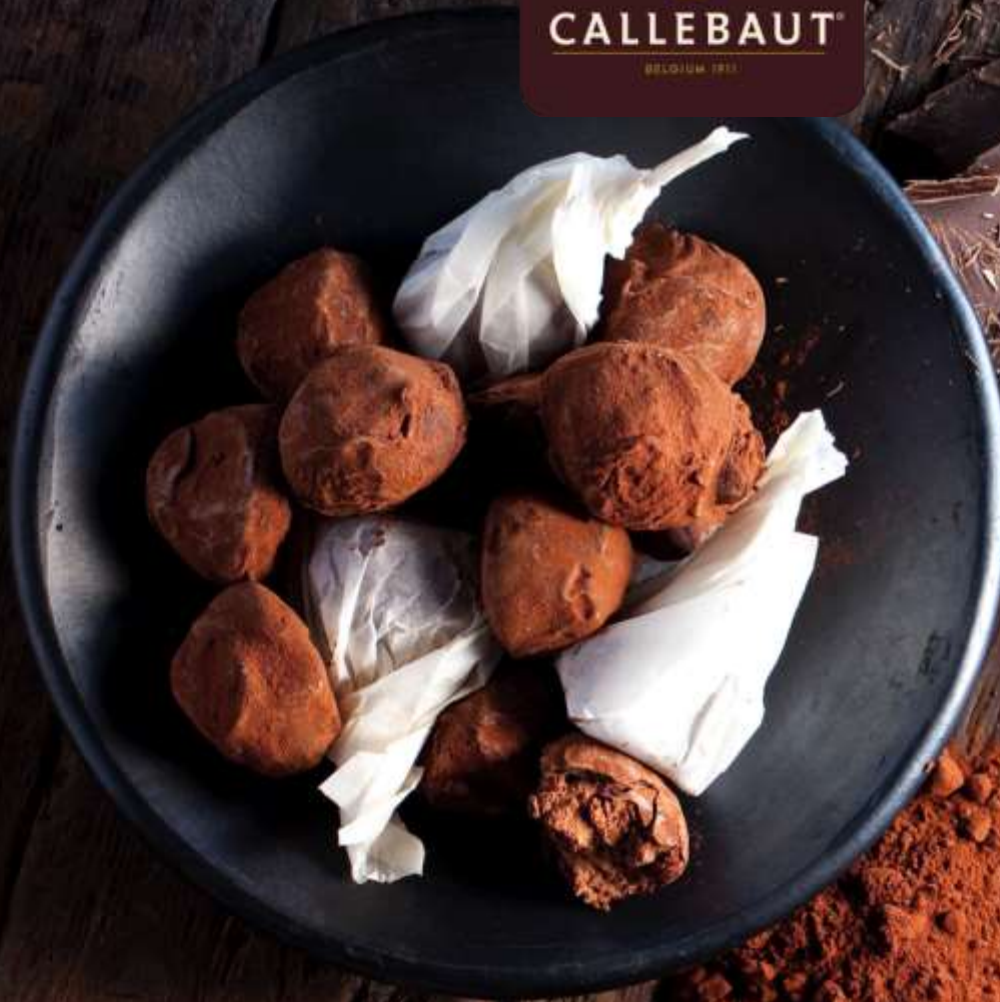




**CALLEBAUT**

BELOIUM 1851



# Callebaut Chocolatier Event

Copenhagen, 27/01/2016



# How flavour is built in chocolate...



How flavour is built in chocolate?

## Accreditation

### **leme Blondeel**

Biochemist

10 years of experience in cocoa/chocolate in Global R&D

Visited and worked in cocoa plantations in Africa, S-America and Asia

Global fermentation project member

Led cocoa productions in US, France, UK, Ivory Coast and Malaysia

Participated in chocolate productions in US, Mexico, France and Belgium

Taste experience was developed especially in a recent cocoa origin project

**But, like most of us, my main driver is a passion for chocolate.**





# What impacts the final flavour of chocolate?

Type of bean

Type of fermentation

Bean roast/processing

Recipe development work

Conching

Usage in application

Order of importance





# Type of bean



Criollo

Forastero

Trinitario

Countries	Share of total exports of the country
Bolivia	100%
Colombia	95%
Costa Rica	100%
Dominica	100%
Dominican Republic	40%
Ecuador	75%
Grenada	100%
Indonesia	1%
Jamaica	100%
Madagascar	100%
Mexico	100%
Papua New Guinea	90%
Peru	90%
Saint Lucia	100%
São Tome and Principe	35%
Trinidad and Tobago	100%
Venezuela, Bolivarian Rep. of	95%





# Type of bean

In practise:

Forastero types or ~~PK~~

- If fermented well, best starting material for chocolate aroma
- Can have aromatic notes too!

