**NEW QUESTIONS**

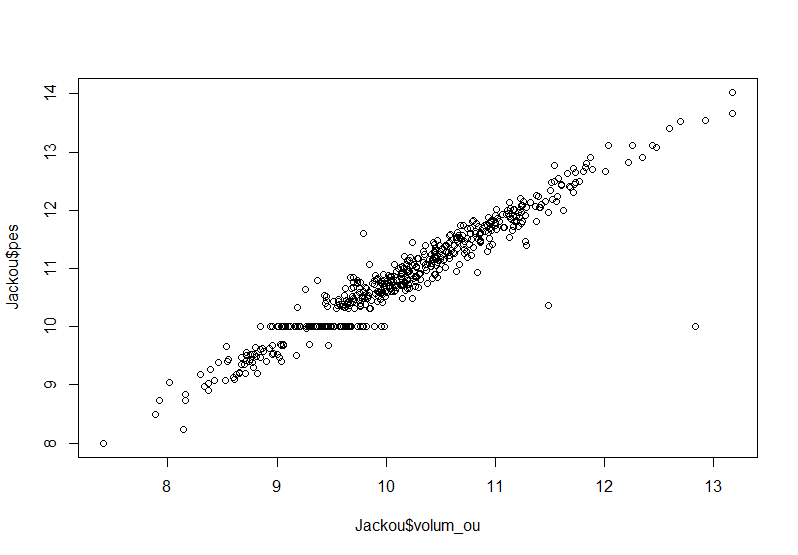
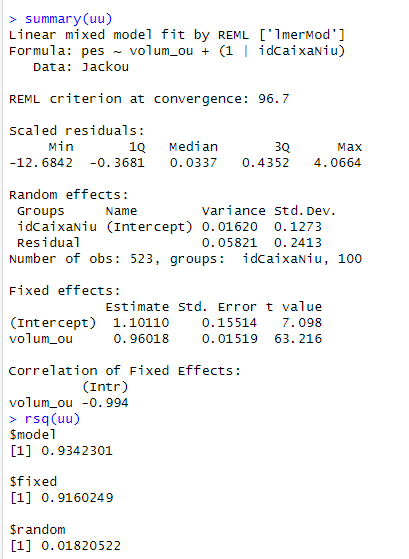
* Is time important in egg weight trends? Important to know whether we should randomize or change from time to time the hour of day we measure eggs at each tower. 🡪 no apparent effect for all eggs or just looking at the first egg
* Certainty of order. We have measured some eggs with certainty of their order/place in the clutch, there are eggs that we don’t know whether they were second, third, etc. Use eggs that we are certain of to do analysis. 🡪 done, same results
* Compare difference between 1st and last egg (use 5th as a norm). Is there difference in weight, volume, density?
* Synchrony may affect density, but we see there is no effect on the weight and volume.
* Does the number of nests within each tower affect weight, volume and density of eggs?
* Model with varying slopes 🡪 compare with and without interaction (with tower) 🡪 AIC

**Orthopter abundance**

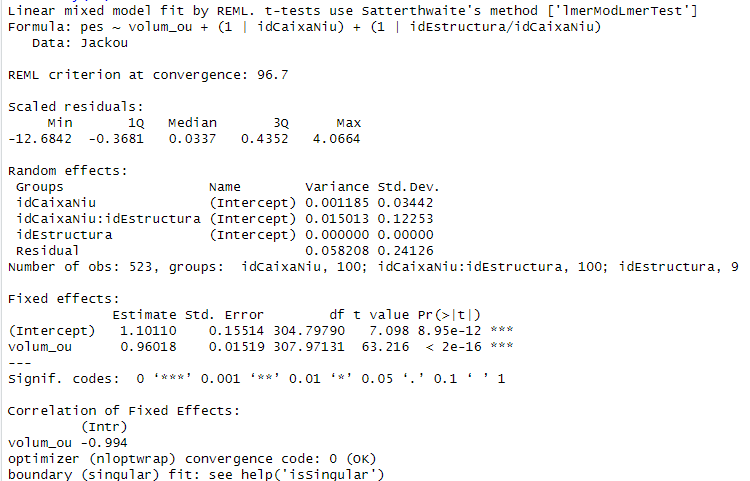
* Orth ~ Phen + (1|Tower) : More orth when phonologic stage includes flowers and seeds.
* Orth ~ period + (1|Tower): more orth during periods c and d
* Orth ~ Phen + period + (1|Tower) : probable correlation between time of the year and phenological stage of plants.

