

CONTENT

CONTENT	3
LIST OF TABLES	6
LIST OF FIGURES	9
LIST OF CHARTS	10
ABSTRACT	13
PREFACE	15
1 OVERVIEW OF THE CURRENT STATE OF ISSUE	16
1.1 SOIL	16
1.1.1 Soil structure	19
1.2 TILLAGE TECHNOLOGIES	28
1.2.1 Conventional technology	28
1.2.2 Soil protection technologies	30
1.2.3 Direct sowing	31
1.3 CHARACTERISTICS AND DIVISION OF TILLAGE MACHINES AND SYSTEMS	31
1.4 TECHNOLOGY AND THE SOIL ENVIRONMENT	32
1.5 SOWING AND ITS REQUIREMENTS	35
1.5.1 The Division of seed drills	37
1.5.2 Working parts of the seed drill	37
1.5.3 Seed coulters	38
1.6 CONCLUSION OF THE LITERATURE REVIEW	40
2 THE AIM OF THE MONOGRAPH	41
3 WORK METHODOLOGY	42
3.1 OBJECT OF THE RESEARCH	42
3.2 METHODOLOGY FOR MONITORING SOIL PROPERTIES	46
3.3 METHODOLOGY FOR MONITORING SEED PROPERTIES	47
3.4 METHODOLOGY FOR EVALUATION OF THE SOWING QUALITY	48
3.4.1 Methodology for the determination of the vertical placement of seeds ...	48
3.4.2 Methodology for the determination of the horizontal (area) placement of seeds	49
3.5 METHODOLOGY FOR THE DETERMINATION OF REVENUE PARAMETERS	55
3.6 DESCRIPTION OF THE USED INSTRUMENTS AND MEASURING EQUIPMENT	56
3.6.1 Apparatus for the determination and evaluation of the penetrometric resistance	56
3.6.2 Apparatus for soil sampling and analysis	56

4	RESULTS	59
4.1	CHARACTERISTICS OF AGRICULTURAL HOLDINGS.....	59
4.1.1	<i>Agricultural trade association Abrahám.....</i>	59
4.1.2	<i>Agricultural cooperative based in Žemberovce.....</i>	59
4.1.3	<i>Agro Division Ltd Selice.....</i>	60
4.1.4	<i>Agro cooperative Rišňovce.....</i>	60
4.2	RESULTS OF SOIL CONDITION ASSESSMENT.....	61
4.3	CHARACTERISTICS OF THE USED WINTER RAPE SEED	64
4.4	RESULTS OF THE EVALUATION OF THE QUALITY OF WINTER RAPE SOWING (IN TERMS OF DISTRIBUTION OF SEEDS)	68
4.4.1	<i>Agricultural trade association Abrahám.....</i>	68
4.4.2	<i>Agro cooperative Rišňovce.....</i>	72
4.4.3	<i>Agricultural cooperative Žemberovce.....</i>	76
4.5	RESULTS OF THE EVALUATION OF THE QUALITY OF WINTER RAPE SOWING (THE POLYGONAL EVALUATION METHOD)	78
4.5.1	<i>Agricultural trade association Abrahám.....</i>	78
4.5.2	<i>Agro cooperative Rišňovce.....</i>	79
4.5.3	<i>Agricultural cooperative Žemberovce.....</i>	80
4.6	EVALUATION OF CHOSEN FERTILE ELEMENTS OF THE CULTIVATED WINTER RAPE CROP.....	81
4.6.1	<i>Agricultural trade association Abrahám.....</i>	81
4.6.2	<i>Agro cooperative Rišňovce.....</i>	89
4.6.3	<i>Agricultural cooperative Žemberovce.....</i>	97
4.7	EVALUATION OF AVERAGE RESULTS BETWEEN EACH ALTERNATIVES AND HABITATS.....	103
4.8	COMPARISON OF CHOSEN ALTERNATIVES AND DERIVATION OF CONCRETE CONCLUSIONS.....	105
4.9	POST CHARACTERISTICS.....	107
4.9.1	<i>Dimensional and shape properties of the used maize seeds.....</i>	107
4.9.2	<i>Evaluation of the sowing quality of chosen seeders, from the horizontal seed distribution point of view.....</i>	108
4.9.3	<i>Evaluation of the sowing quality of chosen seeders, from the vertical seed distribution point of view.....</i>	110
4.9.4	<i>Results of the evaluation of the quality of sowing in terms of the area distribution of seeds (sowing systems with continuous sowing in the meaning of ISO 7256/2 standard).....</i>	113

4.9.5 Results of the evaluation of the quality of sowing in terms of the area distribution of seeds (the case of sowing devices with continuous sowing according to the shape factor)..... 119

5 DISCUSSION.....123

6 SUGGESTIONS FOR THE USE OF FINDINGS FOR DEVELOPING SCIENTIFIC KNOWLEDGE AND PRACTICE.....127

6.1 PROPOSAL FOR THE USE OF RESULTS IN THE SOCIAL PRACTICE 127

6.2 PROPOSAL FOR THE USE OF RESULTS IN THE FURTHER DEVELOPMENT OF SCIENCE..... 128

7 CONCLUSION129

8 REFERENCES.....131

9 ANNEXES138