VERMONT
AGENCY OF AGRICULTURE, FOOD & MARKETS

Data Determinations

For the purposes of reporting the following treatment groups include these types of pest control:

Treatment Types	Description
Animal	Moles, vole control
Aquatic	Invasive vegetation/pest control (permitted); also includes sewer root control
Biocides / Disinfectants	Industrial water cooling systems, mold remediation, and commercial and industrial disinfectants
Birds	Starlings and pigeons (permitted)
Corn, Field, & Forage	Commodity crops; corn, soybeans, small grains, and grasses
Forestry	Vegetation management and forest insect pest control
General Pest Control	Residential and commercial structural pest (rodents, insects) control
Golf Courses	Vegetation management and turf pest control (permitted)
Greenhouse / Nursery	Plant propagation and Christmas tree production
Highway & Railway	Rights-of-way vegetation management
Lawn Care & Ornamentals	Commercial and residential landscaping
Mosquito	Outdoor treatments of larvacide and adulticide (excludes residential treatments)
Produce Production	Fruits and vegetable pest control
Utilities & Wood Treatment	Rights-of-way corridor vegetation management and wood pole preservation activities in the corridor

In order to calculate usage as consistently and accurately as possible the following determinations were made:

- Chemical names of active ingredients were translated to the most known name, this included synonyms, racemic mixtures/ enantiomers.
    - ◊ *For example, 2,4-dichlorophenoxyacetic acid was reported as 2,4-D; and o/s-metolachlor mixture was reported as metolachlor.*
- All liquids were calculated at 10lbs to the gallon unless the volume weight was specified on the product label.
- The acid equivalents of an active ingredient were used when stated on the label
- Aerosols were considered as liquids -unless specified on product label
- Gels were considered solids -unless specified on product label
- Foggers were considered liquids -unless specified on product label
- Foams were considered solids -unless specified on product label
- When a single amount was listed for multiple counties the amount was divided equally between the counties listed.
- When multiple categories were listed the product was added to the first category listed
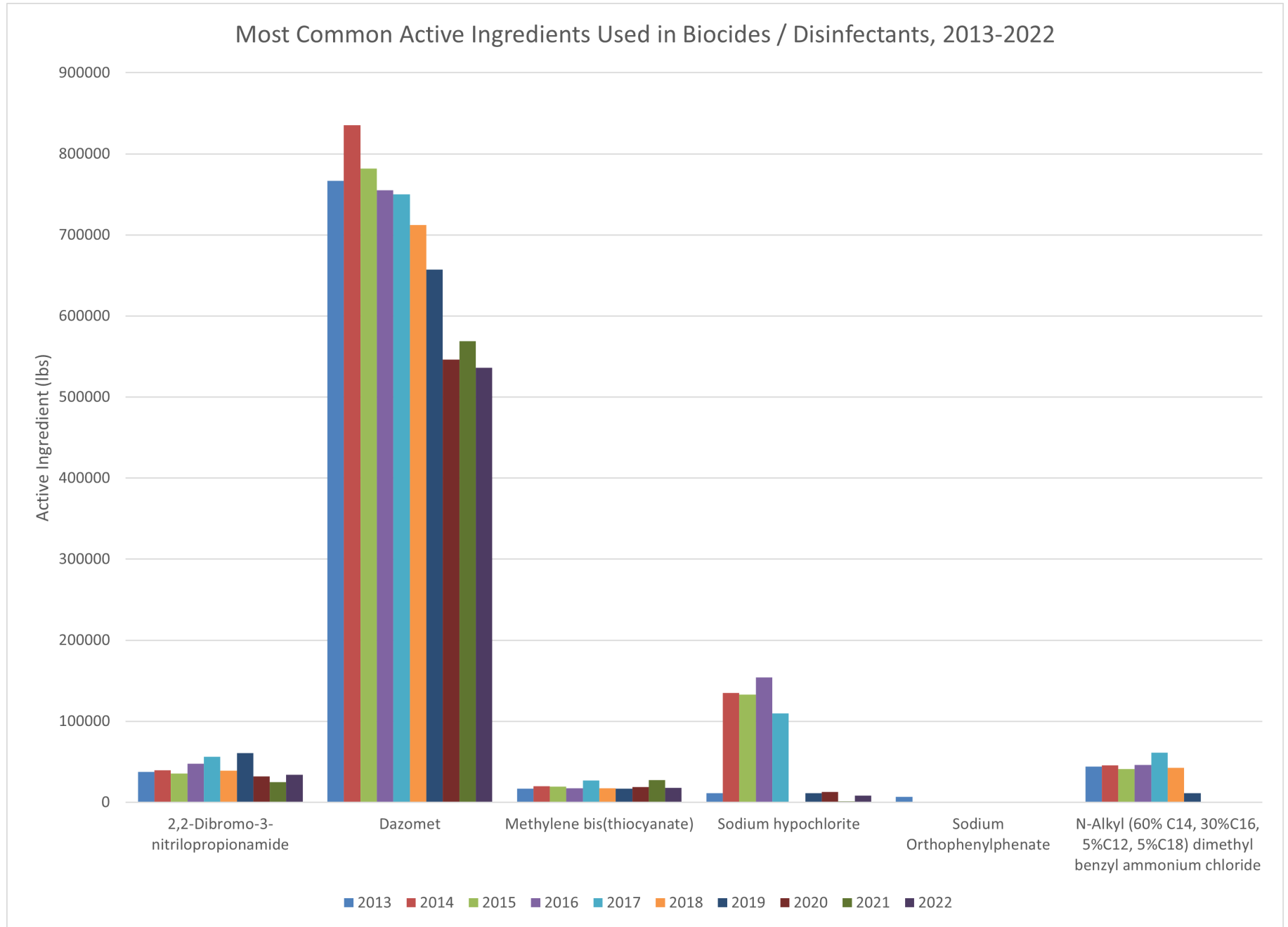
Data Limitations

