

	INTRODUCTION	7
1.	PHYSICAL AND MECHANICAL CHARACTERISTICS OF SUGAR BEET	9
2.	MODERN TECHNIQUES AND TECHNOLOGIES FOR HARVESTING OF THE SUGAR BEET	17
3.	THEORY AND CALCULATION OF THE TOP CUTTING APPARATUS	21
3.1.	Modern mechanisms for cutting out the tops	21
3.2.	Theory of disk cutting device	24
3.3.	Theory of the passive copier	30
3.4.	Theory of the active copier	61
3.5.	Theory of the rotary cutter apparatus	74
4.	THEORY AND CALCULATION OF THE CROWN HEAD CLEANERS ON THE ROOT	95
4.1.	Theory of a blade cleaner with a horizontal drive shaft	95
4.1.1.	Interaction of the cleaning blade with the head of the root crop, when the plane of rotation of the pest is perpendicular to the axis of the shaft	95
4.1.2.	Interaction of the cleaning blade with the root of the root crop, when the plane of rotation of the pest is at an angle to the axis of the shaft	103
4.1.3.	Movement of the cleaning blade along the head of the root crop in the case when the plane of rotation is located along the row of root crops	107
4.1.4.	Movement of the cleaning blade along the head of the root crop in the case when the inversion plane is at an angle to the row of root crops	119
4.1.5.	Solution of systems of differential equations obtained in a locked form	126
4.2.	Theory of a blade cleaner with a vertical drive shaft	133
4.3.	Clarified theory of interaction of flexible cleaning blade with the root of root crop. Calculation example.	151

5.	THEORY AND CALCULATION OF EXCAVATING WORKING BODIES	169
5.1.	General conditions for excavating root crops from the soil	169
5.2.	Theory of plow (lemming) working body	172
5.3.	Theory of disk excavating working body	198
5.4.	Theory of the rotary excavating tool	207
6.	THEORY AND CALCULATION OF VIBRATION EXTRACTION OF ROOT CROPS	211
6.1	Theory of longitudinal oscillations of root crops. Basic methodological provisions	211
6.2.	Differential equations of longitudinal oscillations of root crops	214
6.3.	Significance of own forms and own frequencies of longitudinal root crop vibrations	222
6.4.	Forced longitudinal root crop oscillations	237
6.5.	Theory of beet root extraction from soil with a vibration exhaust working body	255
7.	THEORY AND CALCULATION OF PURIFICATION OF CROWN FANS	267
7.1.	Screw-roll cleaner	268
7.2.	Biter cleaner	273
7.3.	Cam cleaner	275
7.4.	Finger cleaning slide	277
7.5.	Centrifugal cleaners	278
7.6.	Other types of cleaners	280
	REFERENCES	283