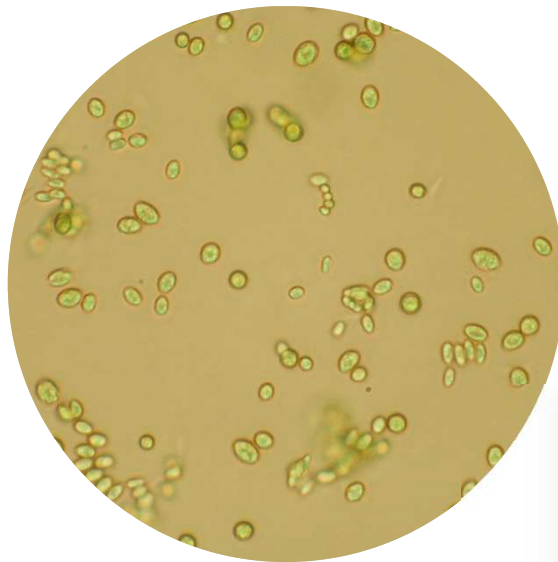
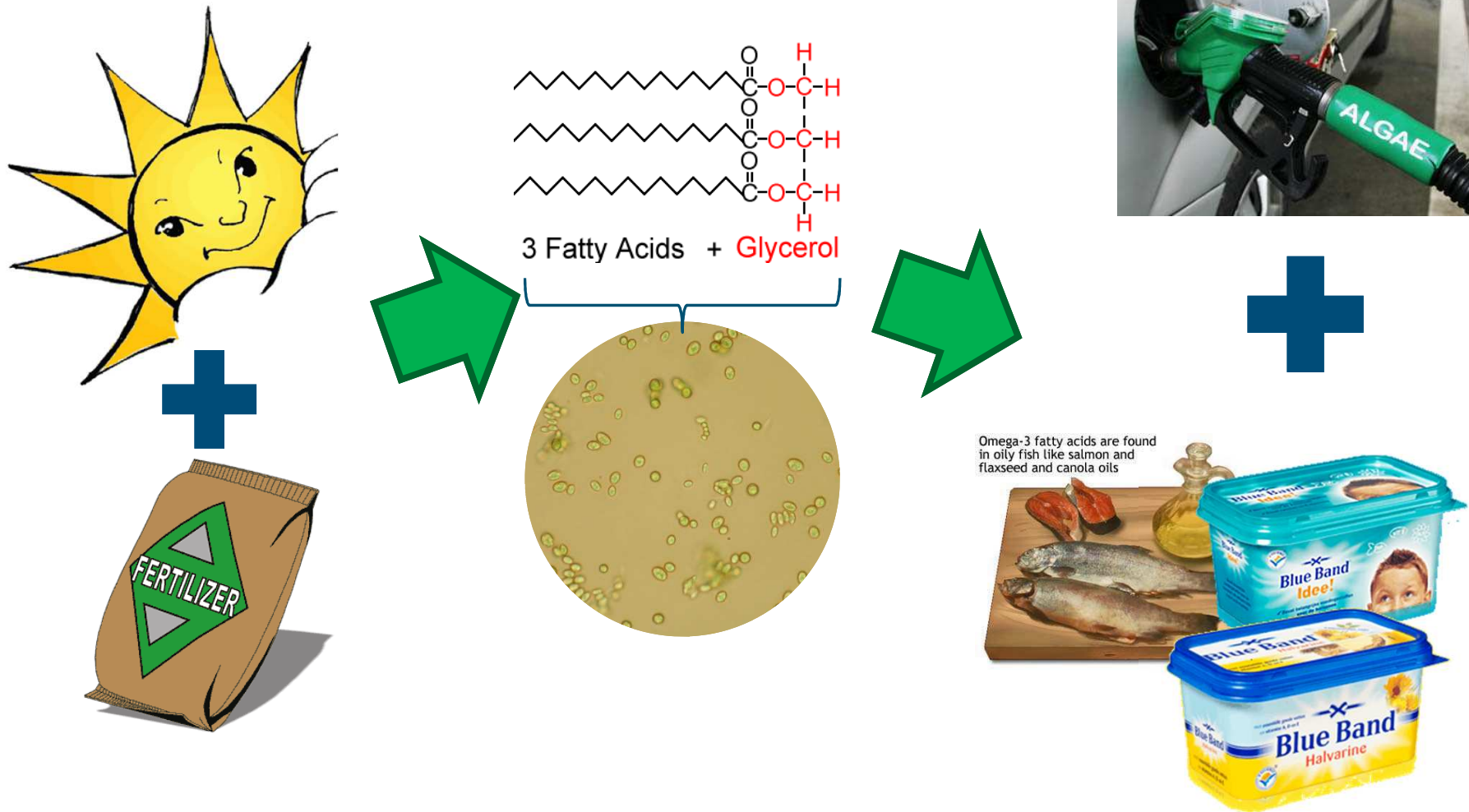