The data collected is self-reported by applicators. Reporting errors have been found and corrected in usage amount, EPA number, product name and county of application.
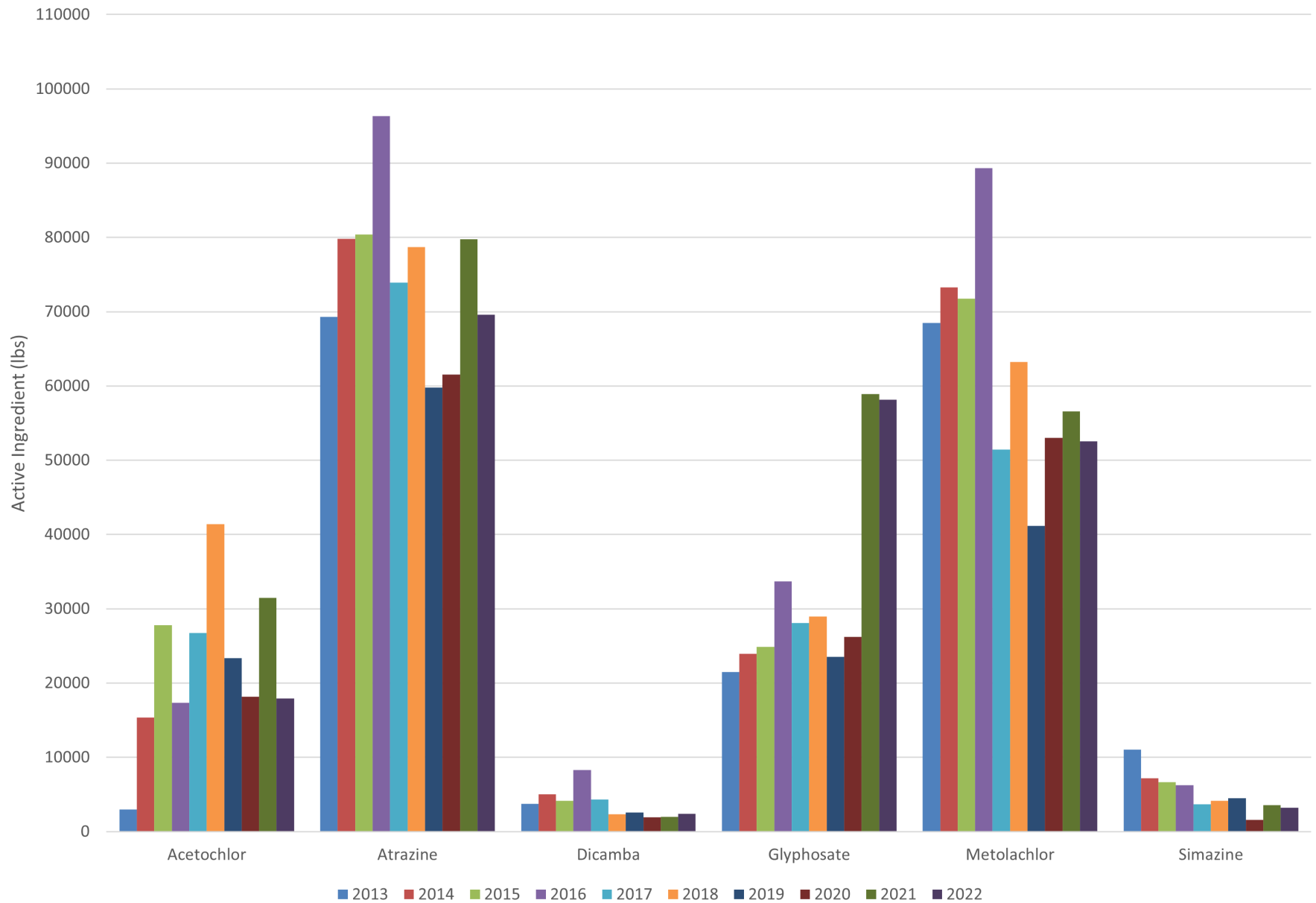
The usage data was reviewed:

- 2018-2022 = 100% [*]
- 2011, 2015-2017 = 40%
- 2012-2014 = 25%
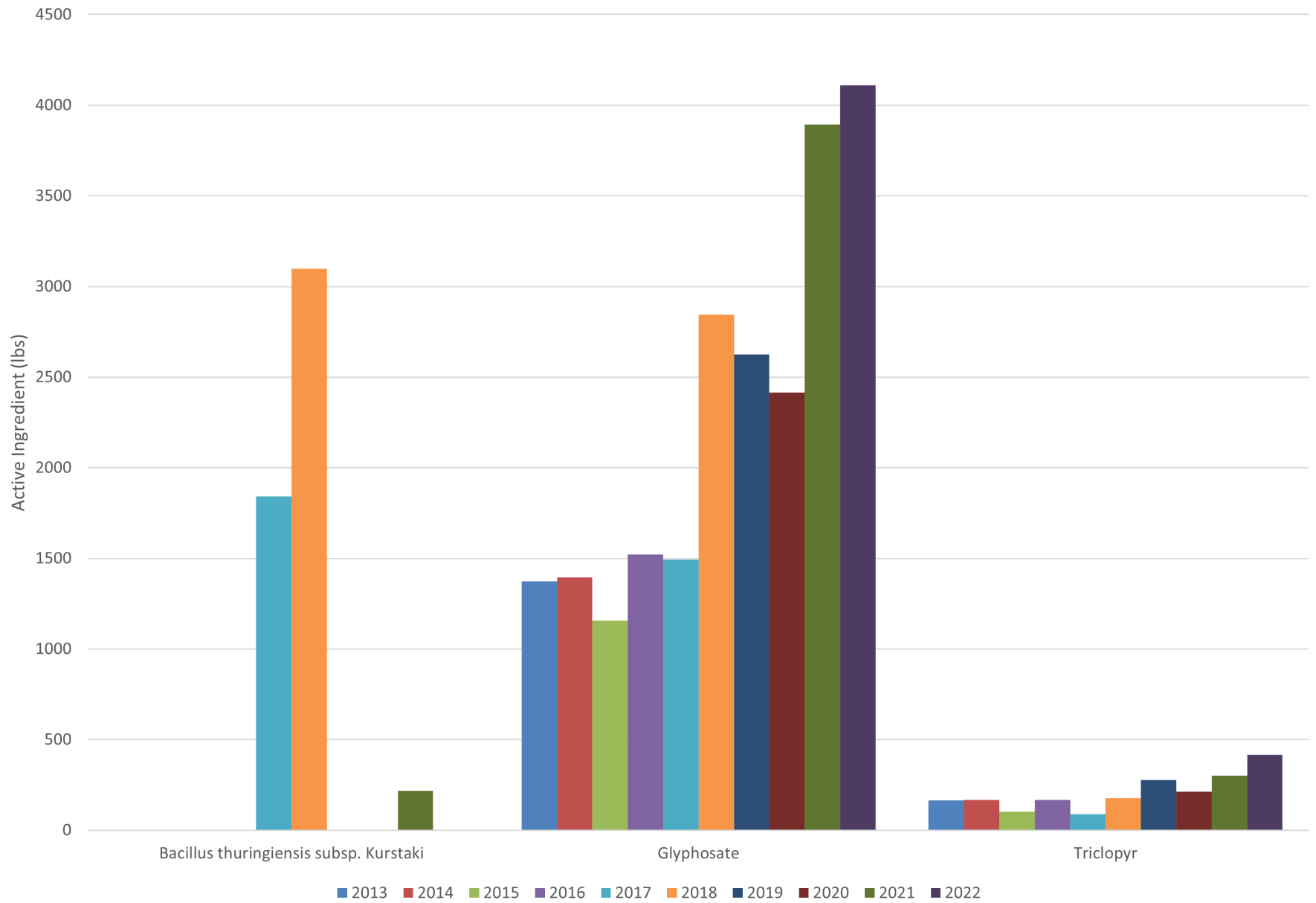- *with complete secondary review*

