

## Climate factors influence the occurrence of white spot disease in cultured penaeid shrimp in Chanthaburi province, Thailand

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**Supplement.** The correlation between climate conditions and WSD occurrence. The same climate condition shows the same WSD occurrence, even if prawn stages were different.

Table S1. Multivariate NBR model for the association between monthly WSD occurrence in different shrimp stages and climate factors, (A) 9 – 30 days of culture (1,106 cases), (B) 31 – 60 days of culture (618 cases) and (C) 61 – 90 days of culture (202 cases).

$\beta$  = estimated coefficient, IRR = incident rate ratios, CI: 95% = 95% confidence interval

(A) 9 – 30 days of culture (1,106 cases)

Factor	$\beta$	IRR (CI: 95%)	P-value
Constant	1.56		
Average atmospheric temperature (°C)			<0.0001
quartile 1 (24.5 – 27.2)	0.84	2.32 (1.66 – 3.26)	
quartile 2 (27.3 – 27.9)	0.70	2.01 (1.42 – 2.86)	
quartile 3 (28.0 – 28.5)	0.57	1.77 (1.25 – 2.50)	
quartile 4 (28.6 – 29.8)		–*	
Daily atmospheric temperature variation			0.1
8.2 + 1.4 (Mean + SD)	0.08	1.07 (0.98 – 1.20)	

(B) 31 – 60 days of culture (618 cases)

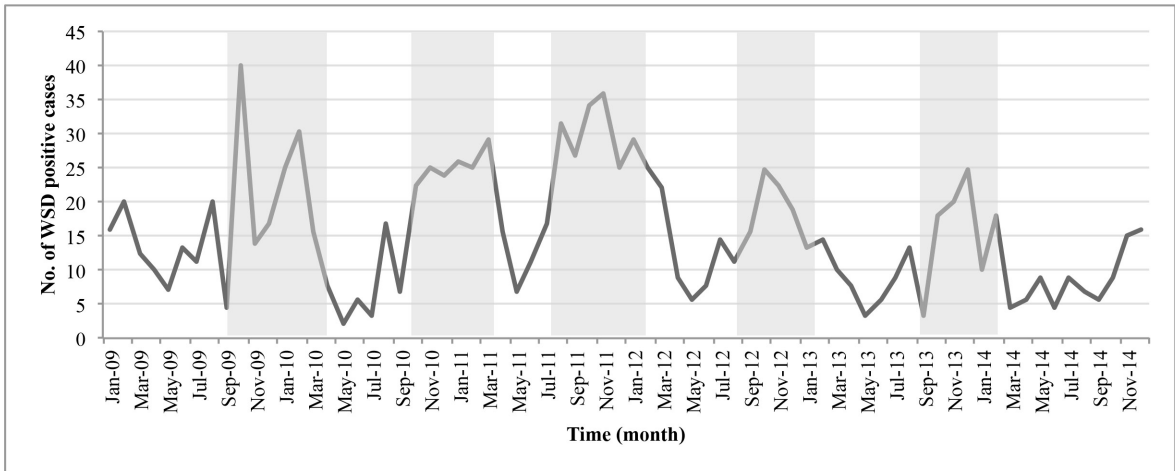
Factor	$\beta$	IRR (CI: 95%)	P-value
Constant	1.04		
Average atmospheric temperature (°C)			<0.0001
quartile 1 (24.5 – 27.2)	0.69	2.00 (1.66 – 3.26)	
quartile 2 (27.3 – 27.9)	0.62	1.87 (1.42 – 2.86)	
quartile 3 (28.0 – 28.5)	0.56	1.74 (1.25 – 2.50)	
quartile 4 (28.6 – 29.8)		–*	
Daily atmospheric temperature variation			0.06
8.2 + 1.4 (Mean + SD)	0.07	1.07 (0.99 – 1.16)	

(C) 61 – 90 days of culture (202 cases)

