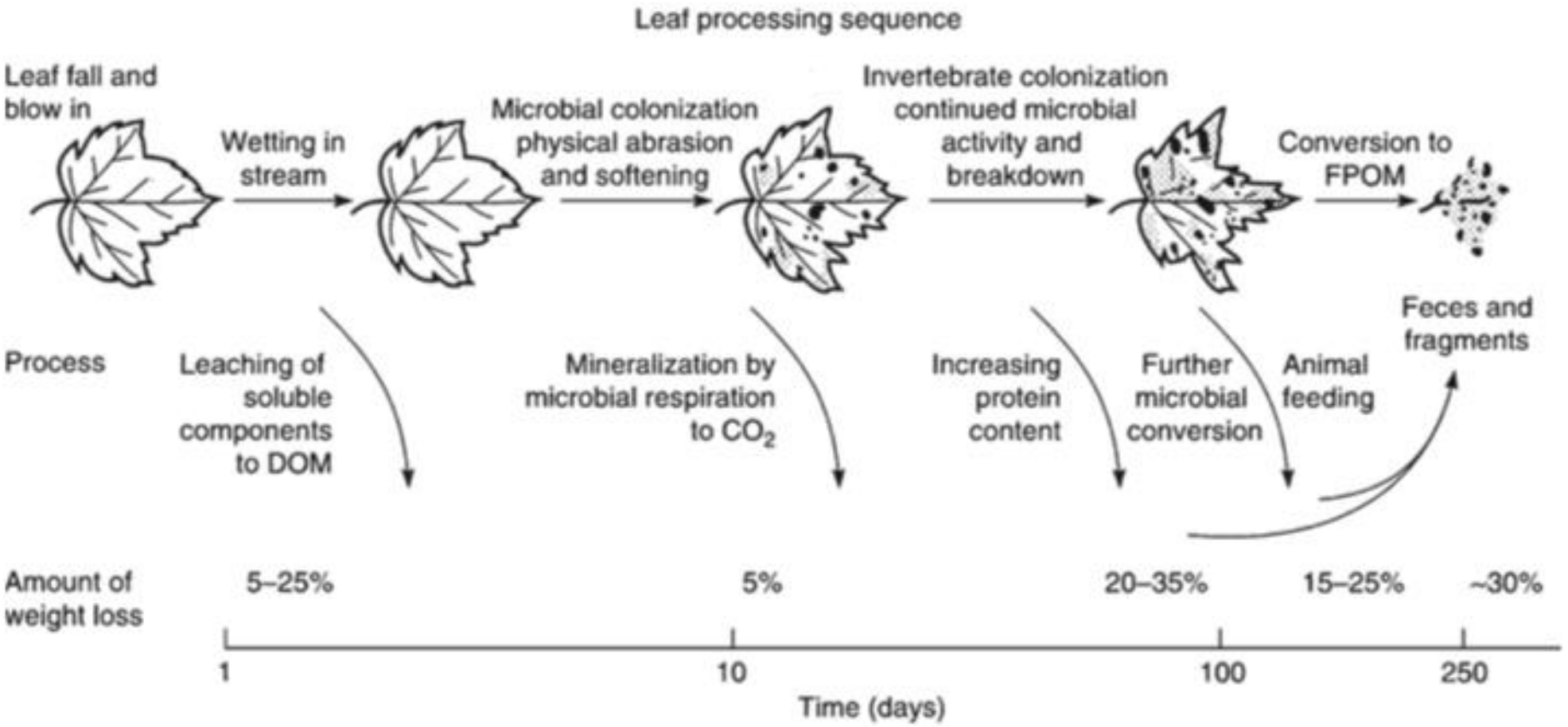
Leaf-litter decomposition

Report

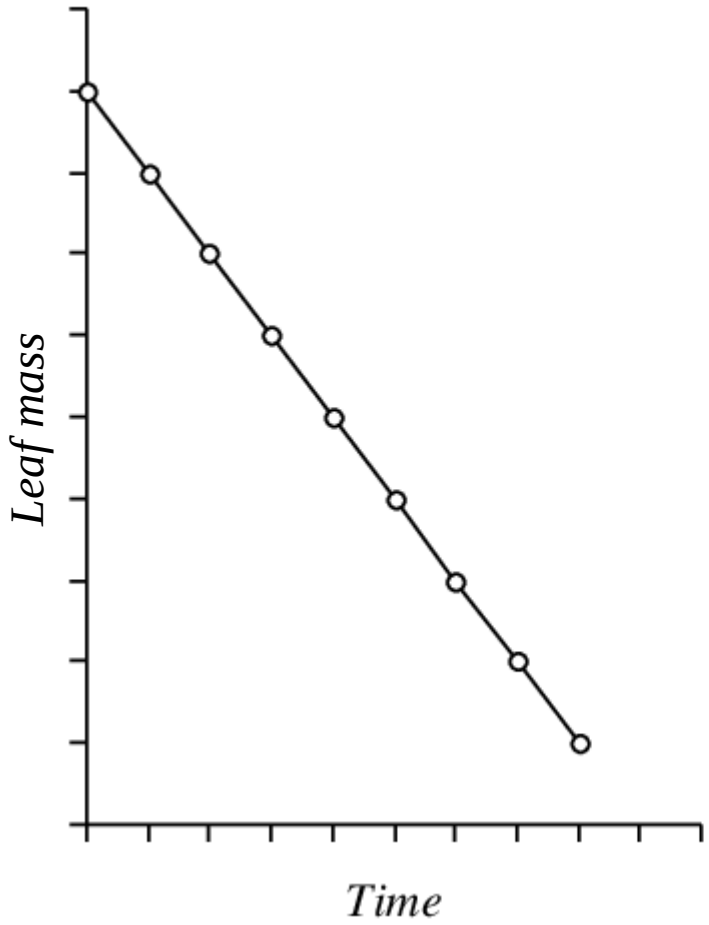
- Choose a single treatment comparison. For example: light vs dark!
- The title is important! Make it meaningful and precise.
- In the Introduction focus on the science behind the experiment, no need to explain that this is part of the class. Provide background, cite important literature, but don’t be too general (Ecology etc). Provide hypothesis. Be very specific about them: We hypothesize that…
- The Introduction and Methods can be single sections – no subsections.