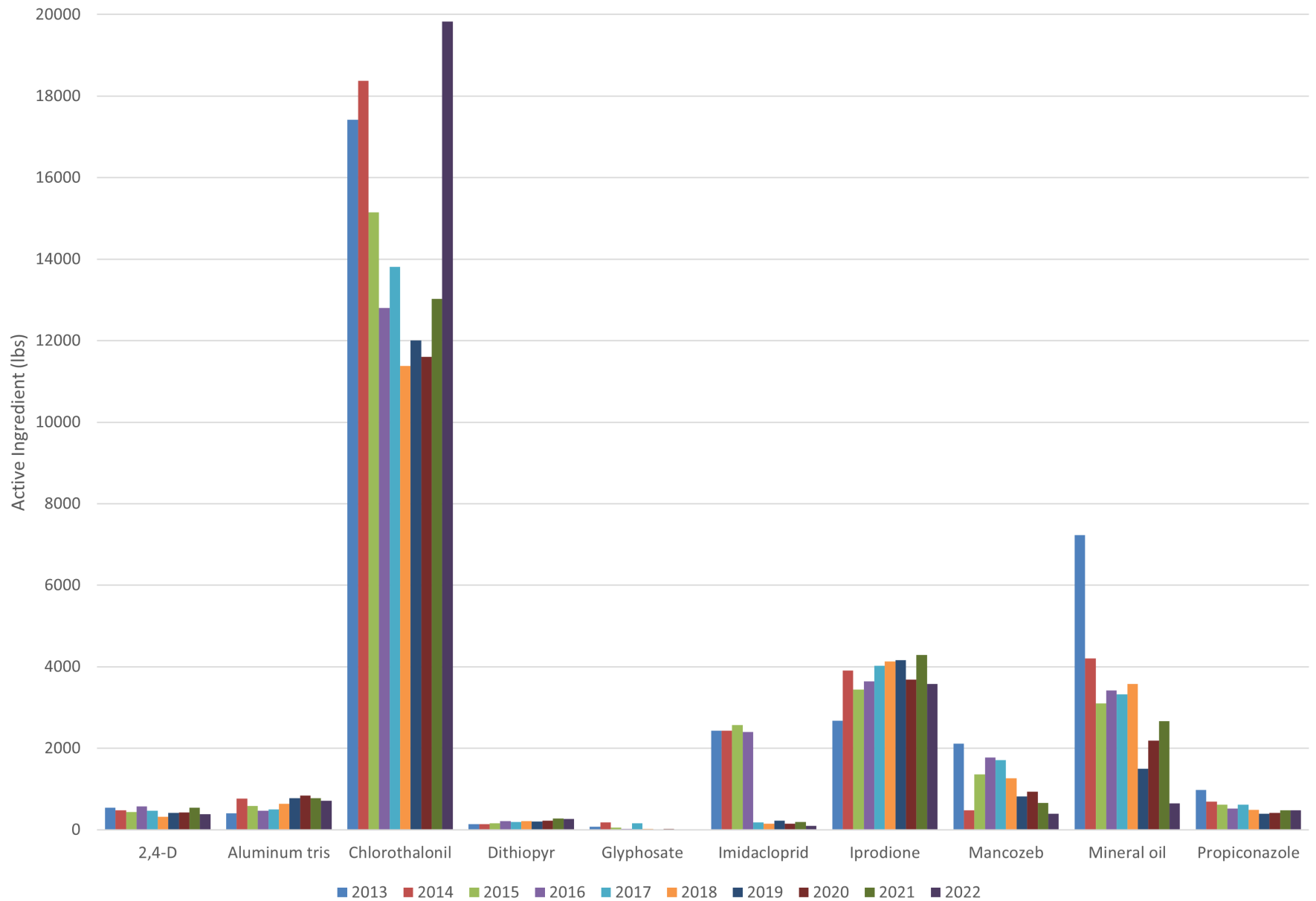**Most common active ingredients by treatment type, 2013-2022:**
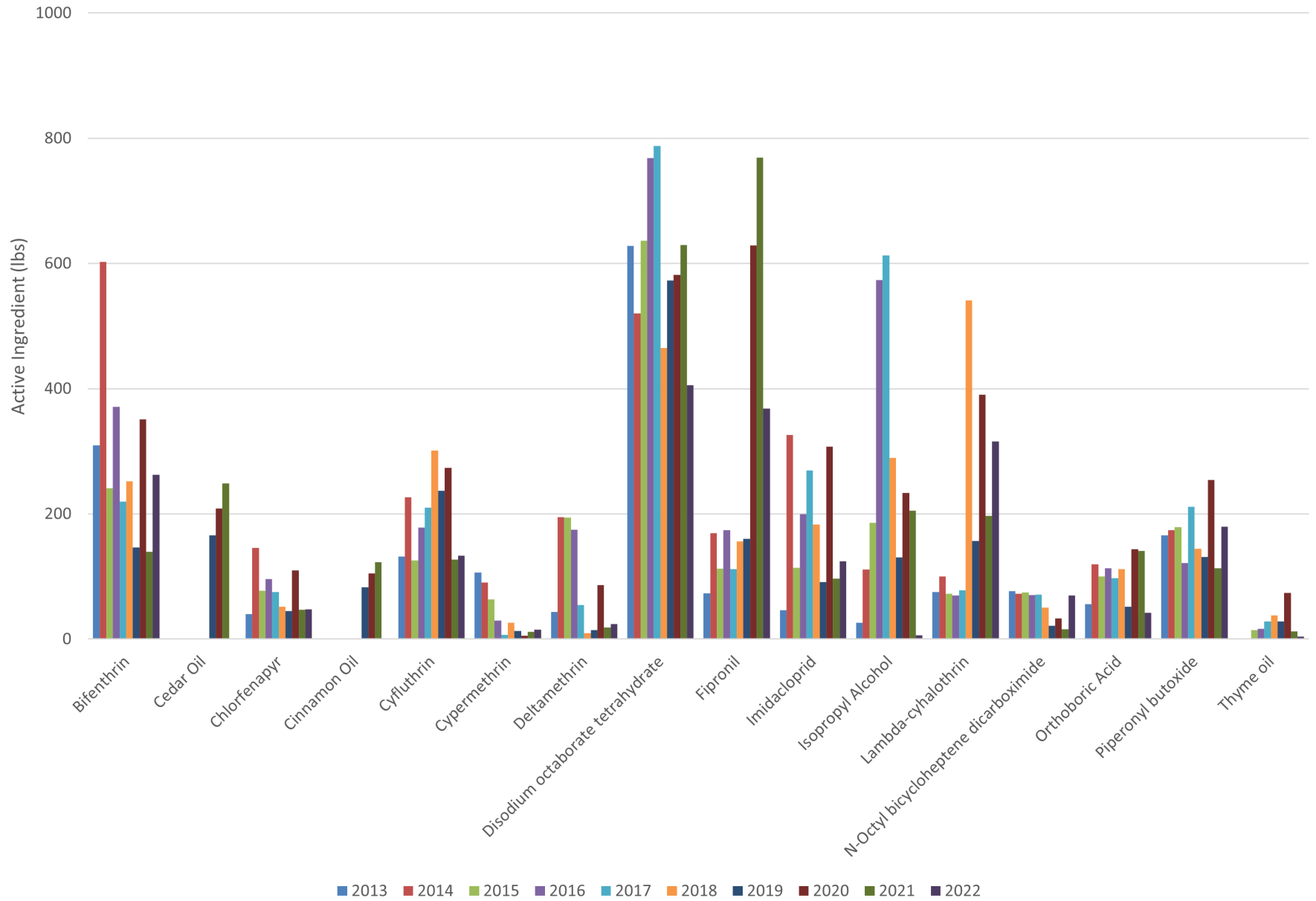

Most Common Active Ingredients Used in Biocides / Disinfectants, 2013-2022

Active Ingredient (lbs)

Legend: 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

Categories: 2,2-Dibromo-3-nitrilopropionamide; Dazomet; Methylene bis(thiocyanate); Sodium hypochlorite; Sodium Orthophenylphenate; N-Alkyl (60% C14, 30%C16, 5%C12, 5%C18) dimethyl benzyl ammonium chloride

Most Common Active Ingredients Used in Corn, Fields & Forages, 2013-2022

Chart showing Active Ingredient (lbs) on the y-axis (0 to 110000) for six active ingredients: Acetochlor, Atrazine, Dicamba, Glyphosate, Metolachlor, and Simazine, grouped by year from 2013 to 2022.