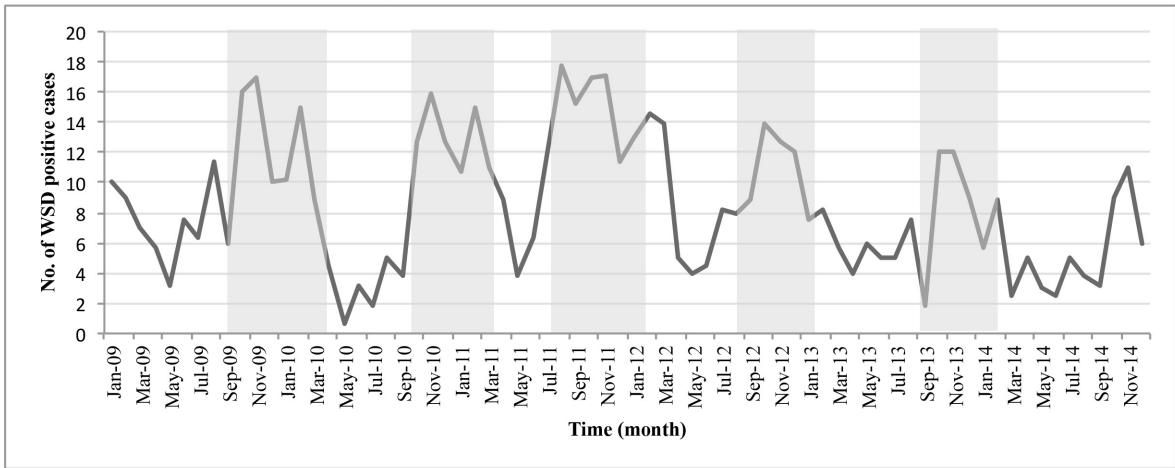
Factor	$\beta$	IRR (CI: 95%)	<i>P</i> -value
Constant	0.29		
Average atmospheric temperature (°C)			0.01
quartile 1 (24.5 – 27.2)	0.71	2.05 (1.22 – 3.44)	
quartile 2 (27.3 – 27.9)	0.83	2.30 (1.39 – 3.80)	
quartile 3 (28.0 – 28.5)	0.62	1.11 (1.11 – 3.10)	
quartile 4 (28.6 – 29.8)		-*	
Daily atmospheric temperature variation			0.5
8.2 + 1.4 (Mean + SD)	0.02	1.02 (0.92 – 1.13)	

\* The fourth quartile of each factor was used as reference

(A) 9 - 30 days of culture (1,106 cases)



(B) 31 - 60 days of culture (618 cases)



(C) 61 - 90 days of culture (202 cases)

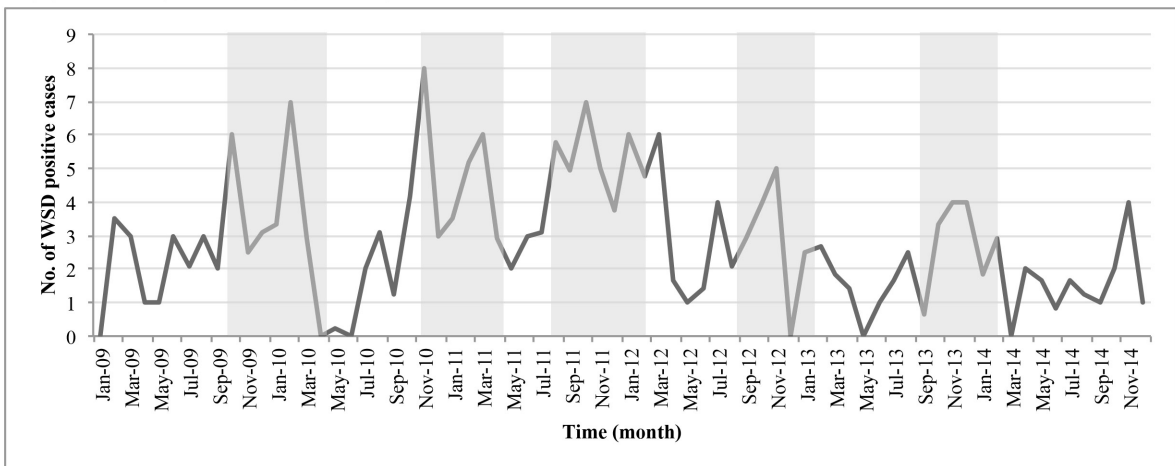


Fig. S1. Number of WSD positive cases reported during 2009 -2014 in Chanthaburi province. (A) 9 – 30 days of culture (1,106 cases), (B) 31 – 60 days of culture (618 cases) and (C) 61 – 90 days of culture (202 cases).