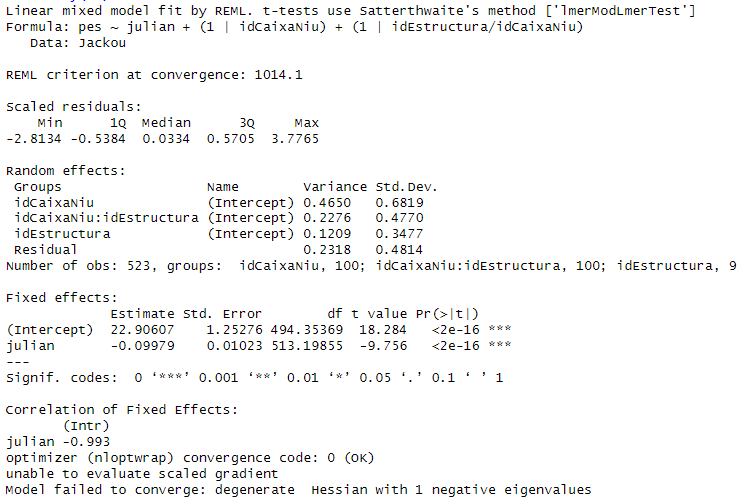
Wild yields more tax groups: Ant, Dip and Orth. No harvest is important to presence of Ants.

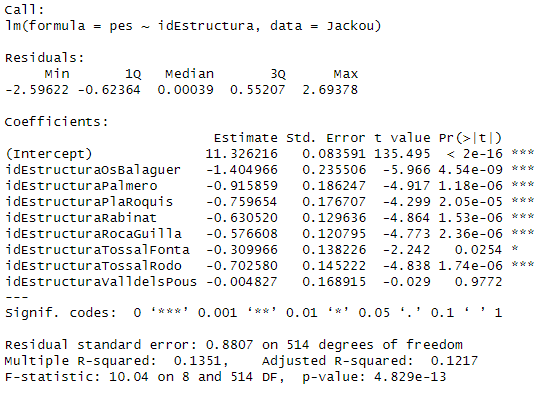
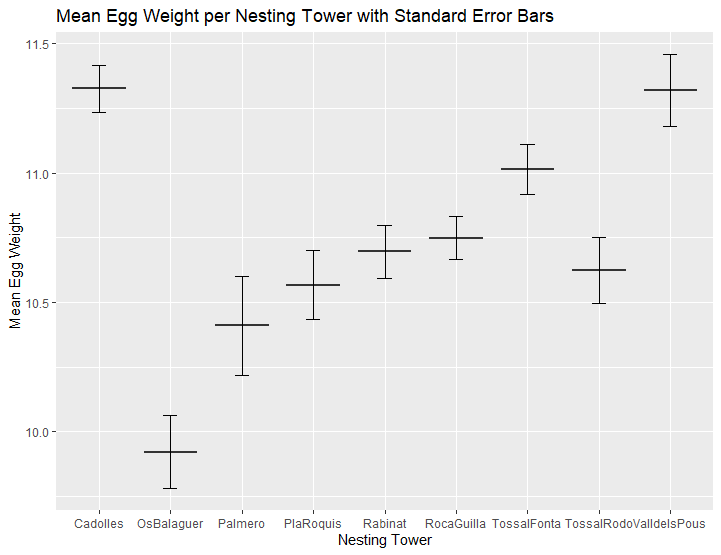
**Egg weight relation to volume**