- Methods provide key information, be precise, include statistics
- Citations – appropriate choice, consistent in text formatting, include reference section at the end. Look at publications for referencing style.

Leaf-litter degradation

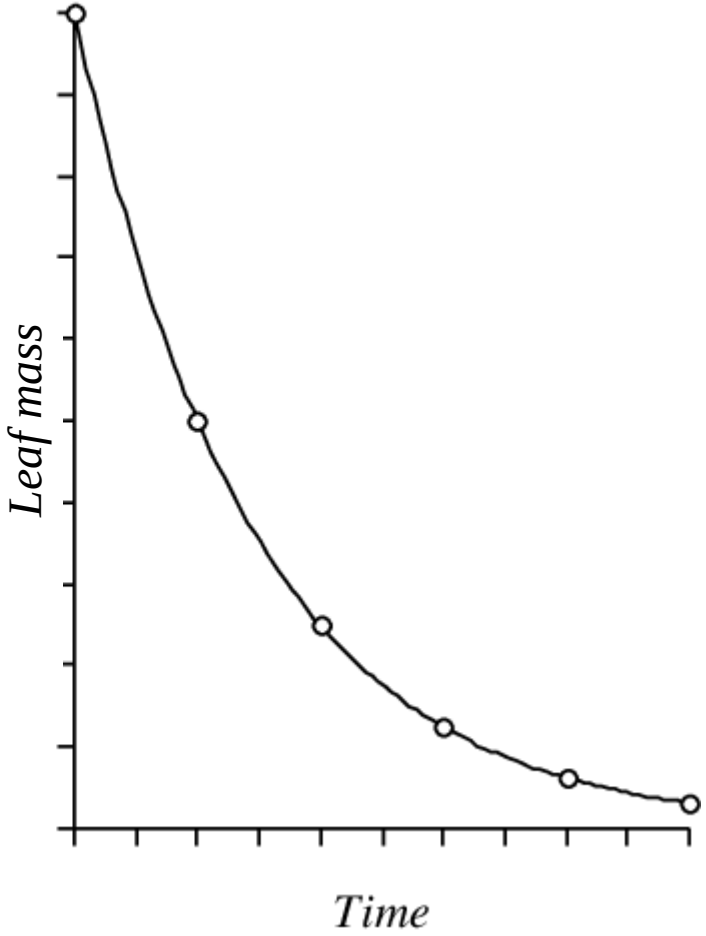


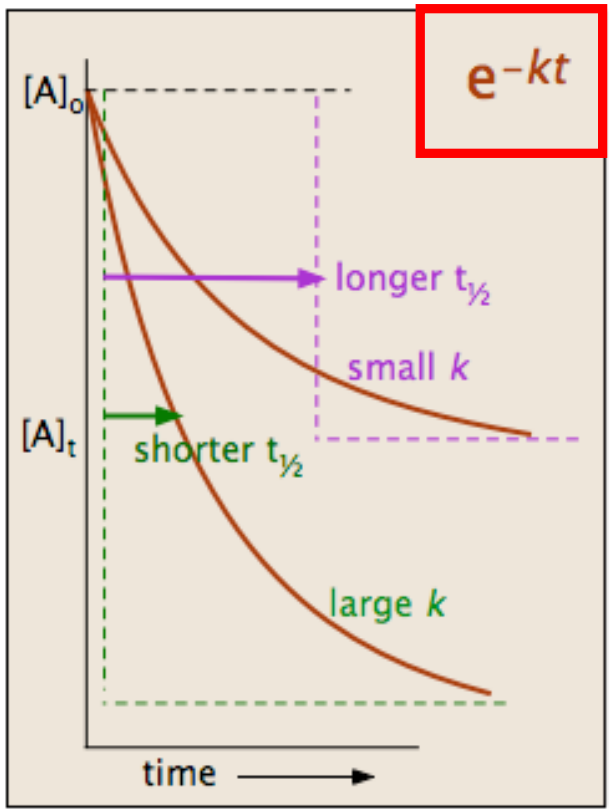
kinetics

Zero-order kinetics
A constant amount of mass is removed per unit time



First-order kinetics
A constant proportion of mass is removed per unit time





Half-life time $t_{1/2}$
(time it takes to reach 50% of initial DM)