Triacylglycerol (TAG) accumulation in microalgae

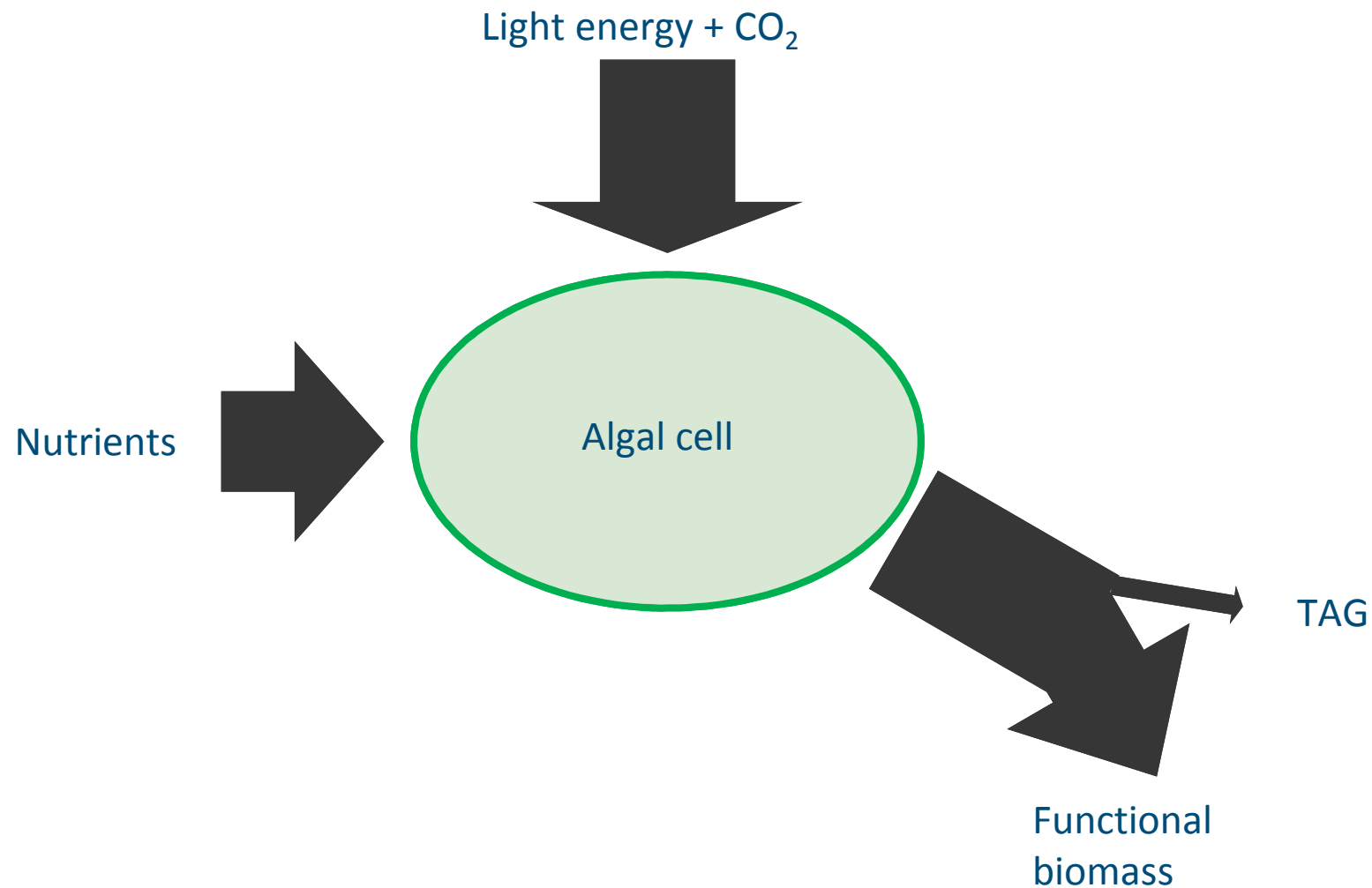
Guido Breuer, Packo Lamers, Dirk Martens,
René Draaisma, René Wijffels



