## List of Tables

2.1 Soil properties .......................... 11
2.2 Estimated parameters for the 2SIS model  . 24

3.1 Soil properties .......................... 37
3.2 Parameter estimates for the compartment model  . 48
3.3 Test schedule of the batch experiments  ......... 52
3.4 Schedule of the simulations ................... 54
3.5 Percental compositions of the liquid phases and solid-phase extracts ..................... 55
3.6 Linear correlations between estimated values for the model parameters and soil properties  . 56
3.7 Modeling endpoints ........................ 59

4.1 Input parameter ranges and control variables for the manure experiment  ............... 71
4.2 Hydrophysical parameters gained with the breakthroughs of the specific electrical conductivities .. 74
4.3 Experimental mass recoveries .................. 74
4.4 Results of the simulations with the DREAM algorithm in combination with the HYDRUS 1-D model 77
4.5 Results of the simulations of the real world scenario 80

5.1 Dispersivitities for all six column experiments .... 88
5.2 Percental experimental mass recoveries ........... 92
5.3 Results of the simulations for all three BTC simultaneously as well as on the basis of the first BTC only