Legend: 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

Most Common Active Ingredients Used in Forestry Management, 2013-2022

Y-axis: Active Ingredient (lbs)

Categories: Bacillus thuringiensis subsp. Kurstaki, Glyphosate, Triclopyr

Legend: 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

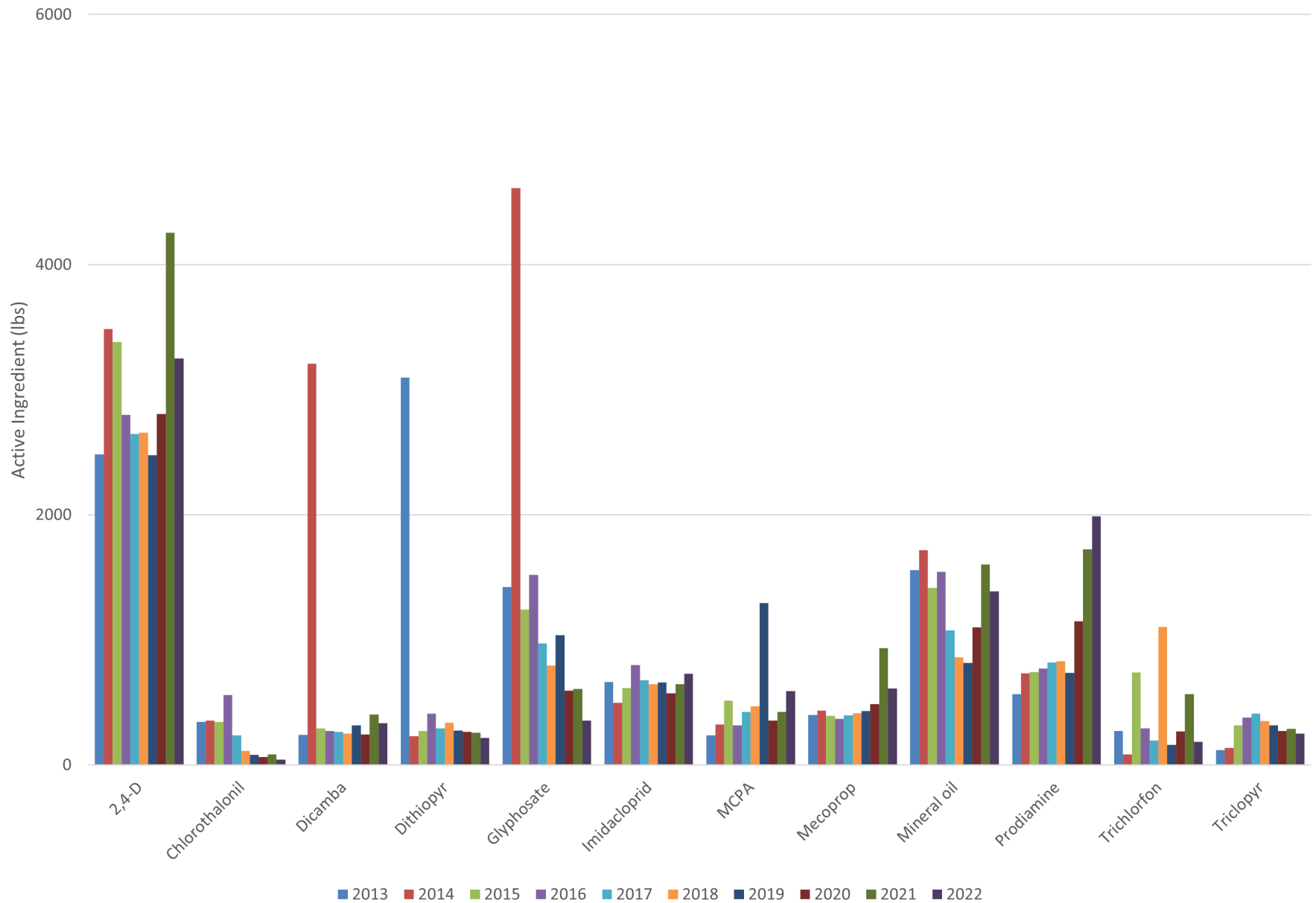Most Common Active Ingredient Used in Golf Courses, 2013-2022