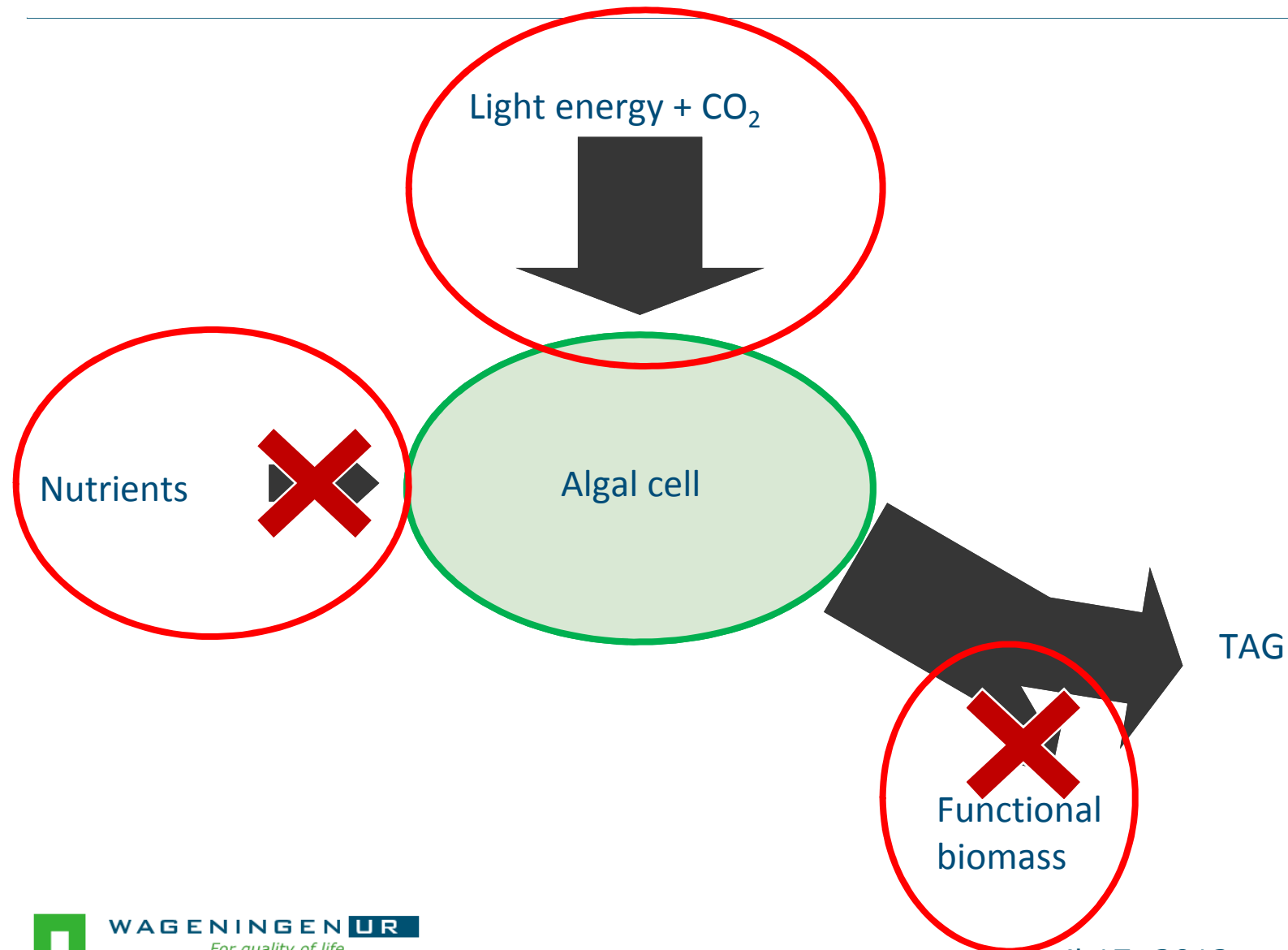
TAG production by microalgae



TAG accumulation: production strategy

