



HACCP PLAN FOR CHOCOLATE INDUSTRY

م/ اشرف شعبان يوسف



- ١ - اسم المنتج (s) Product Name : الشوكولاتة **CHOCOLATE**.
- ٢ - أوصاف مهمة للمنتج (النشاط المائي ، تركيز أيون الهيدروجين ، مواد حافظة ، الخ ..) (Important Product Characteristics (aw,ph,salt,preservatives)
الكاكاو (الكاكاو) الكاكاو أو الكاكاو / الشوكولا هو المنتج الذي يتم الحصول عليه من كتلة الكاكاو ، والذي يتم الحصول عليه من حبوب الكاكاو ذات الجودة التجارية التي تم تنظيفها وتحريرها من الأصداف بشكل شامل كما هو ممكن من الناحية الفنية مع / بدون تحميص ، ومع / بدون إزالة أو إضافة أي من مكوناته
Cocoa (Cacao) Mass or Cocoa/Chocolate Liquor is the product obtained from cocoa nib, which is obtained from cocoa beans of merchantable quality which have been cleaned and freed from shells as thoroughly as is technically possible with/without roasting, and with/without removal or addition of any of its constituents
- ٣ - كيفية الإستعمال (How it is Being Used) **.Ready-to-eat:**
- ٤ - التعبئة (Packaging) :
 - cardboard tray (bar boat)
 - corrugated cardboard boxes
 - cello or shrink wrap
 - plastic forms/trays
 - cardboard boxes
- ٥ - فترة الصلاحية (Shelf Life) **.If it is cooling 6-8 Months:**
- ٦ - أين سيبيع (weher it Will Be Sold) **.Retail- Restaurants**. (البيع بالتجزئة - المطاعم)
- ٧ - تعليمات الملصق (Labeling Instruction) :
 - Name of the food
 - Declaration of minimum cocoa content
 - Labeling of non retail containers
- ٨ - توزيع / تخزين خاص (Special distributions) :تخزن في مخازن مبردة و مستوى رطوبة منخفض لمنع حدوث اسالة للمنتج و يباع و يعرض مبرد.



