STATE OF WASHINGTON
DEPARTMENT OF AGRICULTURE
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WASHINGTON STATE
DISULFOTON USE SUMMARY

- All disulfoton products formulated at greater than 2 percent disulfoton are classified as restricted use pesticides (RUP).
- Disulfoton is a selective, systemic organophosphate insecticide and acaricide that is especially effective against sucking insects. It is used to control aphids, leafhoppers, thrips, beet fleas and spider mites. Disulfoton products are used on sugar beets, cole crops, corn, wheat, ornamentals, cereal grains and potatoes.
- Disulfoton is available in granular and liquid formulations.
- Disulfoton bears the signal word, "Danger." Disulfoton is classified as toxicity category I – highly toxic. Disulfoton belongs to the organophosphate chemical class.
- The majority of disulfoton use (by pounds a.i.) occurs in potatoes, wheat and asparagus.
- Major uses in Washington State are as follows (listed alphabetically):

CROP	WASS* 2001 EST. ACRES PLANTED	EST. % ACRES TREATED	EST. LBS. A.I./ACRE	# OF APPS	EST. ACRES TREATED	EST. LBS. A.I. APPLIED
Asparagus	19,000	25	1	3	4,750	14,250
Barley**	430,000					
Beans, dry	34,000					
Beans, snap	NA					
Brassica	NA					
Lentils	80,000					
Lettuce	NA					
Peas (green & dry)	100,000					
Peppers	NA					
Potatoes, Irish***	15,000	Disulfoton not used on this crop in Western WA. See note & narrative				
Tomatoes	NA					
Wheat	2,490,000	1	1	1	24,900	24,900

* Washington Agricultural Statistics Service

** Commodities noted in **BLUE** have not had peer review input.

*** Data in the above table for potatoes is provided for only potatoes grown in western Washington State. Information provided in the narrative reflects pesticide use practices for both western and eastern Washington State. However, only the data for western Washington State has been peer reviewed.

MAJOR USES (listed alphabetically):

The major use listing supplies the most commonly used formulations of the active ingredient. No discrimination or endorsement is intended.

The pesticide labels take precedence over any information contained herein. It is the responsibility of the user to comply with the label directions provided.

The following pesticide use profile reflects the general pesticide practices for the listed commodities. The use information is not intended to reflect the pesticide application practices of any individual.

APPLICATION AND EQUIPMENT:

- Disulfoton is typically applied using ground equipment (ground boom).

ASPARAGUS:

- Asparagus is grown in eastern Washington State. The principal producing counties are: Franklin (10,900 acres), Yakima (7,300 acres), Walla Walla (1600 acres), Grant (1000 acres), Benton (500 acres) and Adams (500 acres)**.**
- Disulfoton (Di-Syston 8 – WA SLN# 840036) may be applied to asparagus ferns to control aphids. Applications should begin when aphids appear at a rate of 1-pound a.i. per acre. No more than 3 applications per year. (Also controls thrips.) Do not use on asparagus grown for seed.

BARLEY:

- Disulfoton (Di-Syston – various formulations) may be used to control insect pests as follows:
  - Di-Syston 8 may be used to control thrips and aphids
    - Apply through soil injection at planting time with water or liquid fertilizer at a rate of 0.25 fluid ounces per 1,000 feet of row.
    - Label also allows application through irrigation.
    - Foliar application is allowed via aircraft or ground equipment at a rate of 0.5 – 1 (0.5 – 1 pound a.i.) pint per acre. If multiple applications are made, do not exceed a seasonal rate of 1 pint (1 pound a.i) per acre.
  - Di-Syston 15G may be applied to control thrips, brown wheat mite, grasshoppers, Hessian fly and aphids (greenbug, bird cherry-oat).
    - Drill or broadcast at planting at a rate of 6.7 pounds (1 pound a.i.) per acre.
    - Apply only once to control aphids, grasshoppers and Hessian fly.
    - Aphid control with foliar sprays is more successful when materials are applied during the warmer part of the day. Adequate coverage also is necessary – 5 gallons of water per acre increases spray coverage and effectiveness.

- Greenbugs may be controlled on irrigated barley by applying disulfoton at a rate of 6.7 pounds (1 pound a.i.) per acre either pre-plant, preemergence, or postemergence. Disulfoton may be mechanically incorporated at pre-plant. Apply postemergence when aphids first appear.

BEANS, DRY:

- Disulfoton (Di-Syston 8) may be used to control the following insect pests in dry beans:
  - aphids (including bean aphid and pea aphid)
  - Mexican bean beetle
  - spider mites (including two-spotted spider mites, strawberry spider mite and Pacific spider mite)
  - thrips (Disulfoton is used only on newly established plants. Thrips are considered mite predators for seedlings)
- It is applied at planting or side-dress at a rate of 1 - 2 pounds a.i. per acre. Do not apply more than once per season. Note: Most materials available for aphid control are disruptive to beneficials.