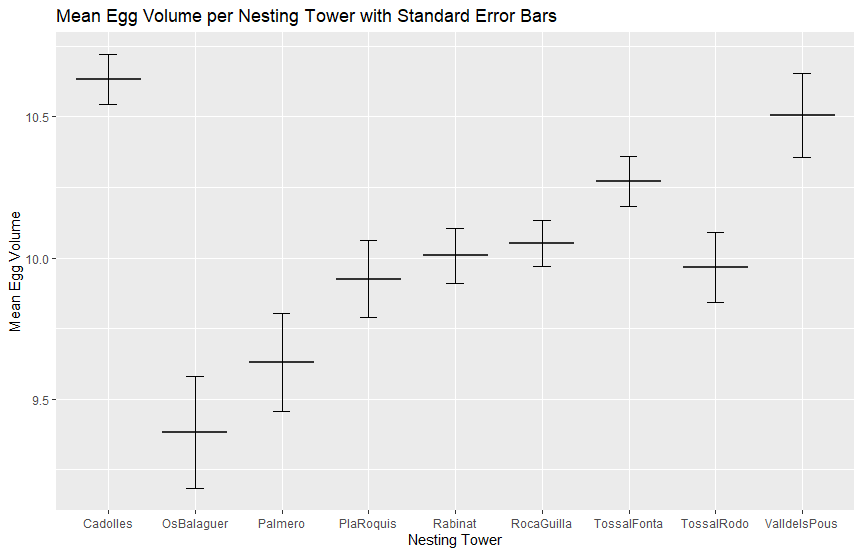


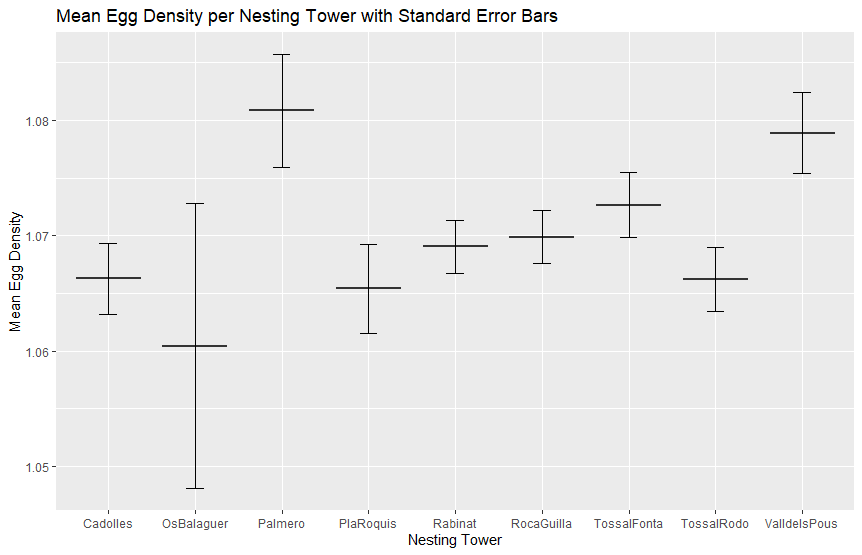
Hi ha variació entre postes?

* Pes ou com a resposta – mida com a predictor. Random niu-torre + id estructura.
  + Only randomizing nest 🡪 21% variació a nivel de Caixa niu
  + Only randomizing tower 🡪 3.8% variació a nivel de estructura
  + Randomizing both 🡪 tower id has 0.0% variation.
  + Randomizing both with old nest id and nested nest id within tower id 🡪 variation only explained in nested vector
  + Randomizing both with nest id and nested nest id within tower id 🡪 tower still 0, but there is some variance not related to nested vector… but, still this may not be correct bc the variable idCaixaNiu is already determined by tower and number of nest within the tower.
* Data de posta (fixed) – does condition depend on date?
  + Slightly, but the nest id explains much more.
  + Doubts about whether to nest idCaixaNiu within tower, when idCaixaNiu already comes defined by the tower it is found in.



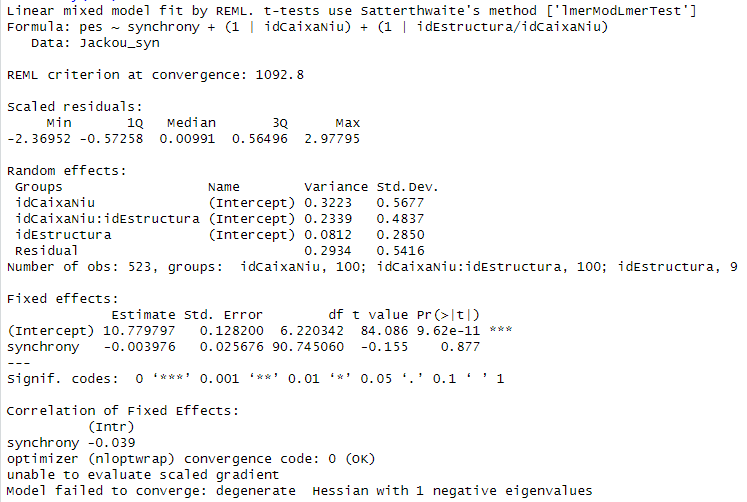
Cadolles has heavier eggs than the rest of towers, but ValldelsPous

Egg volume decreases with laying order in the majority of nests; however, it is just a trend of -0.11. This is probably due to some nests having opposite trends.

