



Summary

Data were gathered from participants using the Turning Point audience response system at eight events held between November 2008 and March 2009. One type of event was large gatherings, for example, the Washington State Horticultural Association (WSHA), Wilbur-Ellis, and GS Long annual meeting Spanish language sessions. The other type of event consisted of smaller recertification classes, four in Spanish and one in English (at the Pasco Ag Trade show). Thus, seven of the eight sessions were conducted in Spanish. Most survey questions were asked of all audiences, with the exception of a few questions not asked at the Pasco recertification class and/or the WSHA meeting, as noted in the result tables. Also noted in the tables are questions where respondents could select more than one response or where answer choices were slightly modified. The majority of respondents (91%) reported liking using the Turning Point system.

Of all respondents, 36% were pesticide applicators and 32% were supervisors. The remaining respondents were divided among owners, managers, consultants, other, and a few who didn't work in orchards. 73% of respondents worked in tree fruit, 15% in grapes, and smaller percentages in wheat, potatoes, and other crops. 70% of respondents indicated that they applied pesticides as part of their jobs, and 45% supervised people who apply pesticides. Thus, respondents were quite involved in pesticide work, especially on tree fruit.

In terms of the Guthion phase-out, just under 70% of respondents had worked with the pesticide Guthion, and 57% had been part of a cholinesterase monitoring program. 79% of respondents knew that Guthion was being phased out and 52% knew that 2012 was the last year it was approved for use (27% reported not knowing the answer). Further, 40% of respondents said they knew how to manage crop production without Guthion (another 23% said the question did not apply to them). Of the newer insecticides, 40-50% of respondents had worked with Assail, Delegate, and/or Intrepid, and 20-30% had worked with Rimon, Altacor, Calypso, and/or Esteem. When asked about alternative pest management practices, just under 74% of respondents indicated they had worked with pheromones and 53% knew what IPM was (an additional 14% said they knew more or less what IPM was). Thus, there was fairly widespread knowledge of the changes taking place in pesticide regulations, and some experience with alternative methods of pest management.

In terms of information sources and safety, 55% of respondents reported getting the information they needed to work with pesticides from the pesticide label or MSDS. Almost half the respondents (48%) got their information from supervisors, 34% from certification classes, and 17% from "government" (DOH, WSDA, L&I, UW, WSU, etc.). Small percentages of respondents reported getting pesticide information from medical providers or other sources, and another small percentage reported not having the information they needed to work with pesticides. When asked about pesticide safety, 91% of respondents knew how to verify the personal protective equipment needed for a particular pesticide and 86% reported knowing the re-entry interval for the pesticides they were using. 73% of respondents reported that people at work ask them questions about the pesticides being used, and 71% indicated that they have enough information to answer those questions. Thus, most respondents gleaned information from pesticide labels and supervisors, and were aware of safety precautions. Most were also knowledgeable enough to answer questions posed to them about the pesticides with which they worked.

A few more specialized questions were asked at the GS Long, Wenatchee recertification, and WSHA meetings. At the GS Long and Wenatchee recertification meetings, which were the last of the series of winter Turning Point events, 27% of the 275 respondents had used the Turning Point system before,



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indicating that there is likely some repetition of respondents in the full sample. In addition, in response to a question about pesticide labels, 38% of respondents reported understanding them well or perfectly, while 39% reported understanding them somewhat, and 11% did not understand them well or at all. This was in a group where 40-50% of respondents applied and/or mixed and loaded pesticides, and just under 33% were responsible for spray crews and pesticide applications. This may indicate a need to ensure that those working with pesticides are able to understand pesticide labels sufficiently or at least know to ask others for help as needed.

Last, of respondents at the GS Long and Wenatchee recertification meetings, just under 68% reported attending the meeting in order to learn, 52% to get pesticide credits, and 27% because they were sent by their supervisors. The majority of respondents (82%) felt that the information presented during the meeting was very helpful or quite helpful to them. Of respondents at the WSHA meeting, just under 55% had attended the Spanish language session for four or more years, while 16% were attending for the first time. In addition, 78% indicated that they would prefer to continue attending seminars in Spanish rather than joining an English language session with simultaneous interpretation. High levels of participation in Spanish language seminars may thus have to do with a desire to learn, provision of pesticide credits, support from supervisors, and the availability of Spanish language sessions.

These Turning Point survey results, while not representative of a random sample of pesticide applicators, supervisors, and other workers, does represent data from a large group of people who attended pesticide recertification and other meetings in central Washington during the winter of 2008-09. Data indicated that respondents know a good deal about the Guthion phase-out, alternative pest management, pesticide safety, and how to get the information they need to work with pesticides. Nevertheless, there is room for additional knowledge and improvement, and perhaps a particular need to work on comprehension of pesticide labels, even among workers specialized in working with pesticides.



