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Genetics of adaptive photoperiodic response in *Nasonia vitripennis*

Silvia Paolucci

1. “Mother knows best”. Adult *Nasonia* females perceive photoperiodic cues signaling the approaching winter and control the development of their offspring accordingly, by inducing diapause. In this way, mothers synchronize the offspring’s development with seasonal cycle (This thesis).
2. The combination of QTL analysis, candidate gene approach and the study of gene polymorphism across a latitudinal cline, in association with clinal variation in diapause, strongly indicates the involvement of the clock gene period in adaptive photoperiodic response in *Nasonia* (This thesis).
3. It is unlikely that the debate on the evolutionary link between circadian clock and seasonal response will lead to a definitive, comprehensive solution, valid for all organisms. In fact, seasonal adaptation is based on different mechanisms in various species and the existence of both facultative and obligatory diapause is an example.
4. Although experiments performed under laboratory controlled conditions are useful to identify the role of specific factors influencing diapause (and other life history traits), one should always be aware that the response under natural conditions is determined by a multitude of interacting and varying factors, often impossible to replicate in the laboratory.
5. One realizes that latitudinal clines exist by doing experiments on diapause induction in wasps, but also by spending enough time in Italy, The Netherlands and Finland.
6. Adapting to low temperatures is not as difficult as adapting to lack of sunlight. The latter is nearly impossible for human beings.
7. Scientists paid by public institutions are responsible for the use of the financial resources they receive and should be trained and always willing to communicate to the public (the taxpayers) how the money is used, what the purpose of their research is and how the society can benefit from it.
8. “You do not really understand something unless you can explain it to your grandmother” (Albert Einstein)
9. There is one absolute truth in life: it’s all relative.