Raw Ingredients المواد الخام

Cocoa Butter •

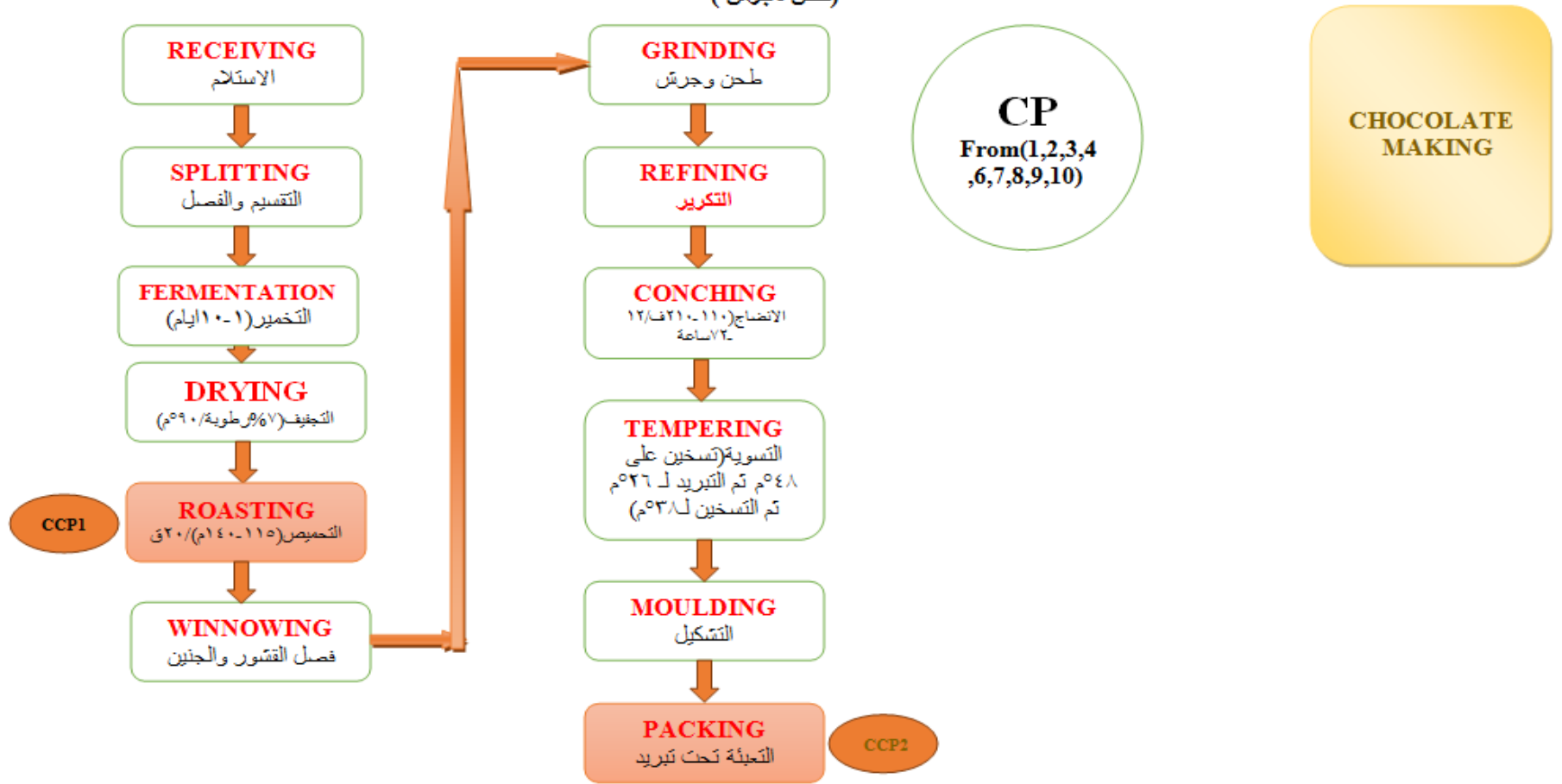
Fat-free Cocoa Solids •

Total Cocoa Solids •

مواد أخرى غير المواد الخام Others Not Ingredients

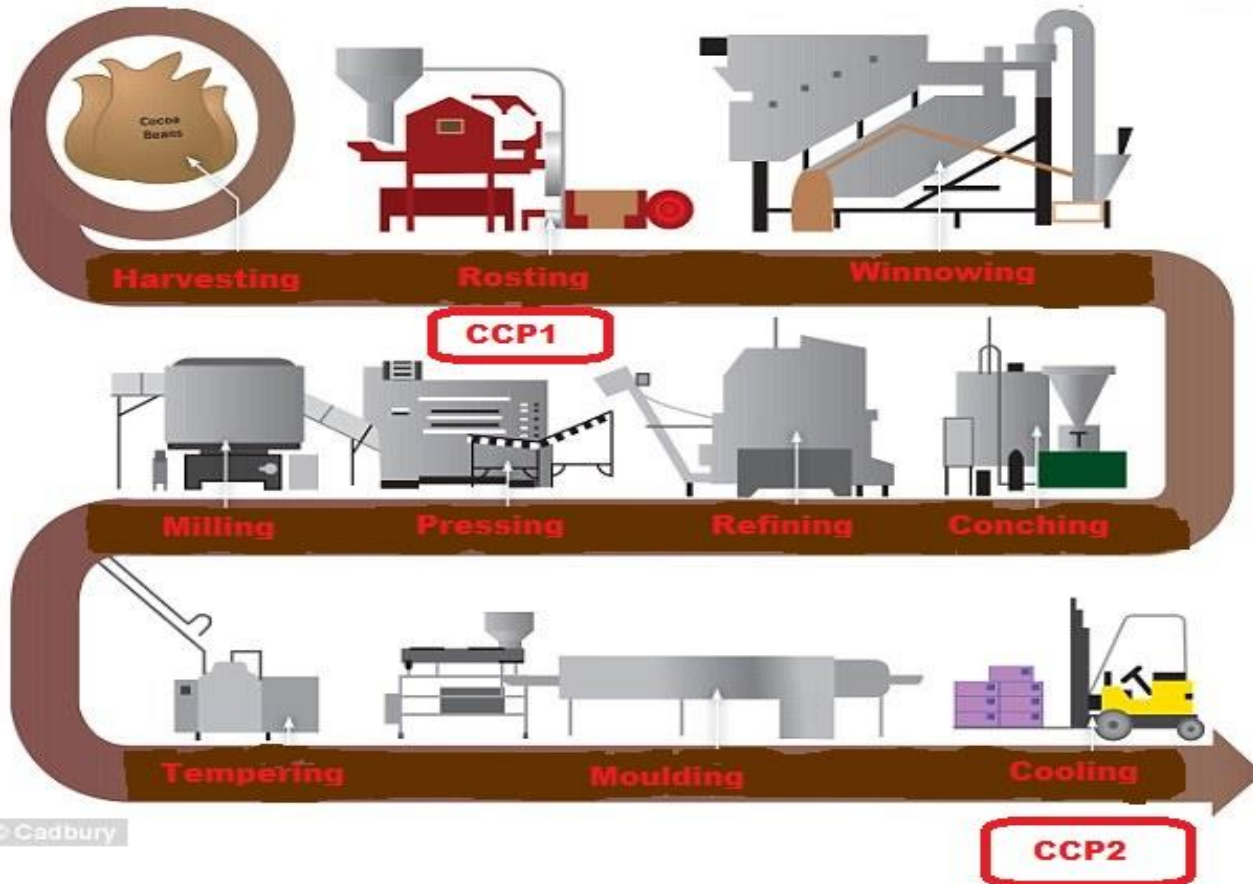
- Acidity regulators, antioxidants, bulking agents, colours (for surface decoration purposes only), emulsifiers,
- glazing agents and sweeteners used in accordance with Tables 1 and 2 of the General Standard for Food Additives
- (CODEX STAN 192-1995) in food category 05.1.4 (Chocolate and chocolate products) and its parent
- food categories are acceptable for use in foods conforming to this Standard. Only certain Table 3 food additives (as indicated in Table 3) are acceptable for use in foods conforming to this Standard.