Most Common Active Ingredients Used in General Pest Control, 2013-2022
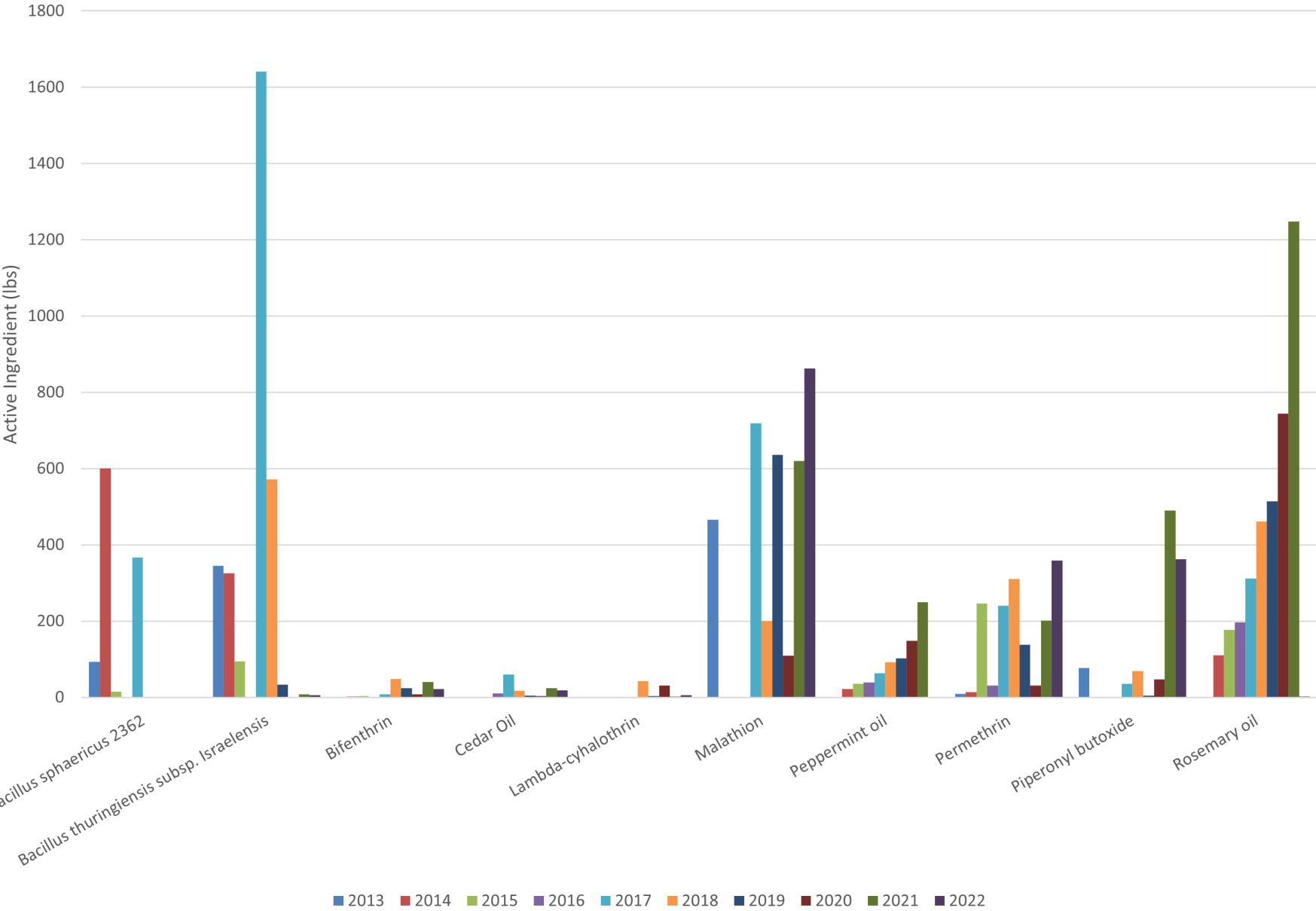
Most Common Active Ingredients Used in Highway and Railway, 2013-2022
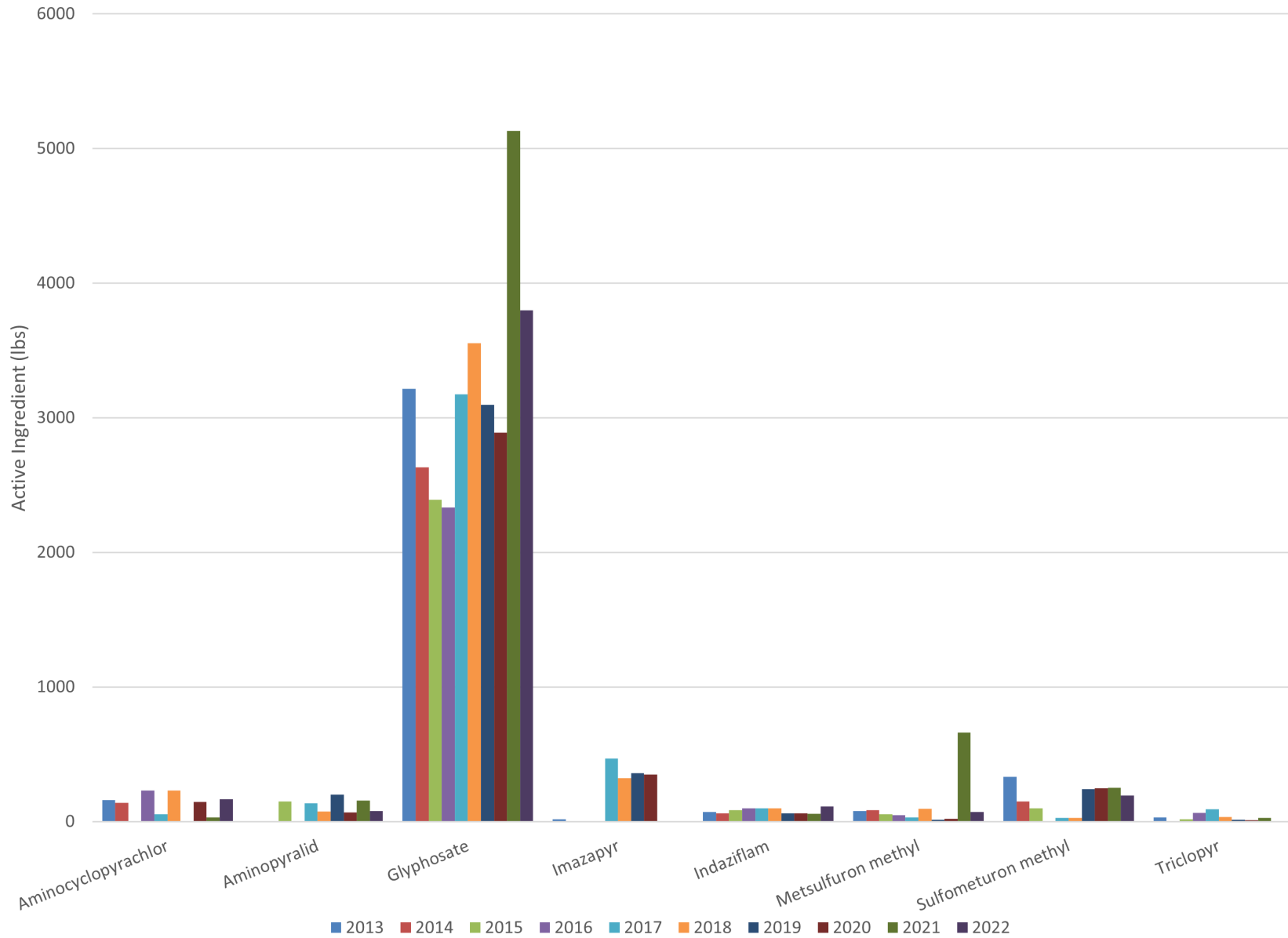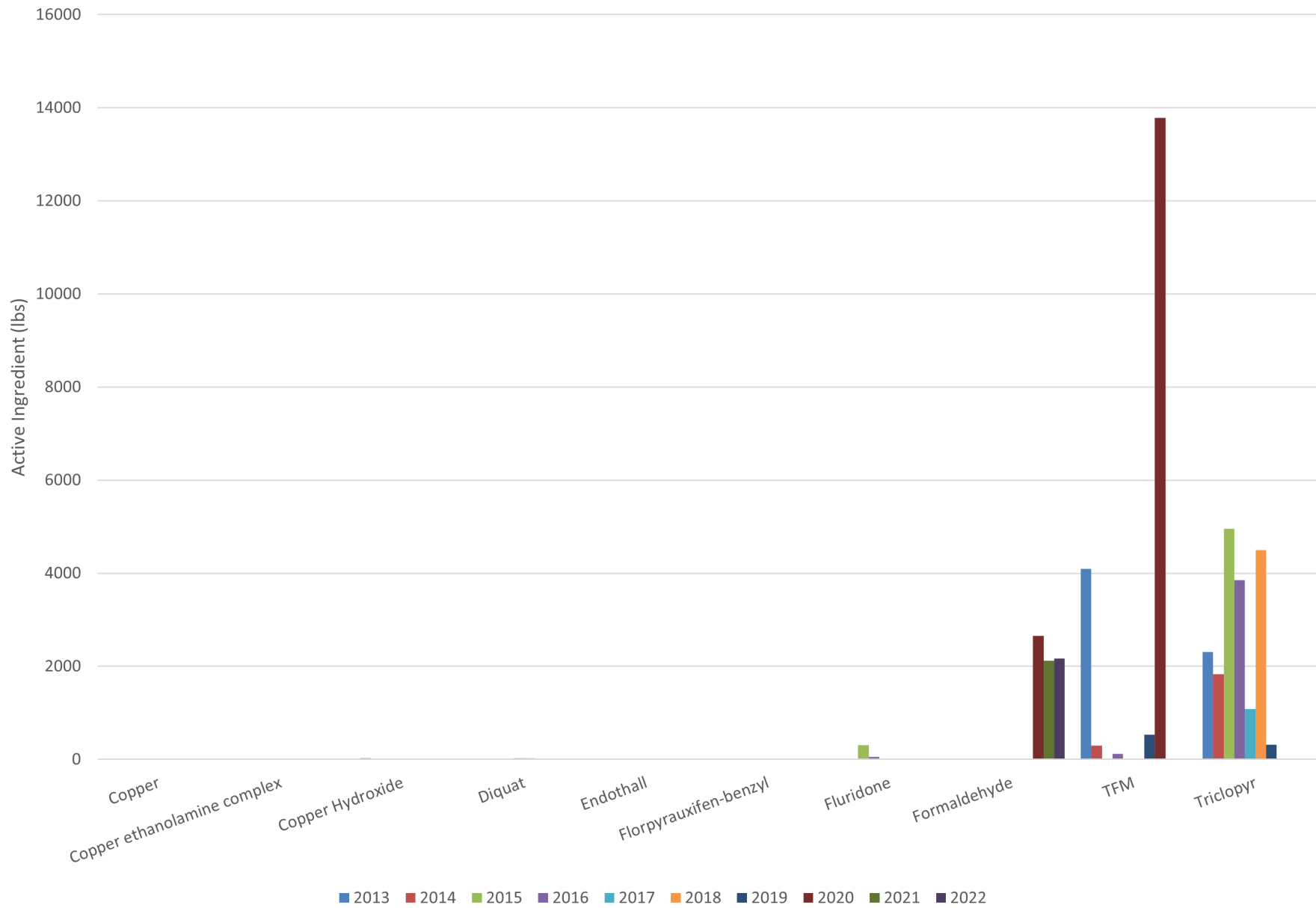
Most Common Active Ingredients Used in Lawn Care and Ornamentals, 2013-2022