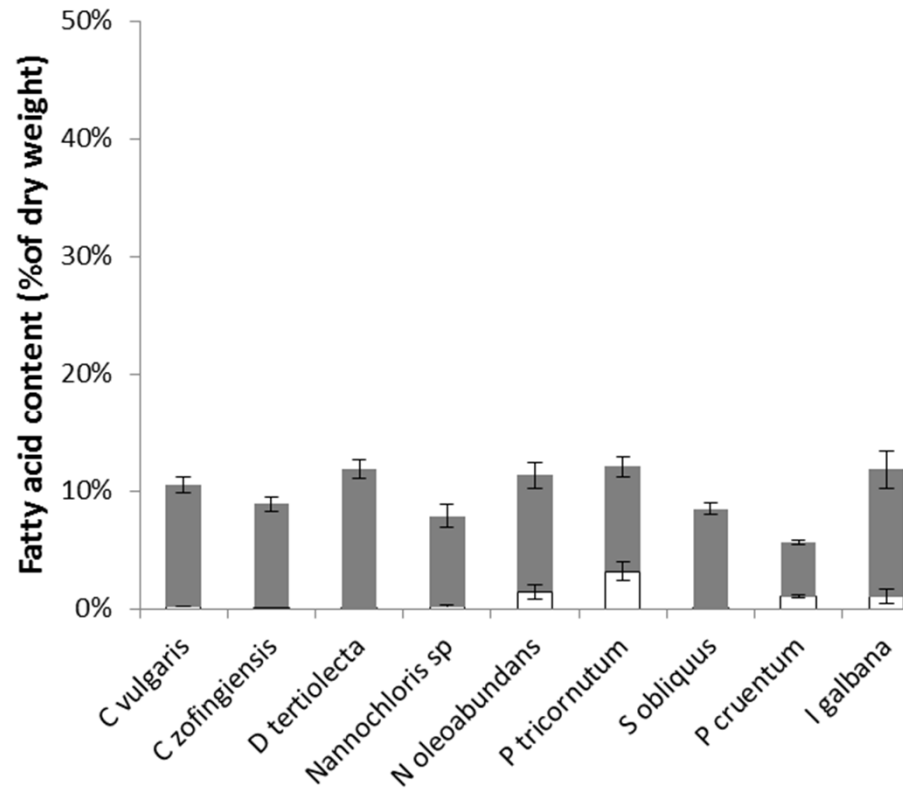


TAG accumulation: production strategy