نموذج ٣ : مخطط تدفق العمليات مع تحديد المخاطر المحتملة ونقاط التحكم الحرجة (From #3 : Process Flow Diagram)
(طحن - جرش)





the chocolate factory



Layout

FOR

CHOCOLATE



HAZARD ANALYSIS

PROCESSING STEPS	PHYSICAL HAZARD	CHEMICAL HAZARD	BIOLOGICAL HAZARD
1)RECEIVING	Wood, chaff, plant materials	<u>pesticides</u> , fertilizers	Worms ,insects
2)SPLITTING	Metal pieces	Chemicals from <u>equipments</u>	Contamination from handlers
3)FERMENTATION	Wood pieces	-	Microbes (Salmonella spp)
4)DRYING	Dust , foreign matters	-	<u>mold</u>
5)ROASTING	-	-	Microbial growth due to insufficient roasting
<u>5)WINOWING</u>	Dust ,foreign matters in air	Polluted air contamination	Microbes (contaminated air)
7)GRINDING	Metals	Chemicals from <u>equipments</u>	Microbial contamination



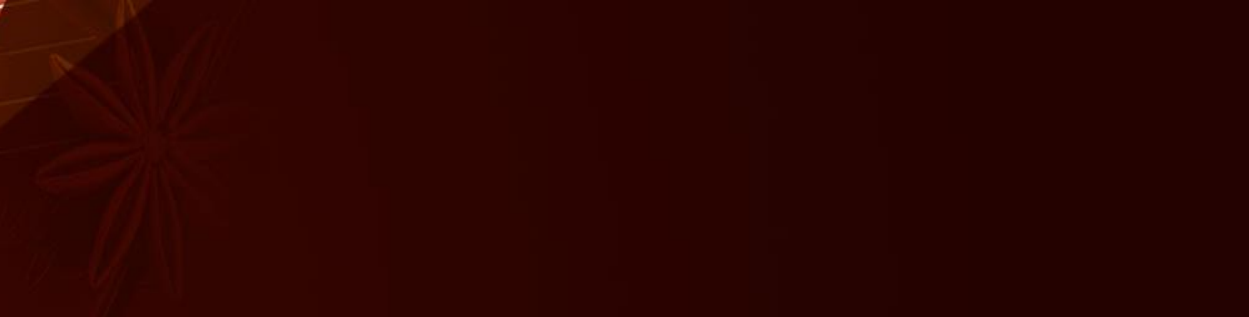
PROCESSING STEPS	PHYSICAL HAZARDS	CHEMICAL HAZARDS	BIOLOGICAL HAZARDS
8)CONCHING	Stone and other materials from raw materials	-	Microbial contamination
9)TEMPERING	Metal fragments	Contamination from <u>poorely</u> maintained equipment	-
10)MOULDING	Dust <u>particles</u> , <u>plastic</u> materials	-	<u>Uncleaned</u> <u>moulds</u>
11)PACKING	Foreign matter	<u>Labelling</u> ink and packaging material	-