Criollo and Trinitario

- Used for special tasting origin chocolates
- Used to add a special aromatic note to a chocolate
- May come without aromatic note too!



Forastero



Criollo



Trinitario







# Type of fermentation

Myth! “a perfect bean has been fermented for 5 to 7 days”

-> Depends on pulp, inherent flavour profile and desired outcome!

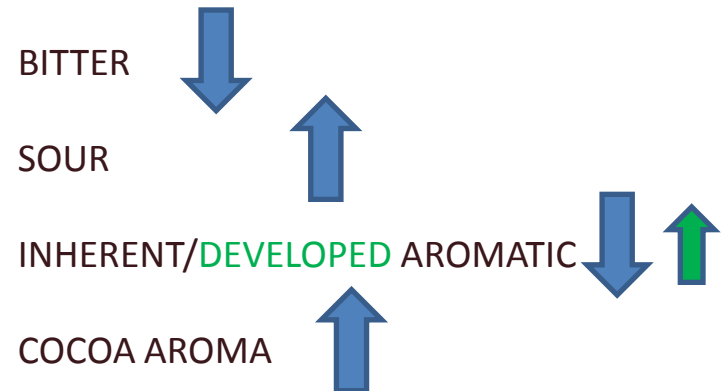
- BASKET
- BOX
- HEAP

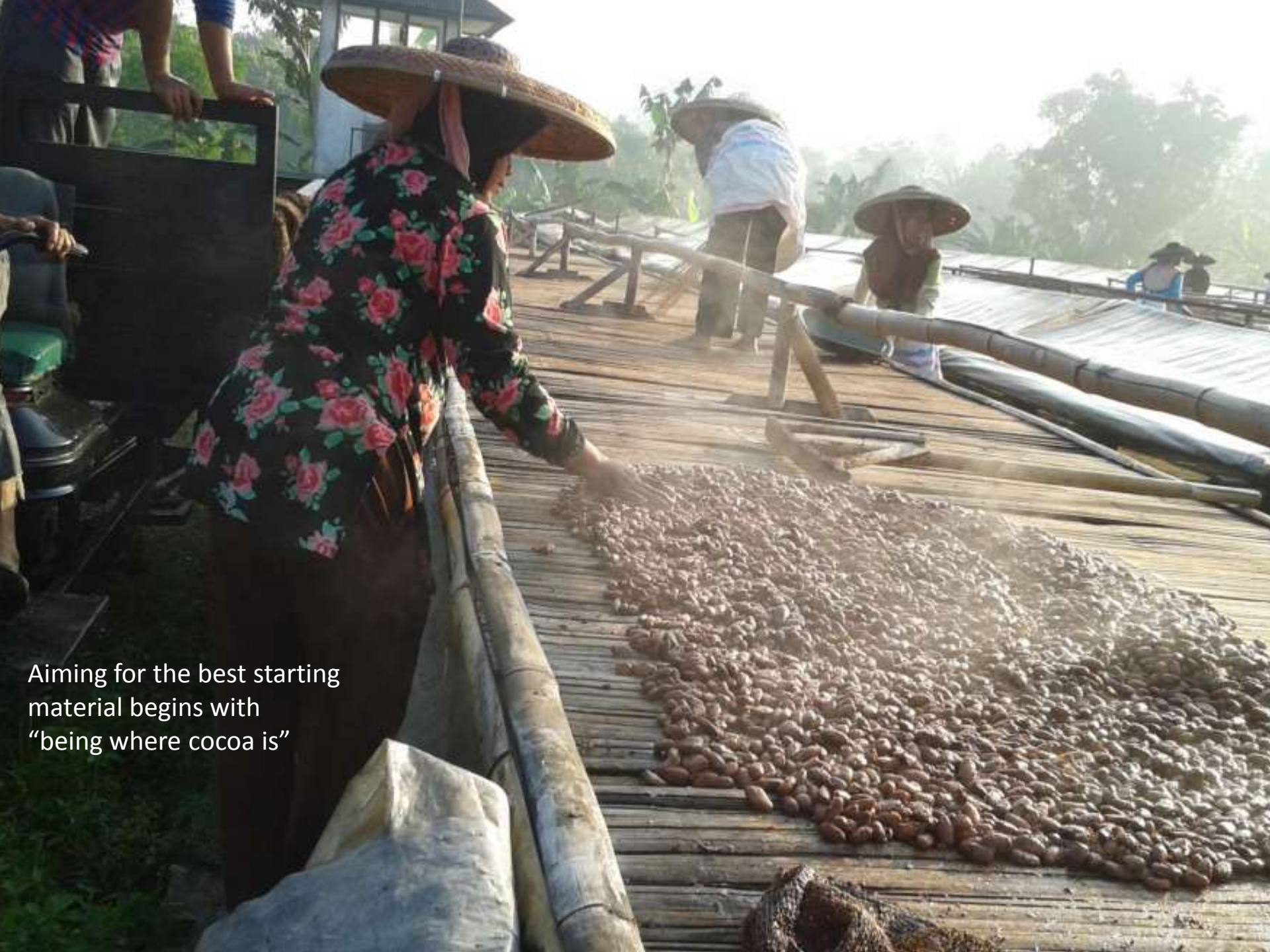
Different variations on above



COMPOSING THE  
FINEST CALLEBAUT  
BEAN BLEND

In general:





Aiming for the best starting material begins with "being where cocoa is"



# Roasting

Coffee: 165 – 245°C

Cocoa: 110 – 130°C =>delicate!

Many parameters!


- time, temperature
- Direct/indirect heating
- Pressure
- Oxygen
- Water
- Steam
- ...



Ingoing material is crucial!