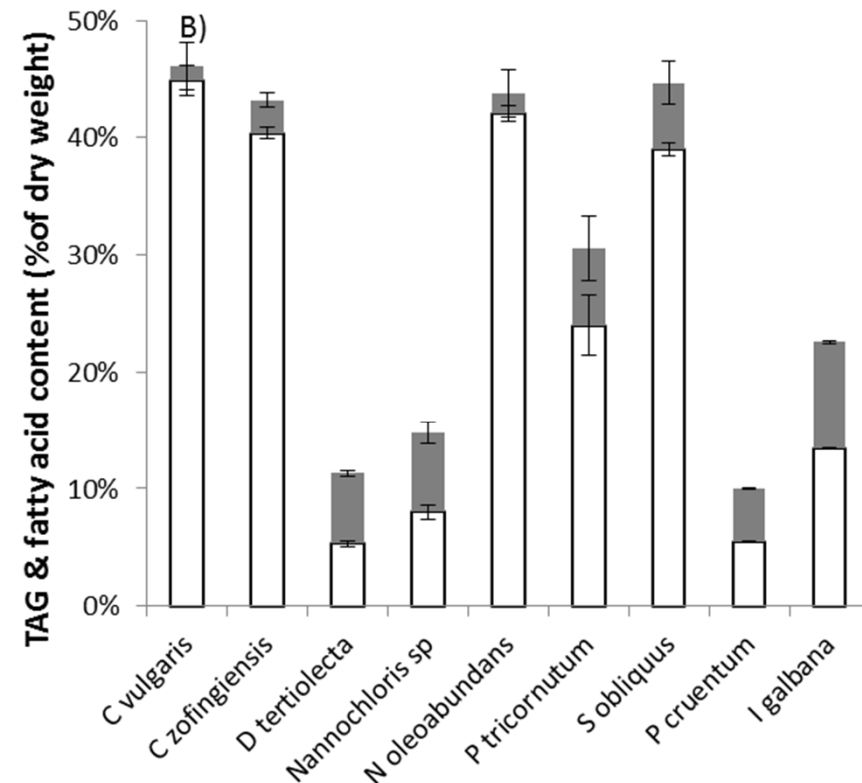


TAG accumulation

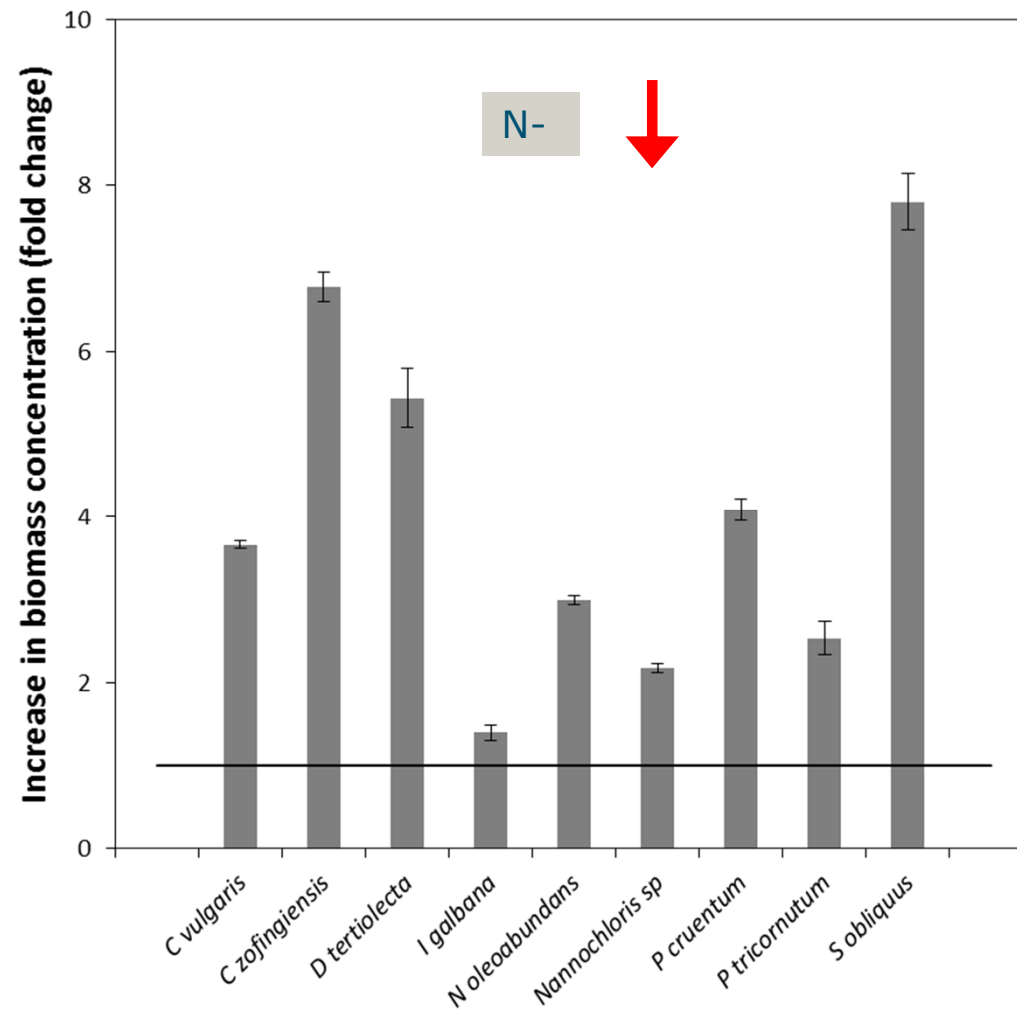
N+ ↑



