

CHAPTER 15

SWAT INPUT DATA: TILL.DAT

SWAT uses five databases to store information related to plant growth, urban land characteristics, tillage implements, fertilizer components and pesticide properties. The tillage database distributed with SWAT contains mixing depth and mixing efficiency data for the most common tillage implements.

Tillage operations redistribute nutrients, pesticide and residue in the soil profile. Appendix A documents the source of parameter values in the database file provided with the model.

Following is a brief description of the variables in the tillage database file. They are listed in the order they appear within the file.

Variable name	Definition
ITNUM	Tillage number. ITNUM is the numeric code used in the management file to identify the tillage practice to be modeled. The different tillage operations in the tillage database must have unique values for ITNUM. Required.
TILLNM	An eight-character code representing the tillage operation name. Optional.
EFFMIX	Mixing efficiency of tillage operation. The mixing efficiency specifies the fraction of materials (residue, nutrients and pesticides) on the soil surface which are mixed uniformly throughout the soil depth specified by DEPTIL. The remaining fraction of residue and nutrients is left in the original location (soil surface or layer). Required.
DEPTIL	Depth of mixing caused by the tillage operation (mm). Required.

The format of the tillage database file is:

Variable name	Line #	Position	Format	F90 Format
ITNUM	ALL	space 1-4	4-digit integer	i4
TILLNM	ALL	space 9-16	character	a8
EFFMIX	ALL	space 25-32	decimal(xxxx.xxx)	f8.3
DEPTIL	ALL	space 41-48	decimal(xxxx.xxx)	f8.3