Roasting needs to be adjusted to this...

BITTER: 

SOUR: 

INHERENT AROMA: 

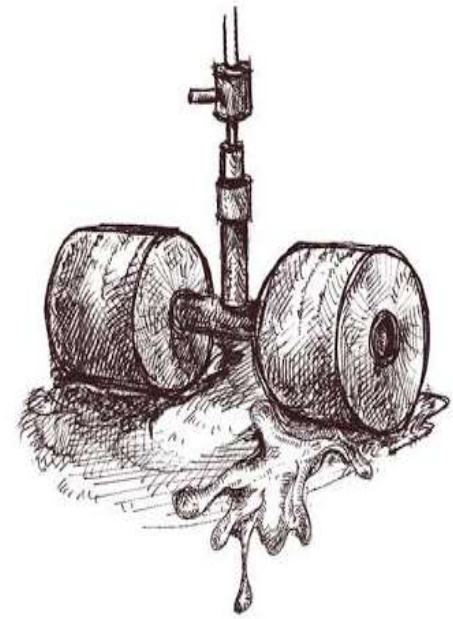
COCOA AROMA: 

=> The right type of cocoa AND fermentation!!!

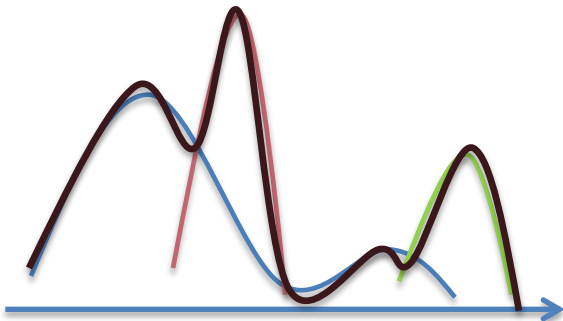


# Recipe dvpt and conching

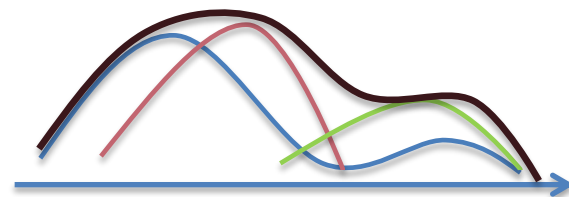
- Reducing moisture content
- Sour volatiles evaporation
- Chocolate aroma development (e.g. maillard)
- Reducing bitterness
  
- Homogenizing taste!



Like a chef blends different ingredients into the right particle size...



CONCHING THE  
CHOCOLATE  
FOR BALANCED  
TASTE





# Application



Will it make a difference?

Experts vs endconsumers

Will it be preferred by my customers?

Bitter intensity

Sweetness

Cocoa aroma

Homogeneous taste

Chocolate intensity

Fruitiness

Floral

Herbicious

Sour note



**CALLEBAUT®**

BELGIUM 1911



Help us grow great chocolate...