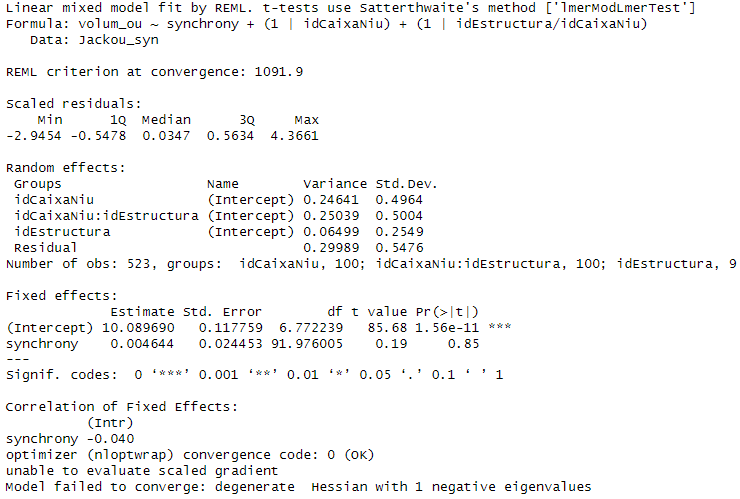


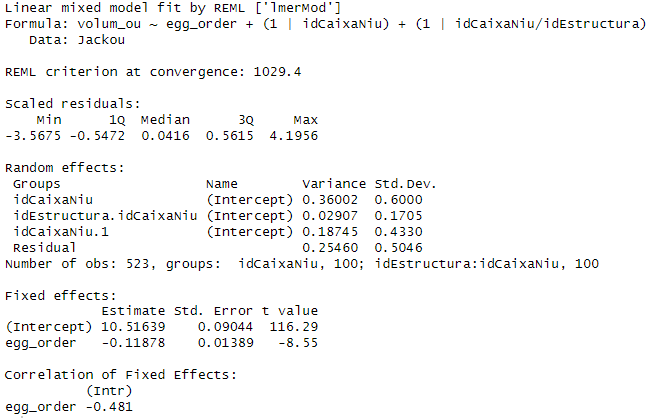
* Does volume also vary between towers? And density?
  + It seems that although volume of eggs is similarly different between towers compared to the weight, egg density is highest in palmero and valldelspous, suggesting that cadolles although big and heavy it keeps a relationship, while palmero has heavier eggs for the volume that is measured.
* Does weight/volume vary depending on synchrony? Of the tower members?
  + To do this we should use laying date and distance from mean laying date per tower?

WEIGHT ~ SYNCHRONY

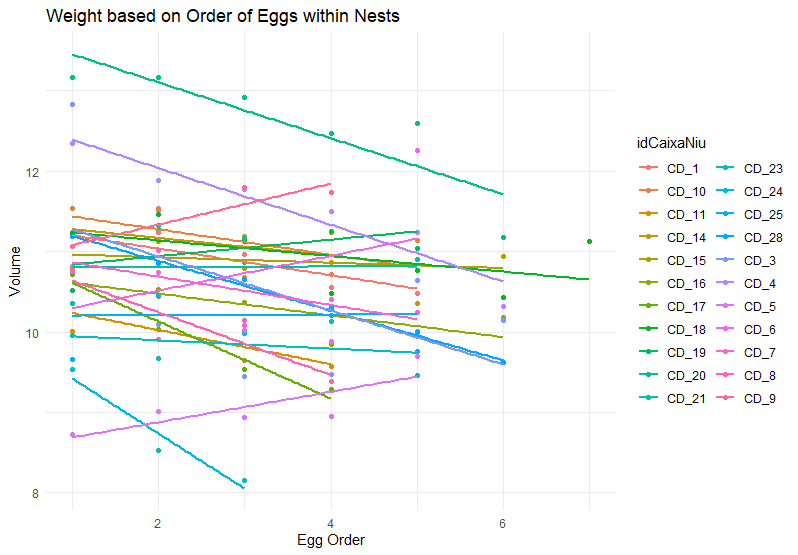


VOLUME ~ SYNCHRONY

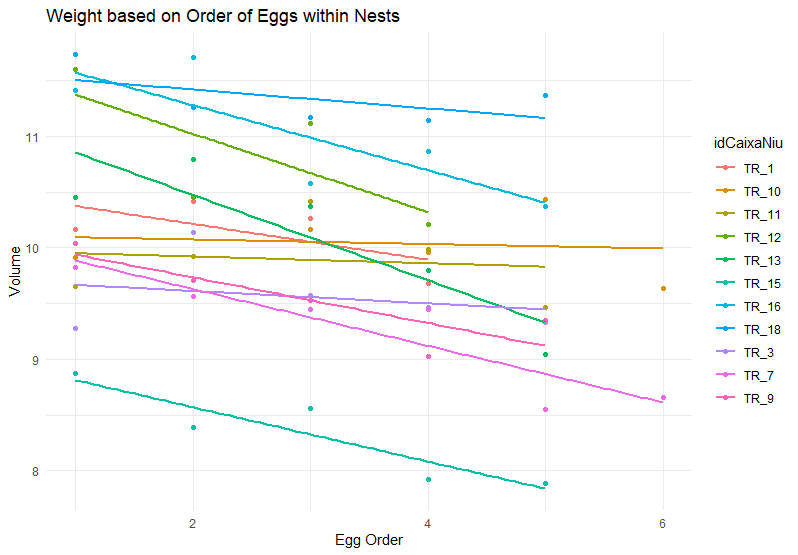




* how to codify nested random effects correctly?
* <https://www.muscardinus.be/statistics/nested.html>
* Validar si data de posta afecta. Quality of parents, laying date, distribution of nutrients/proteins/water per egg (depending on order)



Clutch size has no effect on egg weight



Chicks’ growth appears to increase most between 7 and 14 days, being the first hatchling the heaviest throughout its growth.

