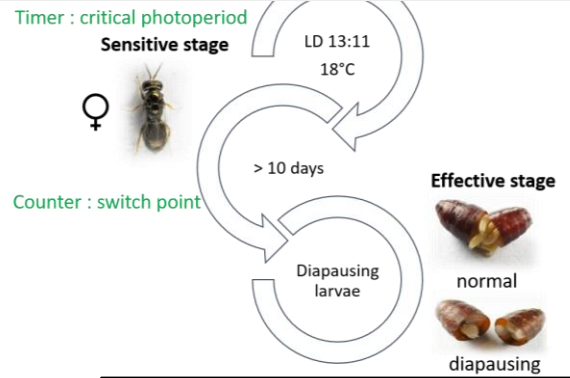


Allelic variation of candidate genes for timing and effectuating photoperiodic diapause induction in the parasitoid *Nasonia vitripennis*.

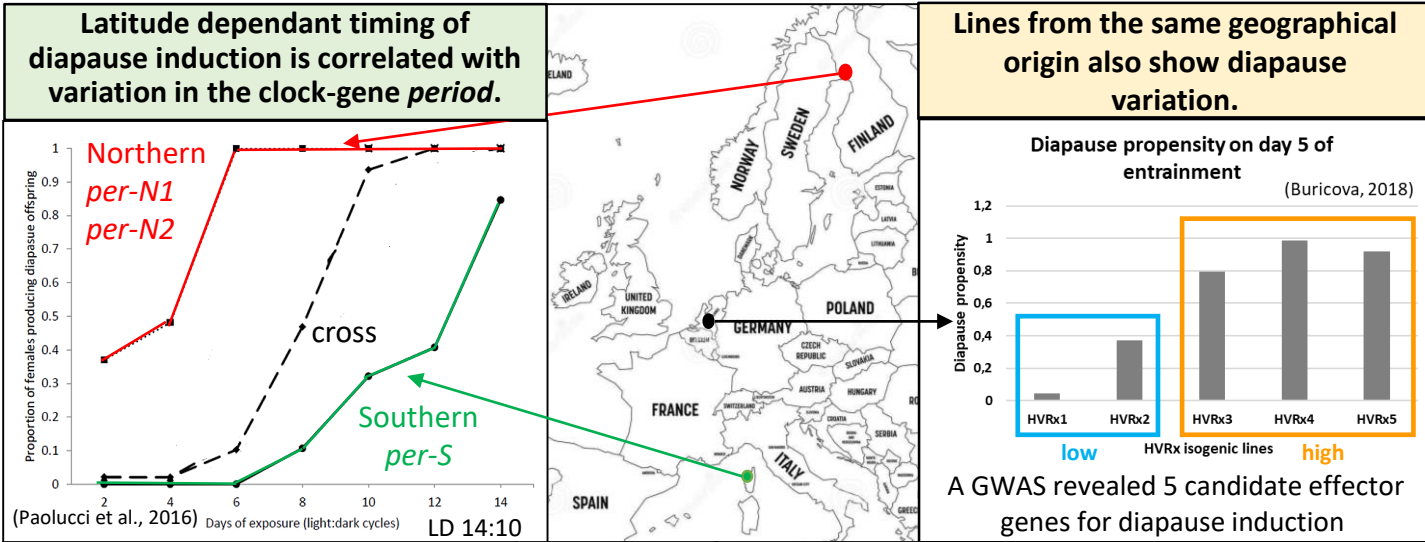
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Background In *Nasonia*, diapause is a larval dormant stage induced by the mother after a certain number of days (switch point), that is dependent on the hours of daylight (photoperiod).



Induction of diapause involves:

1. Timing of the photoperiod
2. Counting of the days till switch point.



Do other clock genes show a similar correlation ?

Do non-clock genes show a similar correlation ?

Method

Genomic analysis of isogenic lines from different latitudes for SNP variation in candidate genes.

Results

Polymorphisms in <i>period</i> , <i>cry-2</i> and <i>cycle</i> are associated with diapause response							Polymorphisms in <i>SIPA111</i> are associated with diapause response													
	<i>per</i>		<i>cry-2</i>		<i>cyc</i>			<i>DDX 28</i>	<i>Or 175</i>	<i>CBFA2T1</i>	<i>APC11</i>			<i>SIPA111</i>						
N1	T	G	T	G	A	T	N1	A	G	G	G	C	G	T	G	C	A	A	G	G
N2	G	G	T	G	A	T	N2	A	G	G	G	C	G	T	G	C	A	A	G	G
N3	T	G	C	G	T	C	N3	G	C	G	G	A	G	T	G	G	A	A	A	A
N4	T	G	C	G	T	C	N4	G	C	G	G	A	G	T	G	G	A	A	A	A
HVRx (H)	G	A	C	G	A	C	HVRx (H)	G	C	G	T	A	G	A	G	C	A	A	G	G
HVRx (L)	G	A	C	G	A	C	HVRx (L)	A	G	T	G	C	A	T	C	G	T	G	A	A
S1	G	A	C	A	A	T	S1	G	C	G	G	C	G	T	G	G	A	G	A	G
S2	G	A	C	A	A	T	S2	G	C	G	G	C	G	T	G	G	A	G	A	A
S3	G	A	C	A	A	C	S3	G	C	G	G	A	G	T	G	G	A	G	A	G
S4	G	A	C	A	A	T	S4	A	C	G	G	C	G	T	G	G	A	G	A	G

Conclusion Polymorphisms in the clock genes *per*, *cry-2* and possibly *cyc* and the non-clock gene *SIPA111* showed a haplotype distribution according to latitude-of-origin. Our results support a role of the circadian clock in the timing and of *SIPA111* in the realization of diapause. Selection pressure may differ between high and low latitudes.