BEANS, SNAP:

- Disulfoton (Di-Syston – various formulations) may be used to control the following insect pests in snap beans:
  - aphids (including green peach aphid, potato aphid, bean aphid and pea aphid)
  - spider mites (including two-spotted spider mites, strawberry spider mite and Pacific spider mite)
  - thrips (disulfoton is used only on newly established plants. Thrips are considered mite predators for seedlings)
- It is applied in a band on each side of the seed furrow at planting at a rate of 1 - 2 pounds a.i. per acre. Do not apply more than once per season. Note: Most materials available for aphid control are disruptive of beneficials.

BRASSICA (broccoli, Brussels sprouts, cabbage, cauliflower):

- Disulfoton (Di-Syston – various formulations) may be used to control the following insect pests:
  - aphids (including cabbage aphid, turnip aphid and green peach aphid) – applied at a rate of 1 pound of a.i. per acre.
  - flea beetles – applied at a rate of 1 –2 pounds of a.i. per acre.
- In granular form, it is applied as a band on each side of seed furrow or transplanted row at planting, or as a side dressing after plants become established. Liquid injections can be made in a similar manner.
- Do not apply to broccoli or cabbage more than once per season, or apply to Brussels sprouts and cauliflower more than twice per season. Allow a minimum of 21 days between applications.
- Note: Disulfoton is relatively insoluble and requires high soil moisture to give best results. Follow disulfoton application with sprinkler or furrow irrigation.

LENTILS:

- Disulfoton (Di-Syston 8) may be applied at a rate of 1 - 2.5 pounds of a.i. per acre to control aphids (green peach aphid, bean aphid and pea aphid).

LETTUCE:

- Disulfoton (Di-Syston 8) may be applied to control aphids, primarily green peach aphid. Application rate depends on row spacing, chemigation via drip or trickle irrigation, or post-plant side-dress via soil injector.

PEAS, GREEN AND DRY:

- Disulfoton (Di-Syston 8) may be applied at a rate of 1 - 2.5 pints of product (1 – 2.5 pounds a.i) per acre to control aphids (including pea aphid). Do not apply more than once per season.

PEPPERS:

- Disulfoton (Di-Syston 15G) may be applied at a rate of 1 - 2 pounds of a.i. per acre to control aphids, including green peach aphid.

POTATOES (IRISH):

- No foliar sprays of disulfoton are allowed west of the Rocky Mountains.
- Disulfoton may be used to control the following insect pests:

  Aphid
  - Di-Syston 15G and Di-Syston 8 (liquid) may be applied pre-plant broadcast at a rate of 3 – 4 pounds a.i. per acre.
  - Timing of pre-plant applications is geographically specific:
    - ✓ Columbia Basin: October - February
    - ✓ Western Washington: not used
  - Di-Syston 15G and Di-Syston 8 (liquid) may be applied at a rate of 2 –3 pounds a.i. per acre as an in-furrow at-plant treatment.
  - Timing of at-plant applications is geographically specific:
    - ✓ Columbia Basin: October - February
    - ✓ Western Washington: not used
  - Di-Syston 8 may be applied at a rate of 3 pounds a.i. per acre via chemigation (Columbia Basin).
  - Timing of emergence to harvest applications for aphid control is geographically specific:
    - ✓ Columbia Basin: March – September
      Disulfoton is applied by ground equipment, chemigation or by air.
    - ✓ Western Washington: not used

  Colorado potato beetle
  - Di-Syston 15G and Di-Syston 8 (liquid) may be applied at a rate of 2 –3 pounds a.i. per acre as an in-furrow (broadcast or side-dress) application.
  - Timing of at-plant applications is geographically specific:
    - ✓ Columbia Basin: February - April
    - ✓ Western Washington – not used

- Di-Syston 8 may be applied at a rate of 3 pounds a.i. per acre via chemigation (Columbia Basin).
- Timing of emergence to harvest applications for potato beetle control is geographically specific:
  - ✓ Columbia Basin: March – September
    Disulfoton is applied by ground equipment, chemigation or by air.
  - ✓ Western Washington: not used
    Disulfoton is applied by ground equipment or by air.
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<u>Flea beetle, leafhopper and psyllids</u>

- Di-Syston 15G and Di-Syston 8 (liquid) may be applied at a rate of 2 –3 pounds a.i. per acre as an in-furrow (broadcast or side-dress) application.
- Timing of at-plant applications is geographically specific:
  - ✓ Columbia Basin: February - April
  - ✓ Western Washington: not used

TOMATOES:

- Disulfoton (Di-Syston – various formulations) may be used to control the following insect pests in tomatoes:
  - aphids (including green peach aphid and potato aphid)
  - Colorado potato beetle
  - flea beetles
  - spider mites
- Disulfoton is applied in a band at planting or side-dressed after plants established at a rate of 1 - 3 pounds of a.i. per acre.
- If two applications are needed, allow 21 days between applications and use only 2 pounds of a.i. per acre.