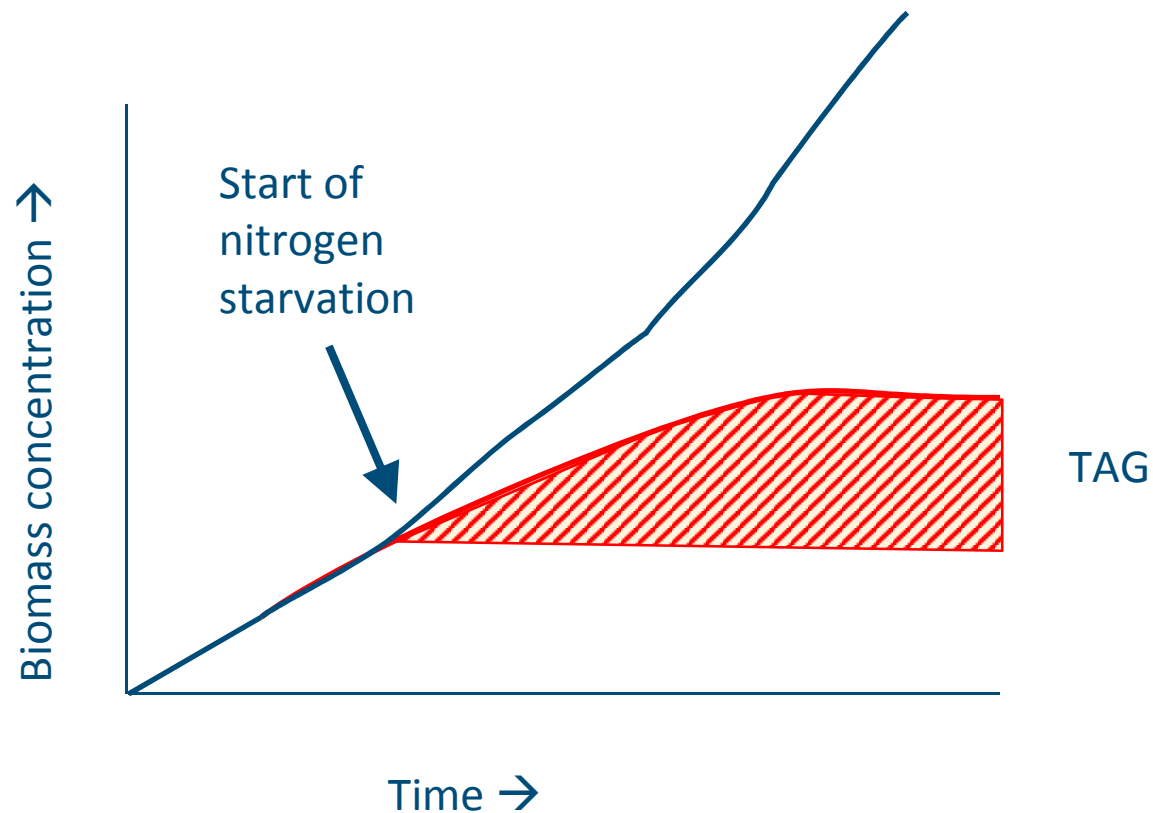
N- ↓



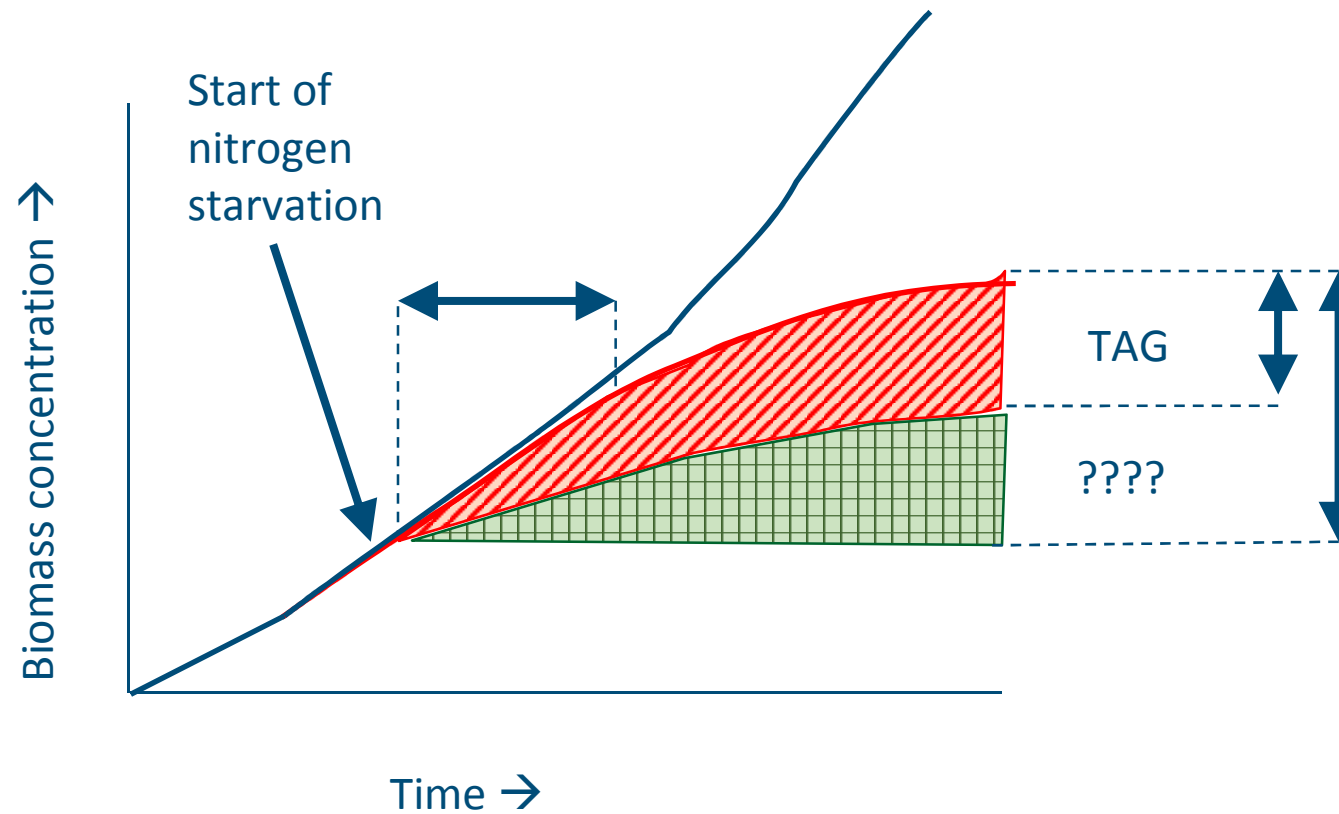
Increase in biomass



