

W. Cherry Fruit Fly (*Rhagoletis indifferens* Curran) – Song et al. Model (Mid-Col., OR) merged with Jones et al. 1991 Model (ID and WA)

by IPPC (Len Coop) June 16, 2011

Based on work by Yoo-Han Song, Helmut Riedl, L. Coop, M. Omeg, S. Castagnoli, and L. Long, 2004. Development and Validation of Phenology Models for predicting cherry fruit fly emergence and oviposition in the Mid-Columbia Area. Poster presented at Portland Pest and Disease Conference, Jan 2004. Copy of Poster at:

http://uspest.org/ipm/cff_poster_portland.jpg

Song et al. Model – Tlow 41F, biofix March 1, Single Sine Calculation method

From Tables 1 & 2:

	Degrees C (5 C threshold)				Degrees F (41 F threshold)				Merge w/Jones et al. Model:	
	Aliniabee	Jones	Song et al		Aliniabee	Jones	Song et al			
	Emergence	Trap Catch	Emergence	Trap Catch	Emergence	Trap Catch	Emergence	Trap Catch		
First occurrence	462	580	391	480	831.6	1044	703.8	864	1 st trap catch – Hood River	864
First occ. The Dalles				550				990	1 st trap catch – The Dalles	990
50% occurrence	631	920	650	929	1135.8	1656	1170	1672.2	1 st trap catch – Idaho	1031
Last occurrence	734		1137	1694	1321.2		2046.6	3049.2	1 st trap catch – WA	1066
									50% trap catch – all locatic	1664
									Last trap catch – all locatic	3049

Note: 50% trap catch was averaged (Jones = 1656, Song = 1672, avg = 1664)

Note: In addition, the calculation method was changed from simple average (A) (which was used by AliNiabee for W. of Cascades models) to Singe Sine Curve (S1), which was used both by Jones et al. and Song et al.

The effect of this change is shown below: overall, events were predicted ca. 3 days (range 2-4 days) earlier using S1 than A:

Change Calc Method From A to S1 (simple avg to single sine): Comparison run June 16, 2011 (using forecast and average weather for days after June 15)

Hood River – 3 locations:

	HR HRANNA			HR HOXO			Parkdale PARO			Averages	
	A	S1	Diff (days)	A	S1	Diff (days)	A	S1	Diff (days)		
1 st trap catch – Hood River	864	06/20/11	06/18/11	-2	06/14/11	06/10/11	-4	06/25/11	06/21/11	-4	-3.33
1 st trap catch – The Dalles	990	06/25/11	06/22/11	-3	06/19/11	06/17/11	-2	06/30/11	06/26/11	-4	-3
1 st trap catch – Idaho	1031	06/26/11	06/23/11	-3	06/20/11	06/18/11	-2	07/01/11	06/27/11	-4	-3
1 st trap catch – WA	1066	06/27/11	06/25/11	-2	06/21/11	06/20/11	-1	07/02/11	06/29/11	-3	-2
50% trap catch – all locations	1662	07/16/11	07/14/11	-2	07/11/11	07/09/11	-2	07/21/11	07/18/11	-3	-2.33
Last trap catch – all locations	3049	08/28/11	08/25/11	-3	08/22/11	08/20/11	-2	09/02/11	08/29/11	-4	-3
Averages				-2.5			-2.17			-3.67	-2.78

The Dalles – 3 locations:

	The Dalles KDLS			The Dalles TD450 (Casey Pink)			The Dalles TD150			Averages	
	A	S1	Diff (days)	A	S1	Diff (days)	A	S1	Diff (days)		
1 st trap catch – Hood River	864	06/01/11	05/28/11	-4	06/09/11	06/05/11	-4	06/24/11	06/21/11	-3	-3.67
1 st trap catch – The Dalles	990	06/06/11	06/04/11	-2	06/15/11	06/11/11	-4	06/29/11	06/26/11	-3	-3
1 st trap catch – Idaho	1031	06/08/11	06/05/11	-3	06/17/11	06/13/11	-4	06/30/11	06/27/11	-3	-3.33
1 st trap catch – WA	1066	06/10/11	06/07/11	-3	06/19/11	06/15/11	-4	07/01/11	06/28/11	-3	-3.33
50% trap catch – all locations	1662	07/02/11	06/29/11	-3	07/08/11	07/06/11	-2	07/20/11	07/17/11	-3	-2.67
Last trap catch – all locations	3049	08/13/11	08/11/11	-2	08/19/11	08/17/11	-2	09/01/11	08/29/11	-3	-2.33
Averages				-2.83			-3.33			-3	-3.06