UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

January 14, 2021

**MEMORANDUM**

**SUBJECT:** Addendum to Aldicarb (PC #098301) Use on Oranges and Grapefruit (DP #454270): Benefits, Estimated Percent Crop Treated (PCT) for use in Risk Assessments, and Anticipated Impacts of Mitigation

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## SUMMARY

On January 7, 2021, the Biological and Economic Analysis Division (BEAD) completed the document titled *Aldicarb (PC #098301) Use on Oranges and Grapefruit (DP #454270): Benefits, Estimated Percent Crop Treated (PCT) for use in Risk Assessments, and Anticipated Impacts of Mitigation*, in which BEAD reviewed the benefits of aldicarb use on oranges and grapefruit in Florida and Texas, provided an estimated percent crop treated

(PCT), and assessed the grower impacts from two registration restrictions to support the aldicarb dietary and ecological risk assessments. This addendum provides additional detail with regard to the data and methodology used to determine that the US imports an average of 10% of its fresh orange and 50% of its orange juice supply annually.

## INTRODUCTION

In Hansel et al. (2021), the Biological and Economic Analysis Division (BEAD) recommended the following percent crop treated (PCT) estimates for use in the refined dietary risk assessment for aldicarb. The estimated national average PCT values for the proposed aldicarb uses, registered in Florida alone, are as follows: fresh oranges: 13%, orange juice: 63%, fresh grapefruit: 13%, and processed grapefruit: 16%. BEAD concludes that the estimated PCT values should be reviewed periodically because national orange acreage, particularly in Florida, has been in decline since 2006, and acreage is a major driver of PCT. As outlined in Hansel et al. (2021), BEAD used the following formula to estimate PCT for fresh oranges and orange juice:

PCT = (National fresh (or processing) orange PCT x Proportion of domestic supply) + (Imported PCT x Proportion of fresh orange (or orange juice) imported)

BEAD found it necessary to account for the potential treatment of imported orange juice with aldicarb because orange juice, which is assessed as a separate food commodity from other oranges in the dietary risk assessment, is a risk driver and because Florida, the only state in which aldicarb will be registered for use on oranges, produces over 90% of the nation's juice oranges each year (USDA NASS 2019).

EPA cannot regulate or estimate the extent to which imported orange commodities comes from oranges treated with aldicarb in foreign countries. The existing tolerance for residues for aldicarb in or on sweet oranges or orange juice produced from sweet oranges is 0.3 parts per million (ppm) and applies to sweet oranges and orange juice from sweet oranges produced domestically and internationally (40CFR§180.269 Aldicarb; tolerances for residues). Further, a number of international maximum residue limits (MRLs, or tolerances) exist for aldicarb (BCGlobal 2020). For these reasons, it was assumed that 100% of the orange trees from which imported oranges and orange juice are sourced are treated with aldicarb.

This addendum is intended to provide clarity with regard to how BEAD determined the proportional contribution of imported fresh oranges, and separately orange juice, to the total US supply of these commodities each year.

## ORANGE COMMODITY DATA

The proportional contribution of imported fresh oranges to the annual supply for domestic consumption was previously estimated by BEAD (Atwood 2016). Therefore, in the current assessment, BEAD calculated only orange juice imports.

BEAD used the orange juice production, supply, and demand data provided in Table 1 to estimate the proportion of total supply that is imported annually.

*Table 1. Production, supply, and demand of orange juice for domestic consumption.*

| Commodity | Season | Domestic Production | Domestic Consumption | Ending Stocks | Exports | Imports |
|---|---|---|---|---|---|---|
| | | 1,000 Metric Tons | | | | |
| Orange Juice | 2014-15 | 425 | 663 | 358 | 81 | 330 |
| | 2015-16 | 361 | 631 | 302 | 66 | 280 |
| | 2016-17 | 303 | 581 | 268 | 57 | 301 |
| | 2017-18 | 187 | 572 | 261 | 35 | 413 |
| | 2018-19 | 327 | 610 | 294 | 29 | 345 |
| | ***AVG*** | ***321*** | ***611*** | ***297*** | ***54*** | ***334*** |

*Source: USDA FAS 2019*

## METHODOLOGY

To determine the annual contribution of imported orange juice to the total US supply, BEAD input the Table 1 averages into the following formula:

Proportion of Annual Supply Imported = Imports / (Domestic Production + Imports) * 100

## RESULTS

*Table 2. Average proportion of orange commodities imported annually.*

| Commodity | Percentage of Supply Imported[1] |
|---|---|
| Fresh Oranges | 10%[2] |
| Orange Juice | 50% |

[1] *Values rounded to the nearest multiple of 5.*

2 *Value from Atwood (2016) Table 3 "% Import Component of Consumption"*

## CONCLUSIONS

The values provided in Table 2 were used by BEAD to estimate the national fresh orange and orange juice PCT values presented by Hansel et al. (2021) for use in the aldicarb dietary risk assessment.

## REFERENCES

Atwood, D. 2016. EPA Memorandum: Proportion of Imported Oranges, Orange Juice, Potatoes, and Sweet Potatoes as a Component of Total Consumption in the United States and Review of Registrant submitted Percent Crop Treated Estimate for Sweet Potatoes: Data to Support the Human Dietary Risk Assessment of Aldicarb (PC Code 098301). Available in the docket: [ HYPERLINK "https://beta.regulations.gov/document/EPA-HQ-OPP-2012-0161-0093" ].

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