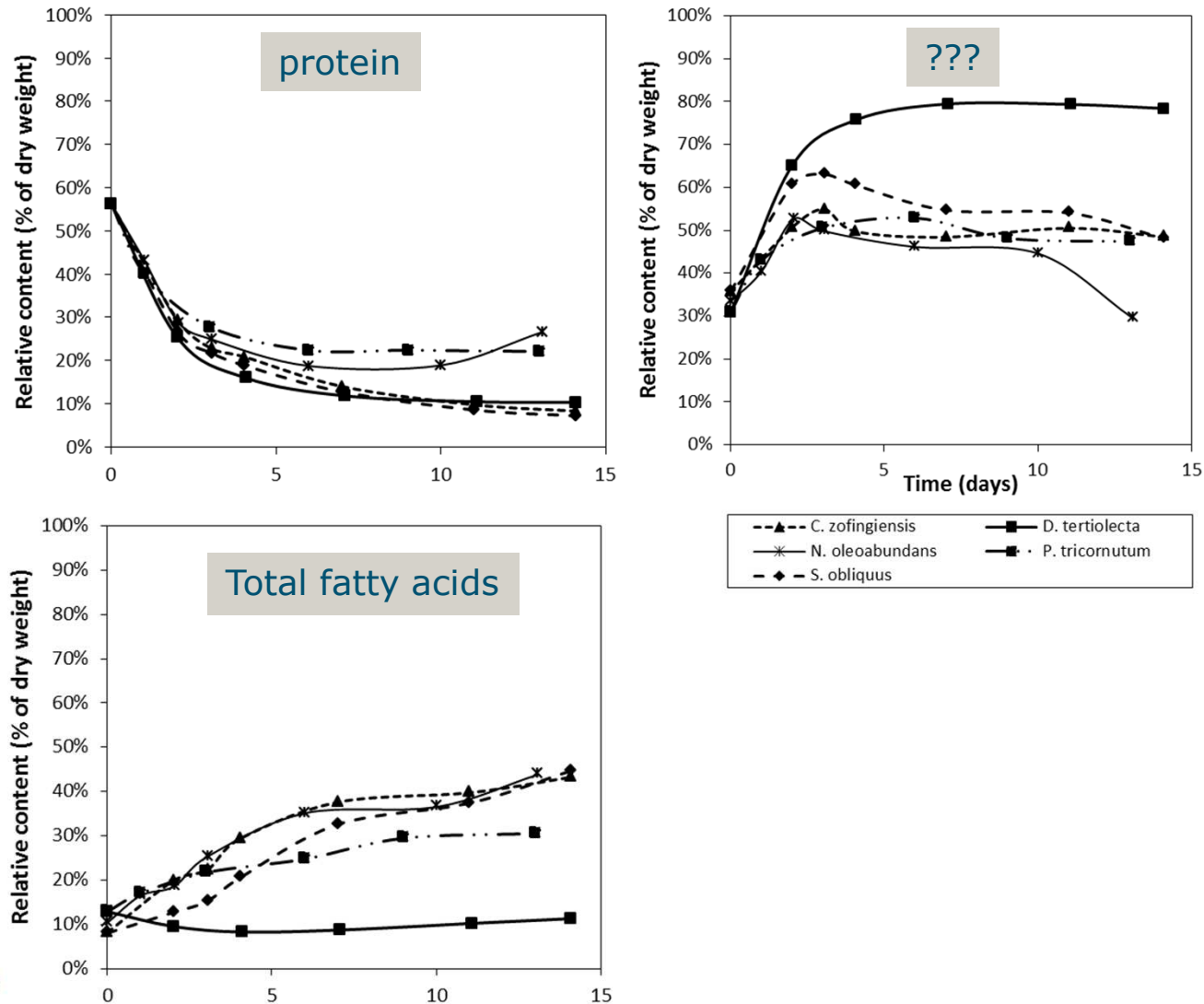
Original “intuitive” idea of TAG accumulation by nitrogen starvation



