

apsimr: Edit, run and evaluate APSIM simulations from R easily

by Bryan Stanfill

Introduction

Run

To run an APSIM simulation the only required argument is the path to the APSIM executable with `exe`. Two additional arguments are optional. `wd` specifies the working directory to which the results `.out` file will be written to which is set to the current working directory by default. `files` is the list of `.apsim` simulation files to be run which is set to all files in the specified working directory by default.

```
exe <- "C:/Program Files (x86)/Apsim76-r3376/Model/Apsim.exe"
wd <- "~/APSIM"
to_run <- c("Centro.apsim", "Continuous Wheat.apsim")
results <- apsim(exe = exe, wd = wd, files = to_run)
```

Edit

The file I want to edit is called "Canopy.apsim" which is in the directory "~/APSIM"

```
file <- "Canopy.apsim"
wd <- "~/APSIM"
```

I want to change the Thickness of the Soilwater, the SoilCN of the SoilOrganicMatter and the state at which the simulation is being run. Change SoilWater-Thickness to 200,200,300x9 Change SoilCN to 10 Change "State" to "NSW"

```
var <- c("SoilWater/Thickness", "SoilOrganicMatter/SoilCN", "State")
value <- list(c(rep(200, 2), rep(300, 9)), 10, "NSW")
```

Edit the apsim file without overwriting it

```
edit_apsim(file, wd, var, value, overwrite = FALSE)
```

Visualize

Visualize all of the results as a function of time in separate plots

```
plot(results[[2]])
```

Put all variables on one faceted plot. See Figure 1.

```
plot(results[[2]], one_plot = TRUE, geom = 'line') + theme_bw()
```

Plot just yield as a function of time. See Figure 2.

```
plot(results[[2]], y = 'yield') + geom_line(colour = 'red') + theme_bw()
```

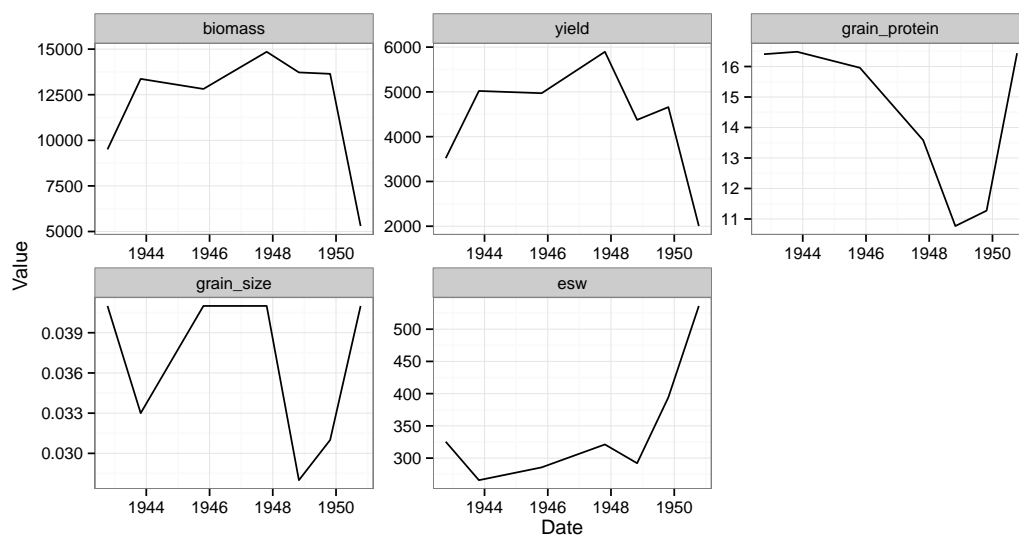


Figure 1: Figures produced by `plot.apsim` with argument `one_plot = TRUE`.

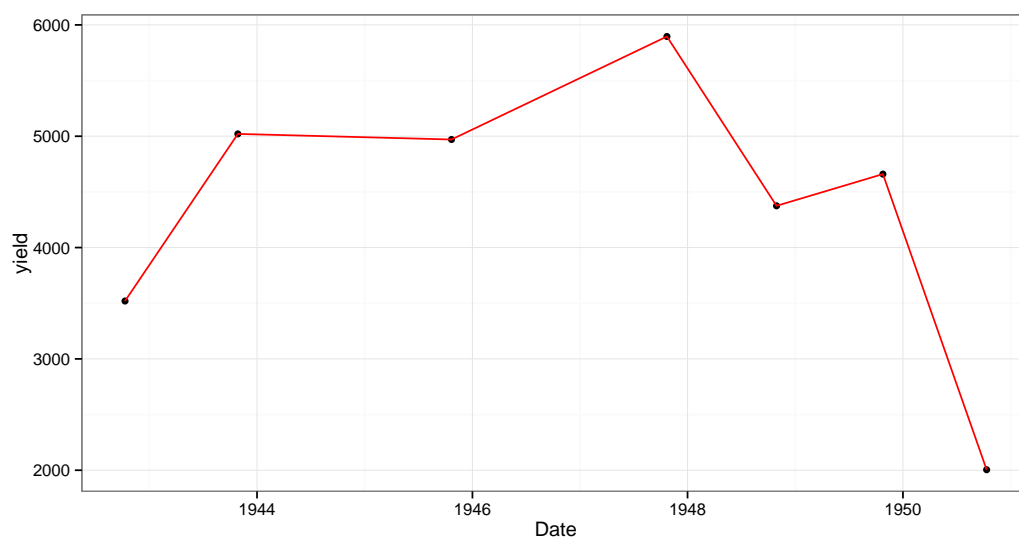


Figure 2: Plot produced by `plot.apsim` with argument `y = 'yield'`.