

CONTENTS

List of Equipment Manufactures	xiii
1. Introduction: The Manufacture of Concentrated Dried Products	1
References	4
2. Unsweetened Condensed Milk	7
2.1 Principles of the Production of Unsweetened Condensed Milk	7
2.2 Production of Unsweetened Condensed Milk	7
2.3 Quality and Process Control	30
2.4 Commercial Applications	35
References	35
3. Sweetened Condensed Milk	37
3.1 Principles of the Production of Sweetened Condensed Milk	37
3.2 Production of Sweetened Condensed Milk	37
3.3 Quality and Process Control	45
3.4 Commercial Applications	49
References	49
4. Other Condensed Milk Products	51
4.1 Condensed Skim Milk	51
4.2 Unsweetened Flavored Condensed Milk	53
4.3 Sweetened Condensed Skim Milk	53
4.4 “Block” Milk	53
4.5 Caramelized condensed Milk	54
4.6 Various Concentrated Products	55
References	55
5. Milk Powder: General Production	57
5.1 Principles of Producing Milk Powder	57
5.2 Production of Milk Powder	63
5.3 Quality and Process Control	85
5.4 Commercial Applications	93
References	93

6. Milk Powder: Production of Specific Products	97
6.1 Skim Milk Powder	97
6.2 Instant Milk Powder	104
6.3 Reconstituted Milk Powder	115
6.4 Modified Milk Powder	120
6.5 Imitation Milk Powder	122
References	124
7. Infant Formulas	127
7.1 Principles	127
7.2 Processing	128
7.3 Composition	131
7.4 Nutrition and Health	136
7.5 Quality and Process Control	139
References	139
8. Miscellaneous Dry Products	141
8.1 Anhydrous Milkfat	141
8.2 Dry Dairy Beverages	143
8.3 Dietetic Dry Products	144
8.4 Coffee Whiteners	145
8.5 Dry Cultured Milk Products	146
8.6 Dry Cream	146
8.7 Dry Cheese Products	147
8.8 Dry Ice Cream Mix	148
8.9 Dry Buttermilk	149
8.10 Single-Cell Protein	150
8.11 Other Dry Products	150
References	152
9. Whey	153
9.1 Whey Powder	153
9.2 Whey Powder Concentrates	162
References	196
10. Casein	199
10.1 Casein	199
10.2 Sodium Caseinate	213
10.3 Coprecipitates	219
References	223

11. Lactose	227
11.1 Principles	227
11.2 Processing	228
11.3 Quality and Process Control	236
11.4 Commercial Applications	236
References	237
 Index	 239