WHEAT:

- Disulfoton (Di-Syston – various formulations) is typically aerially applied to control insect pests as follows:
  - Di-Syston 8 may be used to control barley thrips, brown wheat mite, grasshoppers, Hessian fly and aphids.
    - ✓ Fall wheat: Apply through soil injection at planting time with water or liquid fertilizer at a rate of 0.25 fluid ounces (0.25 ounces a.i.) per 1,000 feet of row.
    - ✓ Label also allows application through irrigation.
    - ✓ Spring or fall wheat: Apply postemergence at a rate of 4 – 12 fluid ounces (1/4 – 3/4 pounds a.i.) per acre as a foliar application spray or fertilizer top dress. Only one foliar application may be made during the growing season. Do not exceed a seasonal rate of 1 pint per acre per season.
  - Di-Syston 15G may be applied to control barley thrips, brown wheat mite, grasshoppers, Hessian fly and aphids (greenbug, bird cherry-oat).
    - ✓ Fall wheat: Drill or broadcast at planting at a rate of 1.67 ounces (0.25 ounces a.i.) per 1,000 feet of row.
    - ✓ Only one application may be made during the growing season.

- Di-Syston 15G may be applied to control grasshoppers, Hessian fly and aphids (greenbug, bird cherry-oat).
  - ✓ Drill or broadcast at planting at a rate of 6.7 pounds (1 pound a.i.) per acre.
  - ✓ Only one application may be made during the growing season.
  - ✓ Disulfoton treatments are designed to protect fall-sown wheat from grasshopper damage in the fall. In many cases, treating the outermost rows provides ample protection against grasshoppers. These treatments will not protect wheat from sprig grasshopper infestations.
  - ✓ Aphid control with foliar sprays is more successful when materials are applied during the warmer part of the day. Adequate coverage also is necessary – 5 gallons of water per acre increases spray coverage and effectiveness.
  - ✓ Irrigated wheat: Greenbugs may be controlled on irrigated wheat by broadcasting (ground or aerially) Di-Syston 15G at a rate of 6.7 pounds (1 pound a.i.) per acre either pre-plant, preemergence, or postemergence and then irrigating. Di-Syston 15G may be mechanically incorporated at pre-plant. Apply postemergence when aphids first appear. Only one application per year.

PRODUCT NAMES & LABELED CROP (Commercial Use):

A complete list of all products currently registered for commercial use in Washington State and their respective labeled crop is attached.

PRODUCT NAME	CROP
DI-SYSTON 15% GRANULAR (SLN: RADISH SEED CROP)	RADISH SEED CROP
DI-SYSTON 15% GRANULAR INSECT (SLN: WHEAT & BARLEY)	BARLEY
DI-SYSTON 15% GRANULAR INSECT (SLN: WHEAT & BARLEY)	WHEAT
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	APPLE (NON-BEARING)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	APRICOT (NON-BEARING)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	BARLEY
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	BEAN (DRY)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	BEAN (GREEN)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	BROCCOLI
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	BRUSSELS SPROUT
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	BULB
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	CABBAGE
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	CAULIFLOWER
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	CHERRY (NON-BEARING)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	CHINESE CABBAGE
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	CHRISTMAS TREE PLANTATION
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	CRABAPPLE (NON-BEARING)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	DECIDUOUS/SHADE TREE
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	FLOWER
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	LENTIL
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	ORNAMENTAL
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	ORNAMENTAL GROUND COVER
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	ORNAMENTAL TREE
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	PEA (DRY)

DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	PEA (GREEN)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	PEACH (NON-BEARING)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	PEAR (NON-BEARING)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	PEPPER
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	PLUM (NON-BEARING)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	POTATO
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	PRUNE (NON-BEARING)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	SHRUB
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	SORGHUM
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	SOYBEAN
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	SOYBEAN SEED CROP
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	STRAWBERRY
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE	WHEAT
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	BARLEY
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	BEAN (DRY)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	BEAN (GREEN)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	BEAN (LIMA)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	BROCCOLI
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	BRUSSELS SPROUT
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	CABBAGE
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	CAULIFLOWER
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	CHINESE CABBAGE
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	CHRISTMAS TREE PLANTATION
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	DECIDUOUS/SHADE TREE
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	LENTIL
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	ORNAMENTAL TREE
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	PEA (DRY)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	PEA (GREEN)
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	PEPPER
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	POTATO
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	SHRUB
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	SORGHUM
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	SOYBEAN
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	SOYBEAN SEED CROP
DI-SYSTON 15% GRANULAR SYSTEM INSECTICIDE (B)	WHEAT
DI-SYSTON 15% GRANULAR (SLN: CLOVER SEED)	CLOVER SEED CROP
DI-SYSTON 8 (SLN: ASPARAGUS)	ASPARAGUS
DI-SYSTON 8 (SLN: RADISH SEED CROP)	RADISH SEED CROP
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	BARLEY
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	BEAN (DRY)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	BEAN (GREEN)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	BROCCOLI
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	BRUSSELS SPROUT
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	CABBAGE
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	CAULIFLOWER

DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	CHINESE CABBAGE
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	CORN (FIELD)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	LENTIL
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	LETTUCE
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	PEA (DRY)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	PEA (GREEN)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	POPCORN
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	POTATO
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	SORGHUM
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	STRAWBERRY (NON-BEARING)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	TOMATO
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE	WHEAT
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	BARLEY
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	BEAN (DRY)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	BEAN (GREEN)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	BROCCOLI
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	BRUSSELS SPROUT
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	CABBAGE
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	CAULIFLOWER
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	CHINESE CABBAGE
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	LENTIL
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	LETTUCE
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	PEA (DRY)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	PEA (GREEN)
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	POTATO
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	SORGHUM
DI-SYSTON 8 EMULSIFIABLE SYSTEMIC INSECTICIDE (B)	WHEAT
DI-SYSTON TECHNICAL	FORMULATING/MANUFACTURING

References:

2002 Washington Agricultural Statistics, Washington Agricultural Statistics Service
2003 Farm Chemicals Handbook, Meister Pro Information Resources
2003 Pacific Northwest Insect Management Handbook, Extension Services of OSU, WSU, and UI
Asparagus Integrated Pest Management, WSU EB 1383, WSU Extension Service

2003 Washington State registered pesticide labels

CDMS Label Database: http://www.cdms.net/manuf/manuf.aspwebsite
Crop Profile for Potatoes in Oregon: http://pestdata.ncsu.edu/cropprofiles/docs/orpotatoes.html
ExToxNet Pesticide Information Profiles: http://ace.orst.edu/info/extoxnet/pips/pips.html
Greenbook, Chemical & Pharmaceutical Press Inc.: http://www.greenbook.net/
National Agricultural Statistics Service – Agricultural Chemical Use Database: http://www.pestmanagement.info/nass/
National Center for Food & Agricultural Policy: http://www.ncfap.org/database/ingredient/default.asp
National Pesticide Use Database: http://www.ncfap.org/database/ingredient/default.asp
Pesticide Action Network Pesticide Database: http://www.pesticideinfo.org/index.html
Puget Sound Farm Direct Marketing Association: http://dnr.metrokc.gov/wlr/farms/locate_search.htm
U.S. Department of Agriculture National Agricultural Statistics Service: http://www.usda.gov/nass/
U.S. Department of Agriculture Crop Profiles: http://pestdata.ncsu.edu/cropprofiles/ (apples)
Washington State Pesticide Management Practices: http://www.tricity.wsu.edu/~cdaniels/wapiap.html
WSU PICOL Label/Crop Profile Database: http://picol.cahe.wsu.edu/LabelTolerance.html

Pest Management Strategic Plan, summary of workshop held February 19-20, 2002 in Boise, Idaho (potatoes)

Personal communication – Brian Davis, February 6, 2003, wheat chemigation specialist, Quincy Farm Chemicals, Quincy
Personal communication – Gary Hertel, August 4, 2003, Fieldman, Elenbaas Company, Lynden (potatoes)
Personal communication – Andrew Jenson, September 3, 2002, Washington State Potato Commission (potatoes)
Personal communication – Tom Kucklick, Fieldman, McGregor's, St. John
Personal communication – Richard Leitz, Fieldman, Wilbur-Ellis Company, Mattawa (potatoes)
Personal communication and e-mail correspondence – Alan Schreiber, January 31, 2002 & March 24, 2003, Ag Development Group (asparagus, potatoes)
Personal communication – Gretchen Borck, Roger Wesselman & Ron Jirava, WA Association of Wheat Growers, Ritzville
Personal communication – Joe Yenish, June 10, 2003, WSU Cooperative Extension