CONTROL MEASURE AND CRITICAL CONTROL POINT

PROCESSING STEPS	CONTROL MEASURES	CRITICAL CONTROL POINT/CONTROL POINT
RECEIVING	P-sorting C-chemicals free materials B-proper building setting	CP1
SPLITTING	P-magnetic <u>seperator</u> C-sanitize the equipment B-personnel hygiene	-
FERMENTATION	P-visual inspection B-proper maintenance of fermentation tanks	CP2
DRYING	P-visual inspection B-proper maintenance of time and temperature	CP3



PROCESSING STEPS	CONTROL MEASURES	CRITICAL CONTROL POINT/CONTROL POINT
ROASTING	B-Roasting of cocoa beans in stated period of time and temperature	CCP1
WINNOWING	P, <u>C</u> , <u>B</u> -use of air filters	CP4
GRINDING	P-visual inspection C-sanitize the equipment B-sanitize the equipment	-
CONCHING	P-Visual inspection B-proper maintenance of equipment	CP5
TEMPERING	P-visual inspection C-Sanitize the equipment	CP6
MOULDING	P, <u>B</u> -Use of properly maintained <u>moulds</u>	CP7
PACKING	P-Use of metal detectors C-Use of appropriate packaging material and <u>labelling ink</u>	CCP2



CRITICAL LIMITS

CCP1 -Roasted in special ovens at temperatures between 105-120°C. The actual roasting time depends on whether the end use is for cocoa or chocolate.

CCP2 - Wrapping of chocolate done at aseptic condition.



MONITORING

- **1)RECEIVING**

CHECK :Visual inspection of incoming goods

RECORD : presence or absence of contamination

- **2)SPLITTING**

CHECK: Regular inspection of equipment

RECORD: Record any resulting maintenance

CHECK : Supervisory check of personnel hygiene

RECORD : Record any incident of poor personnel hygiene on personnel record

- **3)FERMENTATION**

CHECK : proper checking of fermentation tanks

RECORD : presence or absence of contamination



- **4) DRYING**

- **CHECK** :Drying temperature and time
- **RECORD** : temperature and time is noted.

- **5) ROASTING**

- **CHECK** : Proper temperature and time for roasting
- **RECORD** : Temperature and time is noted

- **6) WINNOWING**

- **CHECK** : Personnel hygiene and sanitation of equipment
- **RECORD** : Record any incident of poor personnel hygiene on personnel record

- **7) GRINDING**

- **CHECK** : Visual inspection
- **RECORD** : record any resulted maintenance



- **8)CONCHING**

- **CHECK** : Regular inspection of equipment
- **RECORD** : record any resulted maintenance

- **9)TEMPERING**

- **CHECK** : Regular inspection of equipment
- **RECORD** : record any resulted maintenance

- **10)MOULDING**

- **CHECK**: Proper maintenance of moulds

- **11)PACKING**

- **CHECK** : Visual control
- **RECORD** : Packaging checks.



CORRECTIVE ACTIONS

1)RECEIVING

- Reject contaminated cocoa pods

• 2)SPLITTING

- Maintain personnel hygiene and equipment sanitization

3)FERMENTATION

- Provide good condition to avoid microbial attack

• 4)DRYING

- Dry the product to stated period

• 5)ROASTING

- Roasted to stated time and temperature

• 6)WINNOWERING

- Provide good quality of air



7)GRINDING

- Proper maintenance of equipment

8)CONCHING

- Raw material maintenance

9)TEMPERING

- Proper Cooling and heating

10)MOULDING

- Product will be retained and reworked or discarded

11)PACKING

- Maintain aseptic condition and proper cleaning of packaging plant