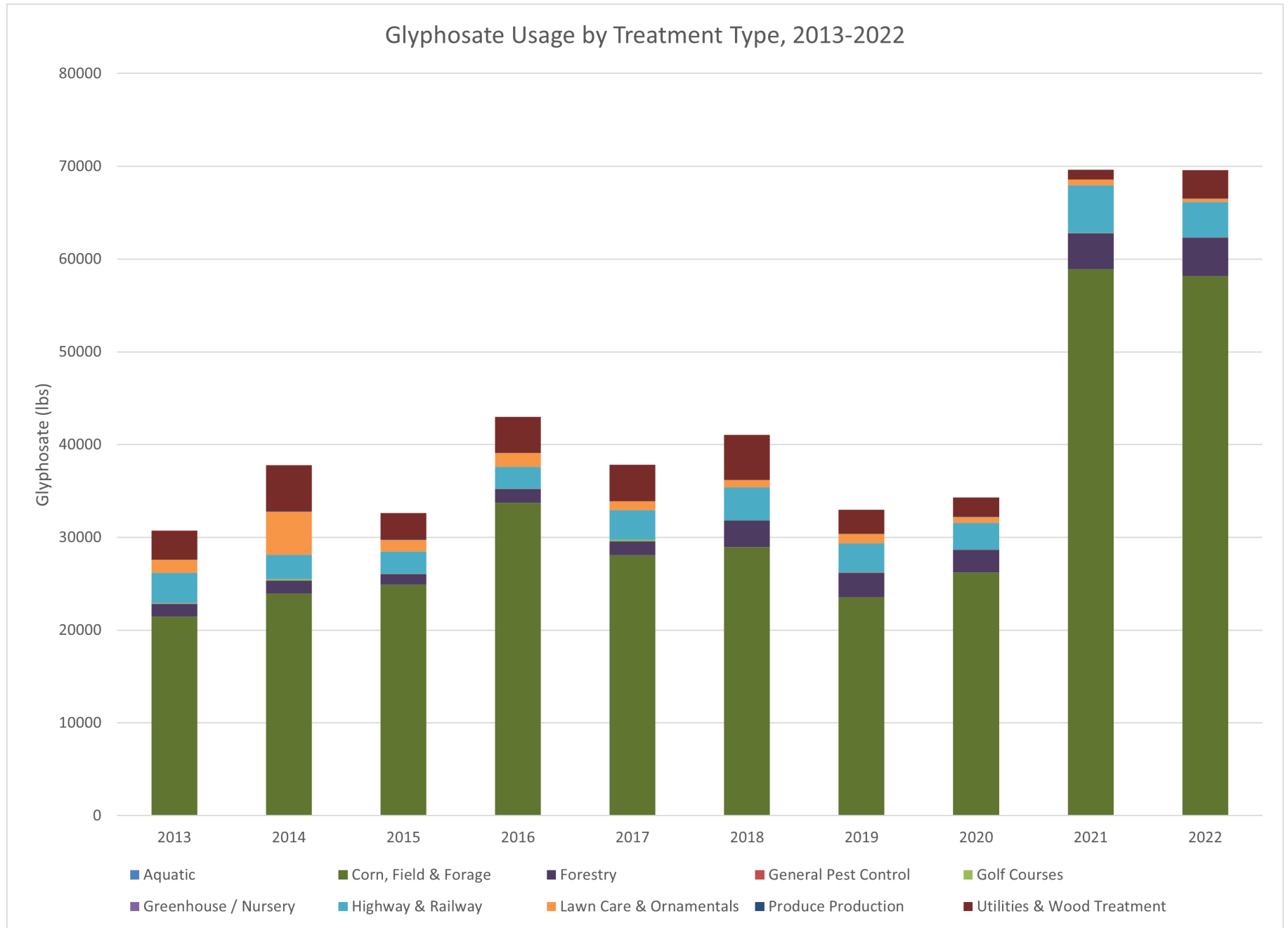# Most Common Active Ingredients Used in Mosquito Control, 2013-2022

Chart: Active Ingredient (lbs) by year (2013–2022) across active ingredients: Bacillus sphaericus 2362, Bacillus thuringiensis subsp. Israelensis, Bifenthrin, Cedar Oil, Lambda-cyhalothrin, Malathion, Peppermint oil, Permethrin, Piperonyl butoxide, Rosemary oil.