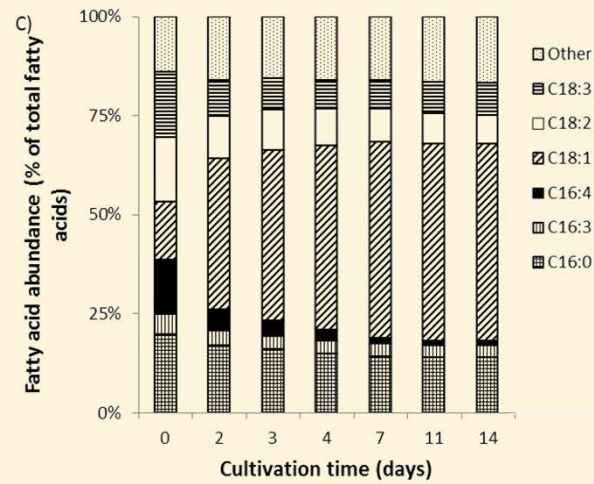
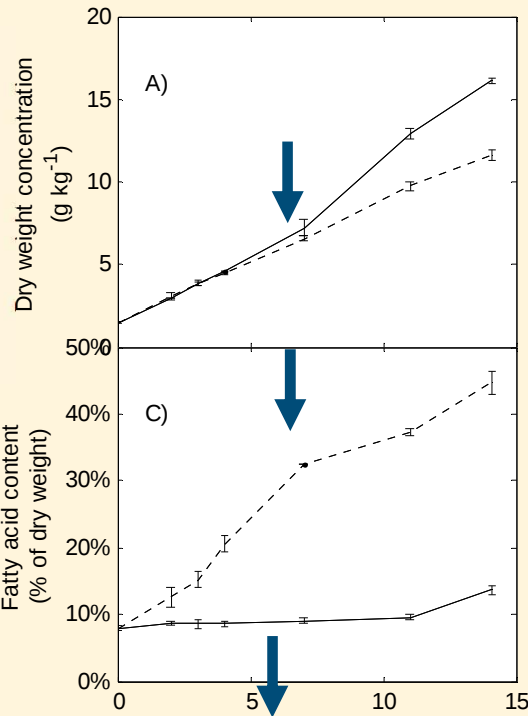
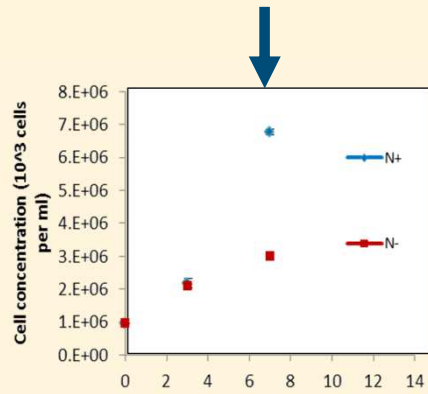
What actually happens



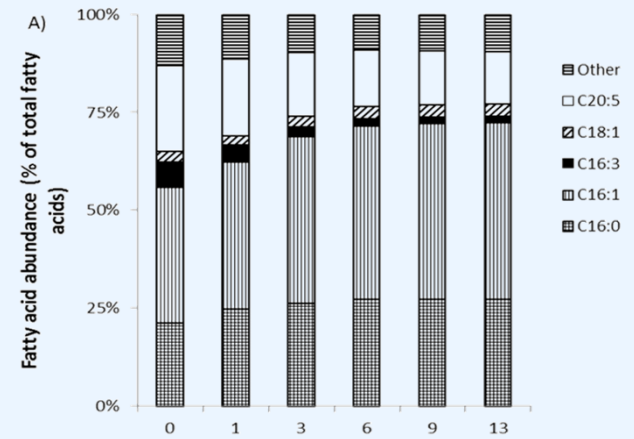
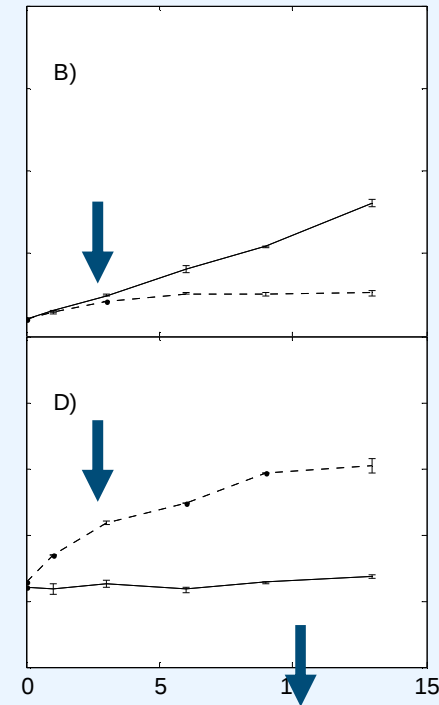
Dynamics of biomass composition



S. obliquus



P. tricornutum



Conclusions

- Differences in TAG content and fatty acid composition between most promising species minor
- Main difference: impact of nitrogen starvation on amount and rate of biomass formation
- Time scale of biomass formation, lipid accumulation, and change in fatty acid composition upon nitrogen starvation different
- *Scenedesmus obliquus* and *Chlorella zofingiensis* most promising