



STATE OF MAINE
 DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
 BOARD OF PESTICIDES CONTROL
 28 STATE HOUSE STATION
 AUGUSTA, MAINE 04333

JANET T. MILLS
 GOVERNOR

AMANDA E. BEAL
 COMMISSIONER

Memorandum

To: Board of Pesticides Control
 From: Pamela J. Bryer, Ph.D. | Pesticides Toxicologist
 Subject: Sandea Special Local Need 24c Registration 2022 Review

January 11, 2023

Summary:

Halosulfuron-methyl, the active ingredient in Sandea, is a low-toxicity herbicide that is unlikely to cause undue risk to people or the environment from the proposed uses in this Special Local Need 24c registration.

Rationale:

Background: Halosulfuron-methyl is a systemic sulfonylurea (SU) herbicide that acts by inhibiting amino acid synthesis selectively in plants.

Risk is a function of hazard and exposure and both elements must be considered to understand and predict potential effects. Halosulfuron-methyl has generally low toxicity to organisms in acute exposure scenarios. Chronic exposure to mammals has the potential for moderate toxic effects. Label rates and use patterns are dictated by EPA to prevent exposure at levels likely to cause toxic effects in mammals. The generally short half-life and frequency of allowed applications is how exposure is maintained at acceptable levels. The changes to the primary label accounted for in this 24(c) registration are consistent with several other allowable uses; the total annual usage allowed under this registration (1 oz/ A/ yr) is half of the annual usage allowed under the primary label (2 oz/ A/ yr).

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Hazard:

Hazard Test System	Hazard Categorization	Measured Level of Toxic Effect
Mammals acute	LOW	7,758 mg/kg
Mammals chronic	MODERATE	50 mg/kg
Birds acute	LOW	>2,250 mg/kg
Birds chronic	LOW	>5,620 mg/kg
Earthworms acute	LOW	>1,000 mg/kg
Honeybees contact	LOW	>100 mg/kg
Honeybees oral	LOW	>100 mg/kg
Fish acute	LOW	>118 mg/L
Fish chronic	LOW	34 mg/L
Aquatic invertebrates acute	LOW	>107 mg/L
Aquatic invertebrates chronic	MODERATE	>6.9 mg/L
Sediment dwelling invertebrates chronic	MODERATE	5 mg/kg

Cancer:

US EPA's 2020 Cancer Classification for halosulfuron-methyl is:

Not Likely To Be Carcinogenic To Humans

Tolerances:

Tolerances are set for halosulfuron-methyl on a range of commodities: hay, nuts, green vegetables, beans, corn, small grains, and pome fruits. For foods eaten directly by humans the allowable values range from 0.01 ppm to 0.8 ppm (<https://www.ecfr.gov/current/title-40/chapter-I/subchapter-E/part-180/subpart-C/section-180.479>).

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Exposure:

Environmental fate and transfer metric	Categorization	Measured value describing movement in environment
Solubility	Low	10.2 mg/L
Persistence as measured as half-life		
Lab soil half-life	Non-persistent	26.7 days
Field soil half-life	Non-persistent	14 days
On/In plant tissue half-life		3 days
Sunlit water half-life	Stable	Stable
Water half-life	Non-persistent	14 days
Sediment half-life	Fast	10.4 days
Octanol-water partition coefficient (LogP)	Low	-0.02
Soil horizon travel	Moderately mobile	No data
Bioconcentration factor	Low	Calculated < 3
Volatility	Low	0.035 mPa

Maine patterns:

USE: There were 270.5 pounds reported by commercially licensed applicators in Maine for 2018 and 26.6 pounds reported for the same in 2019.

WATER QUALITY: There were no detections of halosulfuron-methyl in the 2021 water quality surveys performed by BPC. The survey sampled 186 wells adjacent to active agricultural land in Maine. This study involved 57 sites located directly adjacent to actively managed blueberry barrens. The laboratory reporting limit for halosulfuron-methyl was 0.01 µg/L (ppb).