How to estimate decomposition rate (k)

1) Zero-order kinetics: regress DM against days of exposure
   The slope of the linear regression line (negative) equals the decomposition rate constant k

2) First-order kinetics: Regress DM (y-axis) against natural log of days of exposure (x-axis)
   The slope of the regression line (negative) equals the decomposition rate constant k

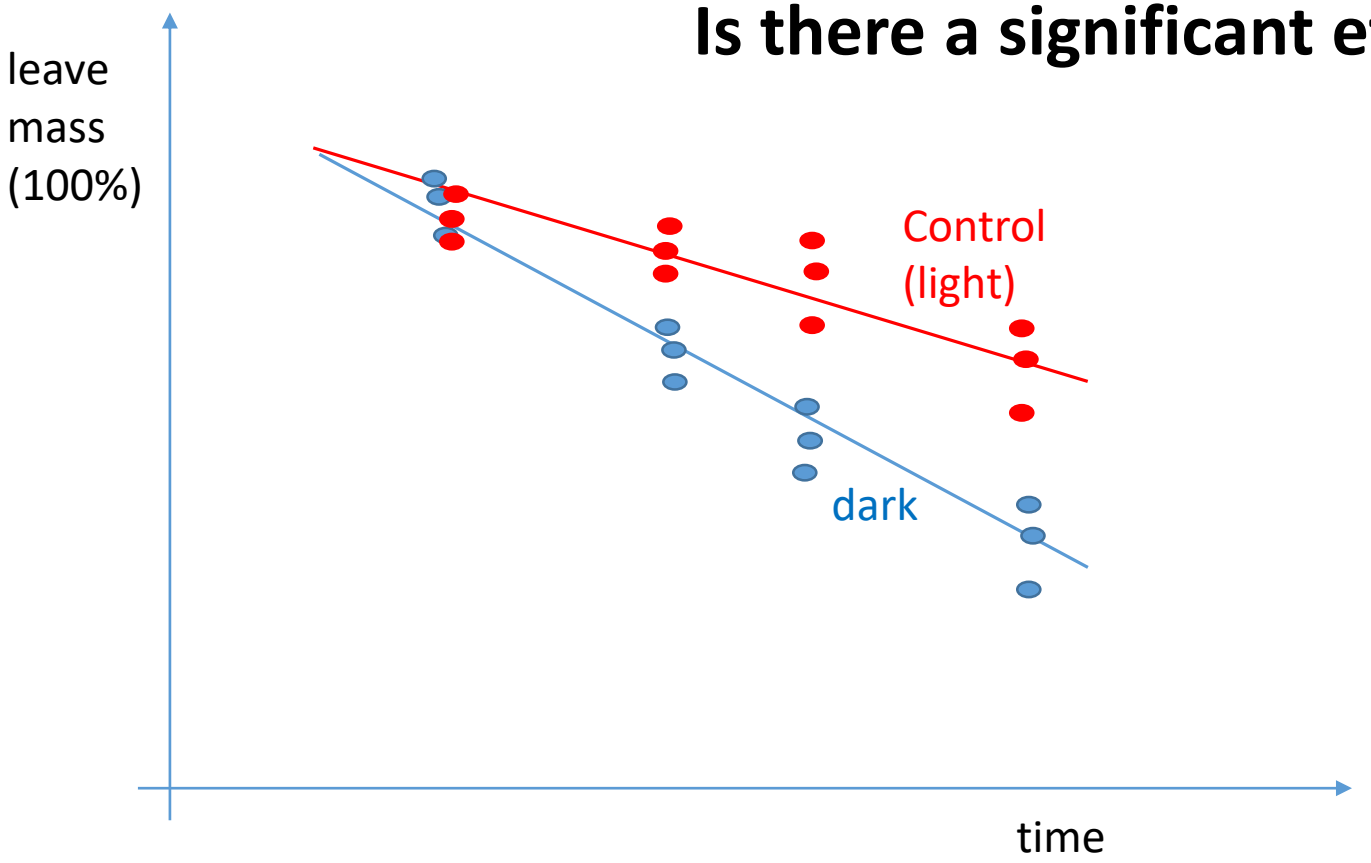
=> Compare fits of zero- and first-order kinetics: R^2

R: *mod1<-lm(weigth~time)*
summary(mod1) -> R^2

mod2<-lm(weigth~log(time))
summary(mod2) –>R^2

3) Is there a significant effect of treatment?

Is there a significant effect of treatment?



R:

lm(weight~time*treatment)

library(rstatix)

anova_table(weight~time*treatment)