

CONTENT

	Page	
I	Introduction	1
	Historical development of the industry	1
	Criteria for setting up an industry	1
	Crop availability	2
	Labour availability	2
	Skill of labour	2
	Finance	3
	Availability of plant and equipment	3
	Availability of power and water	4
	Availability of know-how	4
	Availability of marketing acumen	4
	Economics of cashew nut processing	5
II	The Cashew Nut	7
	Description	7
	The cashew tree	8
	Crop collection	9
	Quality assessment	10
III	Drying and Storage of the Raw Material	11
	Sun drying	11
	Drying grounds	11
	Tools for use in drying grounds	12
	Construction of drying grounds	13
	Critical time for drying	13
	Storage conditions – methods : bags	14
	Storage conditions – methods : bulk	14
IV	Processing – General	17
	Use of pressure	17
	Use of low temperature	17
	Hot oil method	18
	Flow sheet	19
	More general remarks regarding processing	18
V	Cleaning, Sizing and Conditioning	21
	Small scale cleaning and conditioning	21
	Medium scale cleaning and conditioning	22
	Large scale cleaning and conditioning	25
	Another method of cleaning, sizing and conditioning	26
	Sizing	26
VI	Roasting and Centrifuging	28
	Definition of roasting and centrifuging	28
	Open pan method of roasting	28
	Drum roasting	30
	Modified drum roasting	31
	Hot oil method	33
	Simple process	33
	Larger scale non-mechanical method	34
	Peirce leslie method	35

	De Smet plant	38
	Cooling of roasting baths	39
VII	Shelling – Manual	40
	Equipment requirements	40
	Wood ash	40
	Shelling method	41
	Inspection	42
	Protection from CNSL irritation	43
	Speedy processing after shelling	45
VIII	Shelling – Mechanical	46
	“Hot Oil” process used in preparation	46
	Exceptions where “cold process” is used	46
	Brief description of Oltremare process	46
	Brief description of Tropical Products Institute Process	47
IX	Drying and Peeling	51
	Description of early driers	51
	An improved drier	52
	Manual peeling	54
	Preliminary separation into grades	55
	Cleanliness	55
	Mechanical peeling	57
X	Grading and Packing	58
	Description of Grades	58
	Grading by hand	60
	Check on count	60
	Separating pieces	61
	Scorched grades	61
	Mechanization	61
	Moisture content and measurement	61
	Packing – Tins	62
	Packing – Closures	63
	Packing – Vita pack process	63
	Packing – Advantage of carbon dioxide	65
	Packing – Case or carton	65
XI	Infestation	67
	The enemy	67
	The defence	67
	Fumigation of equipment	67
	Fungal infestation	68
XII	Marketing	70
	U.S.A. practice	70
	U.K. practice	71
	Local sales	72
	Off grades	72
	Grade differentials	72
XIII	The by-Products	73
	Cashew nut shell liquid (CNSL)	73
	Crude extraction	73
	Superheated steam method	74
	Expellers	74
	Solvent extraction	74
	Refining	75
	Mode of shipment : bulk	75

Mode of shipment : drums	75
The cashew apple	75
XIV Plant Layout and Records	76
Disposition of buildings	76
Recording	78
Appendix I : Specification for cashew kernels	82
List of illustrations	85
References	86