SUMMARY

The water erosion is considered as the most important factor having impact on the agricultural land degradation. In the past, many methodes of soil erosion processes by using mathematical models has been developped. The mostly applicated is the universal soil loss equation USLE. The USLE equation has been used as the basis for new erosion models WaTEM/ SEDEM (Van Rompaey a kol. 2001, Van Oost a kol. 2000, Verstraeten a kol. 2002) and USPED (Mitášová a kol., 1996). The two of them are applicated in the experimental catchement of Černičí. The WaTEM/ SEDEM model is able to count the river sediment export as well. The intensity of erosion processes is increasing during extraordinary rainfall – rainoff events. This diploma thesis is evaluating their causes, frequency and course from two points of view: the course of runoff and the sediment transport. The water quality is also evaluated.

KEY WORDS: erosion, extraordinary rainfall – runoff event, USPED, WaTEM/ SEDEM