**APPENDIX 1-6: Use site, General Land Cover Class, and HUC2 Matrix for Diazinon**

Pesticide Root Zone Model 5/Variable Volume Water Model (PRZM5/VVWM) scenarios are developed based on general land cover classes (**ATTACHMENT 1-3: Method for Establishing the Use Footprint**) that represent potential pesticide use areas. Diazinon use sites were associated with a specific general land cover class based on which land cover best represented the use pattern[[1]](#footnote-1). Because the PRZM5/VVWM calculator scenarios were developed for the general land covers, the land covers also determine which PRZM5/VVWM model is used in aquatic modeling. To develop a more spatially refined aquatic exposure assessment, aquatic modeling is conducted for each Hydrologic Unit Code (HUC) 2 Region. These HUC2 regions are shown in the first column of the table. To determine whether to model a use pattern for each HUC2 region 2012 National Agricultural Statistics Service (NASS) Census of Agriculture (CoA) acreage reports[[2]](#footnote-2) for the crops specific to diazinon were crossed with the HUC2 regions based using ArcGIS[[3]](#footnote-3). Unless the label limits a use pattern to a particular geographic area (*e.g*., many uses are only allowed in Texas), the National Agricultural Statistics Census of Agriculture 2012 (NASS) data were used to determine which crops would be modeled for each HUC 2 region. If the NASS data indicated any area of a crop grown (even if it was a small acreage) in a specific HUC 2 region, it was assumed that the crop was grown in that HUC 2 region and diazinon used on that crop within the HUC 2 region. If there were no reported NASS cropped acres grown in a particular HUC 2 region, then it was assumed that the use did not occur in the HUC. In each cell, the crop name from the NASS data label was placed for each general land cover class and HUC2 region. For those crops/use sites where NASS harvested data are unavailable the crop or use site was assumed to occur within the HUC2.

Diazinon uses are mainly represented by the Orchards and Vineyards and Vegetables and Ground Fruit general land cover classes and many occur in all HUC2 regions. When a specific PRZM5/VVWM scenario did not correspond to one of the preliminarily developed general land cover classes, it was placed in the category of Specialty General Land Cover Class. The PRZM5/VVWM calculator scenario used to model these uses patterns (*e.g*., nursery and ornamentals) is the NSlandcoverESA PRZM5/VVWM scenario. General land cover classes have been developed to represent ornamentals grown in nurseries and cattle ear tags. These are not listed in this table. There were no acres reported in NASS for pineapple. These were assumed to be grown in Hawaii and Puerto Rico only. Limited data were available for crops grown in HUC20 and 21. More information on the assumptions used in aquatic modeling, NASS acreage, and which HUC2 regions were modeled for each use pattern is available in **APPENDIX 1-7: Malathion Scenario Development**.

Acknowledgement: An algorithm in excel was developed to automatically populate this table based on NASS data.

| **HUC2** | **Orchards and Vineyards** | **Vegetables and Ground Fruit** | **Specialty General Land Cover Class** |
| --- | --- | --- | --- |
| **1** | APPLES APRICOTS CHERRIES GRAPES FILBERTS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER CRANBERRIES COLE CROPS CUCUMBERS GINSENG KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **2** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER CRANBERRIES COLE CROPS CUCUMBERS FIGS GINSENG KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **3** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS FIGS GINSENG KALE LETTUCE MELONS LOGANBERRIES MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **4** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER CRANBERRIES COLE CROPS CUCUMBERS GINSENG KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **5** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER CRANBERRIES COLE CROPS CUCUMBERS FIGS GINSENG KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **6** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS FIGS GINSENG KALE LETTUCE MELONS MUSTARD GREENS ONIONS PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **7** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER CRANBERRIES COLE CROPS CUCUMBERS GINSENG KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **8** | ALMONDS APPLES APRICOTS FILBERTS GRAPES PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS FIGS KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SPINACH SQUASH STRAWBERRIES SWEET POTATO SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **9** | APPLES APRICOTS CHERRIES FILBERTS GRAPES PLUMS PEARS | BEANS BEETS BLUEBERRIES CABBAGE CANEBERRIES CANTALOUPES CARROTS CRANBERRIES COLE CROPS CUCUMBERS LETTUCE MELONS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SPINACH SQUASH STRAWBERRIES SWEET POTATO SWISS CHARD TOMATOES  | NURSERY-STOCKORNAMENTALS |
| **10** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS GINSENG KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **11** | ALMONDS APPLES APRICOTS CHERRIES FILBERTS GRAPES PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS FIGS KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **12** | ALMONDS APPLES APRICOTS CHERRIES FILBERTS GRAPES PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS FIGS KALE LETTUCE MELONS MUSTARD GREENS ONIONS PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **13** | ALMONDS APPLES APRICOTS CHERRIES GRAPES PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BROCCOLI CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS FIGS KALE LETTUCE MELONS LOGANBERRIES MUSTARD GREENS ONIONS PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **14** | ALMONDS APPLES APRICOTS CHERRIES FILBERTS GRAPES PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BROCCOLI CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SPINACH SWEET POTATO SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **15** | ALMONDS APPLES APRICOTS CHERRIES GRAPES PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BOYSENBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER COLE CROPS CUCUMBERS FIGS KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **16** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BOYSENBERRIES BROCCOLI CABBAGE CANEBERRIES CANTALOUPES CARROTS COLE CROPS CUCUMBERS FIGS KALE LETTUCE MELONS MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **17** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BOYSENBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER CRANBERRIES COLE CROPS CUCUMBERS FIGS GINSENG KALE LETTUCE MELONS LOGANBERRIES MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SPINACH SWEET POTATO SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **18** | ALMONDS APPLES APRICOTS CHERRIES GRAPES FILBERTS PECANS PEACHES PLUMS PEARS | BEANS BEETS BLACKBERRIES BLUEBERRIES BOYSENBERRIES BROCCOLI BRUSSEL SPROUTS CABBAGE CANEBERRIES CANTALOUPES CARROTS CAULIFLOWER CRANBERRIES COLE CROPS CUCUMBERS FIGS KALE LETTUCE MELONS LOGANBERRIES MUSTARD GREENS ONIONS OTHER BERRIES PARSLEY PARSNIPS PEAS PEPPERS POTATOES RADISHES RASPBERRIES SQUASH STRAWBERRIES SWEET POTATO SPINACH SWISS CHARD TOMATOES TURNIPS | NURSERY-STOCKORNAMENTALS |
| **19** | APRICOTS CHERRIES PEACHES PLUMS | BEANS BLACKBERRIES BLUEBERRIES BOYSENBERRIES CANEBERRIES LETTUCE LOGANBERRIES OTHER BERRIES RASPBERRIES  | NURSERY-STOCKORNAMENTALS |
| **20** | APPLES CHERRIES GRAPES PEACHES | BEANS BEETS BROCCOLI CABBAGE CARROTS COLE CROPS CUCUMBERS KALE LETTUCE MUSTARD GREENS ONIONS PARSLEY PARSNIPS PEAS PEPPERS PINEAPPLE POTATOES RADISHES SQUASH SWEET POTATO SPINACH TOMATOES | NURSERY-STOCKORNAMENTALS |
| **21** | NA | PINEAPPLE SWEET POTATO | NURSERY-STOCKORNAMENTALS |

1. Landover by use site cross walk’s for each chemical were provided by EPA’s Environmental Fate and Effects Division. [↑](#footnote-ref-1)
2. <http://quickstats.nass.usda.gov/> [↑](#footnote-ref-2)
3. These data were provided by Steve Lennartz. [↑](#footnote-ref-3)