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Data

Number of respondents per session

	Frequency	Percent
GS Long Yakima	275	28
Horticultural Association Yakima (WSHA)	272	27.7
Wilbur Ellis Yakima	196	20
Wenatchee Recertification	68	6.9
Pasco Recertification	57	5.8
Pasco Ag Trade English	54	5.5
Sunnyside Recertification	38	3.9
Pasco Ag Trade Spanish	22	2.2
Total	982	100.0

What is your primary role at work?

	Frequency	Percent
Pesticide applicator ¹	355	36.2
Owner/manager ²	75	7.6
Supervisor	319	32.5
Consultant	7	0.7
Other	89	9.1
I don't work in orchards ³	24	2.4
Missing	113	11.5
Total	982	100.0

¹ At the WSHA and Wenatchee Recertification meetings, the option "pesticide applicator" was broken out into licensed and unlicensed pesticide applicators. Data here have been compressed.

² At the GS Long and Wenatchee Recertification meetings, the option "owner/manager" was broken down into owners and managers. Data here have been compressed.

³ This option "I don't work in orchards" was not available to the 54 respondents in the Pasco Ag Trade English session.

What crops do you work with? (respondents could select multiple answers)

	Frequency	Percent
Tree fruit	478	73.2
Grapes	99	15.2
Wheat	22	3.4
Potatoes	14	2.1
Other	65	10
Missing	74	11.3
Total # of respondents	634 ¹	

¹ This question was not asked at the WSHA or Pasco recertification meetings.



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Do you apply pesticides as part of your job?

	Frequency	Percent
Yes	693	70.6
No	199	20.3
Missing	90	9.1
Total	982	100.0

Do you supervise people who apply pesticides?

	Frequency	Percent
Yes	447	45.5
No	435	44.3
Missing	100	10.2
Total	982	100.0

Have you worked with the pesticide Guthion?

	Frequency	Percent
Yes	686	69.9
No	188	19.1
I don't know	29	3.0
Missing	79	8.0
Total	982	100.0

Have you been part of a cholinesterase testing/monitoring program?

	Frequency	Percent
Yes	562	57.2
No	329	33.5
I don't know	11	1.1
Missing	80	8.2
Total	982	100.0



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Have you worked with any of these pesticides? (respondents could select multiple answers)

	Frequency	Percent
Assail	501	51
Delegate	458	46.6
Intrepid	405	41.2
Rimon	276	28.1
Altacor	249	25.4
Calypso	237	24.1
Esteem	222	22.6
I don't know	72	7.3
I don't work with pesticides ¹	87	8.9
Missing ²	123	12.5
Total	982	

¹ The option "I don't work with pesticides" was not available to the 57 respondents at the Pasco recertification class.

² If a respondent selected "I don't work with pesticides" alongside any of the other choices, this was counted as a missing (not valid) response. If a respondent selected all 7 pesticides plus "I don't know" it was also counted as missing (not valid).

Did you already know that Guthion is being phased out?

	Frequency	Percent
Yes	777	79.1
No	144	14.7
Missing	61	6.2
Total	982	100.0

Until what year can you continue to use Guthion?

	Frequency	Percent
2009	98	10.6
2012	483	52.2
2015	17	1.8
2020	6	0.7
I don't know	251	27.1
Missing	70	7.6
Total	925 ¹	100.0

¹ This question was not asked at the Pasco recertification session.



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Do you know how to manage crop production without Guthion?

	Frequency	Percent
Yes	370	40
No	148	16
Somewhat	114	12.3
N/A	217	23.5
Missing	76	8.2
Total	925¹	100.0

¹ This question was not asked at the Pasco recertification session.

Have you worked with pheromones?

	Frequency	Percent
Yes	684	73.9
No	140	15.1
I don't know	32	3.5
Missing	69	7.5
Total	925¹	100.0

¹ This question was not asked at the Pasco recertification session.

Do you know what Integrated Pest Management (IPM) is?

	Frequency	Percent
Yes	496	53.6
No	227	24.5
Somewhat	133	14.4
Missing	69	7.5
Total	925¹	100.0

¹ This question was not asked at the Pasco recertification session.



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Where do you get the information you need to work with pesticides? (respondents could select multiple answers)

	Frequency	Percent
From the label/MSDS	548	55.8
From my supervisor	479	48.8
From certification classes	339	34.5
From a government entity (DOH, WSDA, L&I, WSU, UW, etc.)	169	17.2
From a medical provider	49	5.0
From other sources	38	3.9
I don't receive the information I need to work with pesticides	22	2.2
I don't work with pesticides ¹	38	3.9
Missing	70	7.1
Total number of respondents	982	

¹ The option "I don't work with pesticides" was not available to the 95 respondents at the Sunnyside and Pasco recertification classes.

