripeness	Wintgens
<b>Total Moisture</b>	The combined total of free and bound moisture in coffee expressed as a percentage	
<b>Variety</b>	A sub division of species	
<b>Visual Defect</b>	Anything that diverges from a normal bean inside the lot and that can be produced in the field or during the harvest, processing, transport or storage	Illy
<b>Washed Process</b>	The removal of the pulp by a pulper followed by the removal of the mucilage from the parchment which can be accomplished either mechanically, by the use of chemical products, or by fermentation	Illy
<b>Yield</b>	<p>The weight or volume of the harvest that has an economic value</p> <p>Average yield ranges by species (kg beans/ha) are:            Arabica: 1500 - 3000            Robusta: 2300 - 4000</p>	<p>Wintgens</p> <p>ICO</p>