National use patterns:

In agriculture, halosulfuron-methyl is commonly used for corn, vegetables, rice, and hay as seen in the estimates modeled by USGS (in the map and chart following). Additionally, EPA estimated, “The annual usage averaged approximately 30,000 pounds a.i. for 1,000,000 acres from 2008-2010.” (<https://www.regulations.gov/document/EPA-HQ-OPP-2011-0745-0056>)

For Non-agricultural usage EPA found:

- non-agricultural use sites: recreational areas, race tracks, non-crop areas, tennis courts, playgrounds, right of way areas, and golf courses;
- use in golf courses increased from less than 500 lbs. a.i. in 2002 to 2,000 lbs. a.i. in 2004 and then declined to 1,000 lbs. a.i. in 2006;

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- for turf farms, use was almost 1,000 lbs a.i. in 2004 and 2006. There were less than 500 lbs a.i. used on institutional turf and for landscape in 2004 and 2006;
- Licensed Commercial Operators used less than 500 lbs. a.i. in 2002 and 2004, and about 3,000 lbs. a.i. in 2006.

(<https://www.regulations.gov/document/EPA-HQ-OPP-2011-0745-0056>)

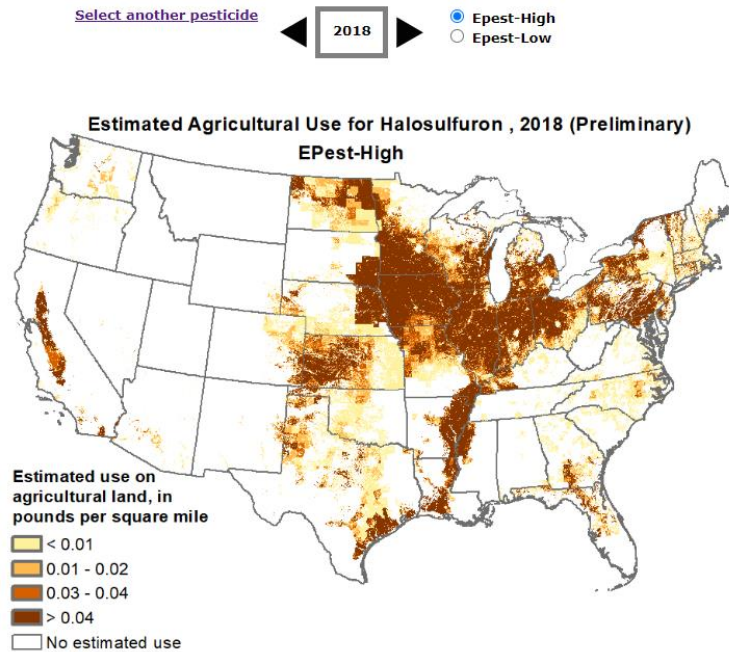


Figure 1. Estimated agricultural use nationally for halosulfuron in 2018, data sourced from USGS Pesticide National Synthesis Project.

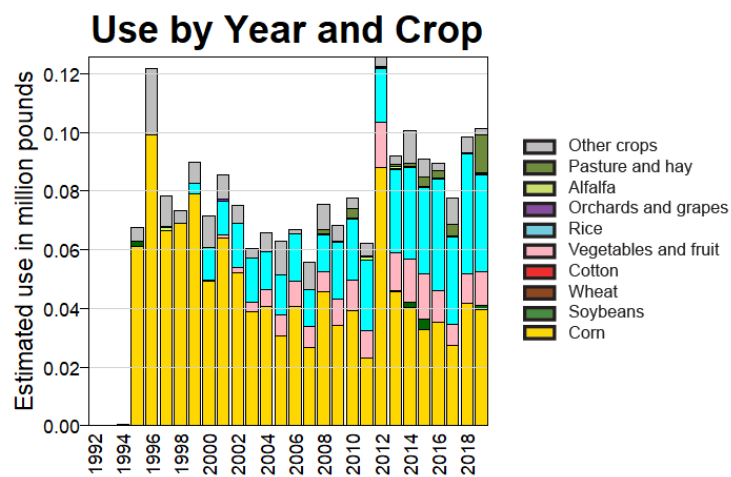


Figure 2. Estimated use by year and crop nationally for halosulfuron between 1992 and 2018, data sourced from USGS Pesticide National Synthesis Project.