Do you know how to check what kinds of personal protective equipment (PPE) you need to use with a pesticide?

	Frequency	Percent
Yes	895	91.1
No	30	3.1
Missing	57	5.8
Total	982	100.0

When you work with pesticides, do you know the re-entry interval (REI) for the product?

	Frequency	Percent
Yes	849	86.5
No	27	2.75
I don't know what REI means	27	2.75
I don't work with pesticides ¹	22	2.2
Missing	57	5.8
Total	982	100.0

¹ The option "I don't work with pesticides" was not available to the 95 respondents at the Sunnyside and Pasco recertification classes.



Turning Point Data from Pesticide Recertification Classes

Do you get asked questions at work about the pesticides that are being used?

	Frequency	Percent
Yes	722	73.5
No	178	18.1
I don't work with pesticides ¹	25	2.6
Missing	57	5.8
Total	982	100.0

¹ The option "I don't work with pesticides" was not available to the 95 respondents at the Sunnyside and Pasco recertification classes or to the 76 respondents at the English and Spanish Pasco Ag Trade show sessions.

If you are asked pesticide questions at work, do you have enough information to answer them?

	Frequency	Percent
Yes	705	71.8
No	130	13.2
I don't answer such questions	62	6.3
Missing	85	8.7
Total	982	100.0

Did you like using the Turning Point system?

	Frequency	Percent
Liked it	845	91.4
Didn't like it	41	4.4
Missing	39	4.2
Total	925 ¹	100.0

¹ This question was not asked at the Pasco recertification session

Supplemental Questions (GS Long & Wenatchee Recertification meetings)

Have you used the Turning Point system before?

	Frequency	Percent
Yes	94	27.4
No	191	55.7
Missing	58	16.9
Total	343	100.0



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When you work with pesticides, do you understand the labels well?

	Frequency	Percent
Perfectly	60	17.5
Well	73	21.3
Somewhat	134	39
No or not much	39	11.4
N/A	10	2.9
Missing	27	7.9
Total	343	100.0

How would you describe your interactions with pesticides at work? (respondents could select multiple answers)

	Frequency	Percent
I mix and load pesticides	172	50.1
I make pesticide applications	155	45.2
I mix and load pesticides and make pesticide applications	142	41.4
I am responsible for spray crews and pesticide applications	113	32.9
I place orders for pesticides	39	11.4
None of the above	25	7.3
I don't work with pesticides ¹	17	5.0
Missing	32	9.3
Total number of respondents	343	

¹ If a respondent selected "I don't work with pesticides" or "None of the above" along with any of the other choices, this was counted as a missing (not valid) response. If a respondent answered that s/he "mixes and loads **and** makes pesticide applications," s/he was also counted in both "mix and load" and "make pesticide applications" categories as well (and vice versa). The wording on this question will be streamlined for the next session.

Will the information presented during this meeting be helpful to you?

	Frequency	Percent
Very much	182	53.1
Quite a bit	102	29.7
Some	22	6.4
No or not much	5	1.5
I don't know	7	2.0
Missing	25	7.3
Total	343	100.0



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Why did you come to this meeting today? (respondents could select multiple answers)

	Frequency	Percent
To learn	233	67.9
For the credits	181	52.8
My boss sent me	94	27.4
I had a day off of work	23	6.7
To meet and/or see colleagues ¹	4	5.9
For the lunch and/or prizes ¹	7	2.5
I didn't want to go to work ¹	0	0
Other reasons	6	1.7
Missing	12	3.5
Total number of respondents	343	

¹ The options "For the lunch and/or prizes" and "I didn't want to go to work" were not available to the 68 respondents at the Wenatchee recertification class. The option "To meet and/or see colleagues" was not available to the 275 respondents at the GS Long meeting. Percentages were adjusted according to the varying total number of responses. The choices on this question will be standardized for the next session.

Internal Questions (Horticultural Association meeting)

How many years have you come to this workshop at the Hort meetings?

	Frequency	Percent
1 year (first time)	45	16.5
2 years	34	12.5
3 years	32	11.8
4 or more years	152	55.9
Missing	9	3.3
Total	272	100.0

Next year would you prefer to attend seminars in Spanish (like this meeting) or attend seminars in English with simultaneous interpretation?

	Frequency	Percent
Spanish	214	78.7
English with interpretation	52	19.1
Missing	6	2.2
Total	272	100.0