Legend: 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

Most Common Active Ingredients Used in Aquatic Control, 2013-2022

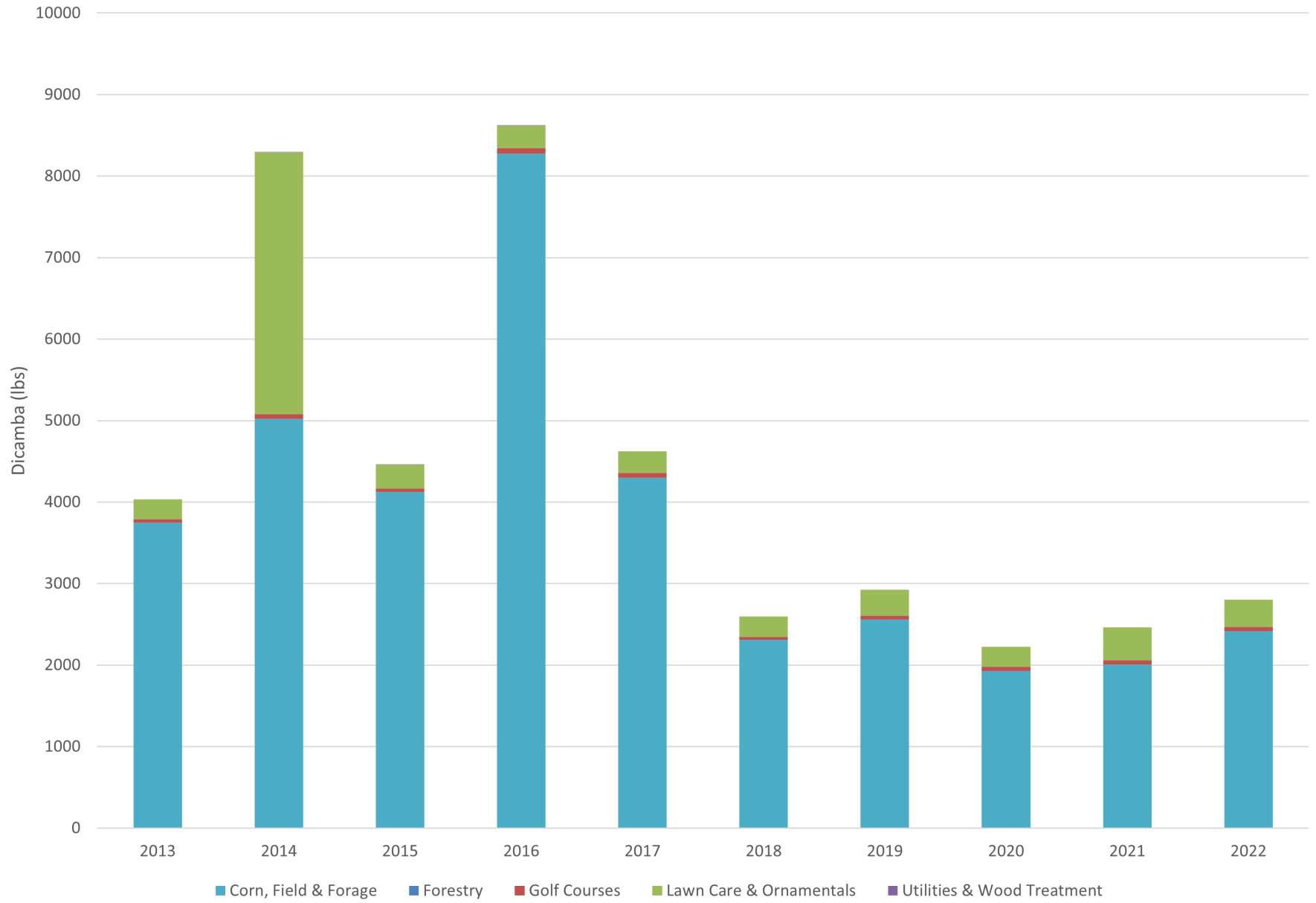*Does not include active ingredients used for sewer root control*

*Active ingredient by treatment type, 2013-2022:*



Glyphosate Usage by Treatment Type, 2013-2022

Legend:
- Aquatic
- Corn, Field & Forage
- Forestry
- General Pest Control
- Golf Courses
- Greenhouse / Nursery
- Highway & Railway
- Lawn Care & Ornamentals
- Produce Production
- Utilities & Wood Treatment

2,4-D Usage by Treatment Type, 2013-2022

Legend: Corn, Field & Forage · Forestry · Golf Courses · Lawn Care & Ornamentals · Utilities & Wood Treatment

Y-axis: 2,4-D (lbs)

Dicamba Usage by Treatment Type, 2013-2022
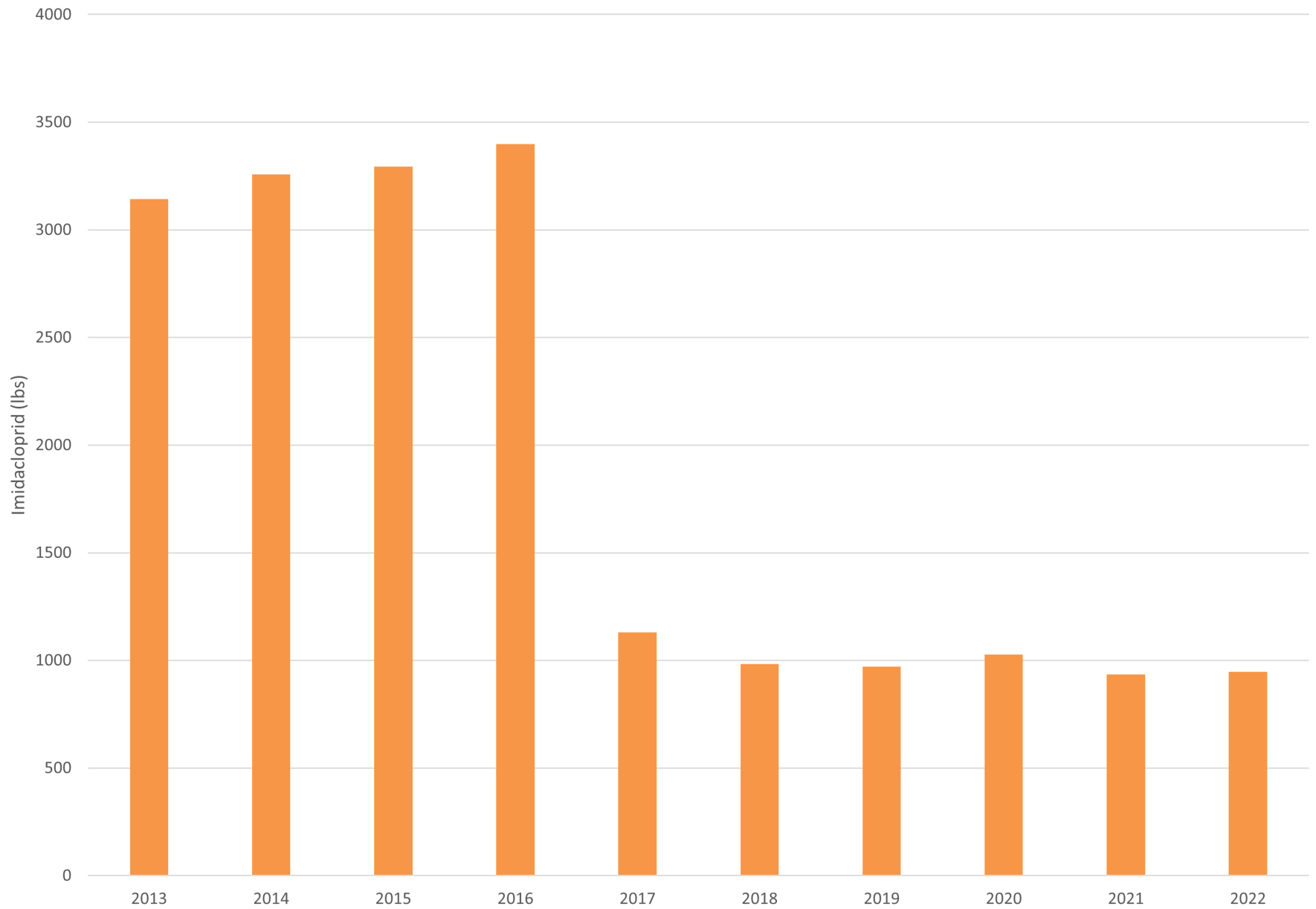
Statewide usage of active ingredient, 2013-2022:

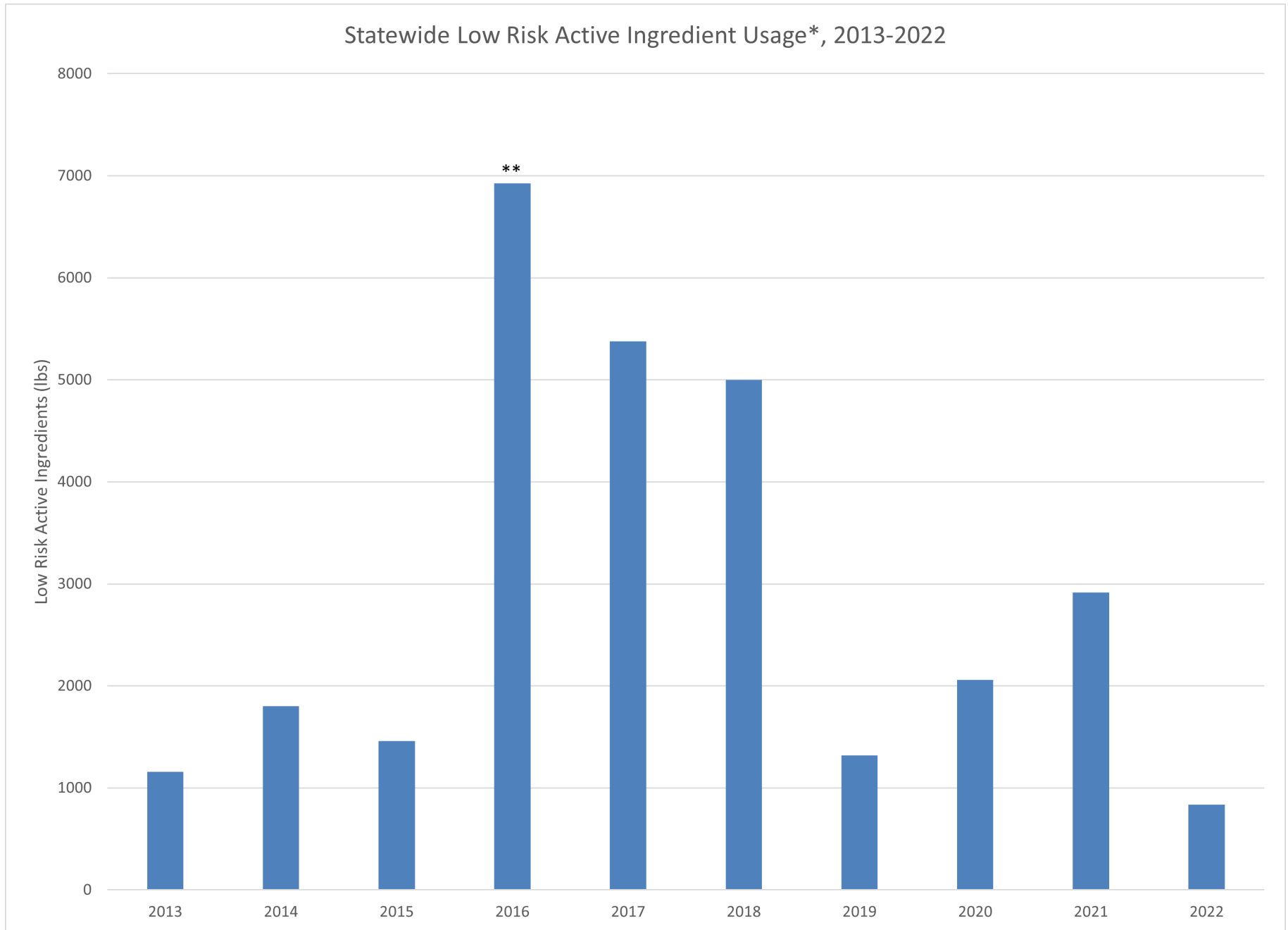Statewide Atrazine Usage, 2013-2022
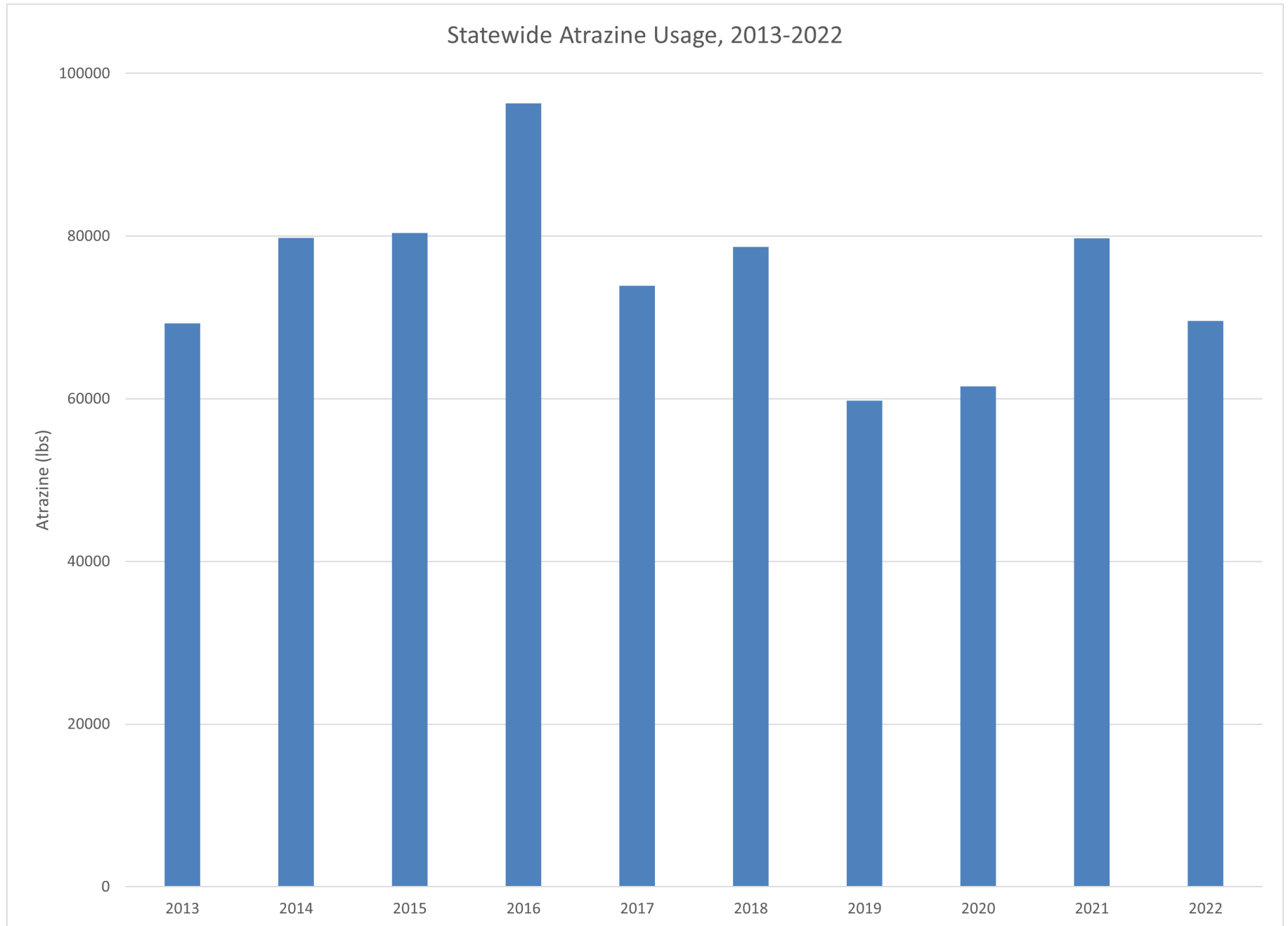
Statewide Glyphosate Usage, 2013-2022
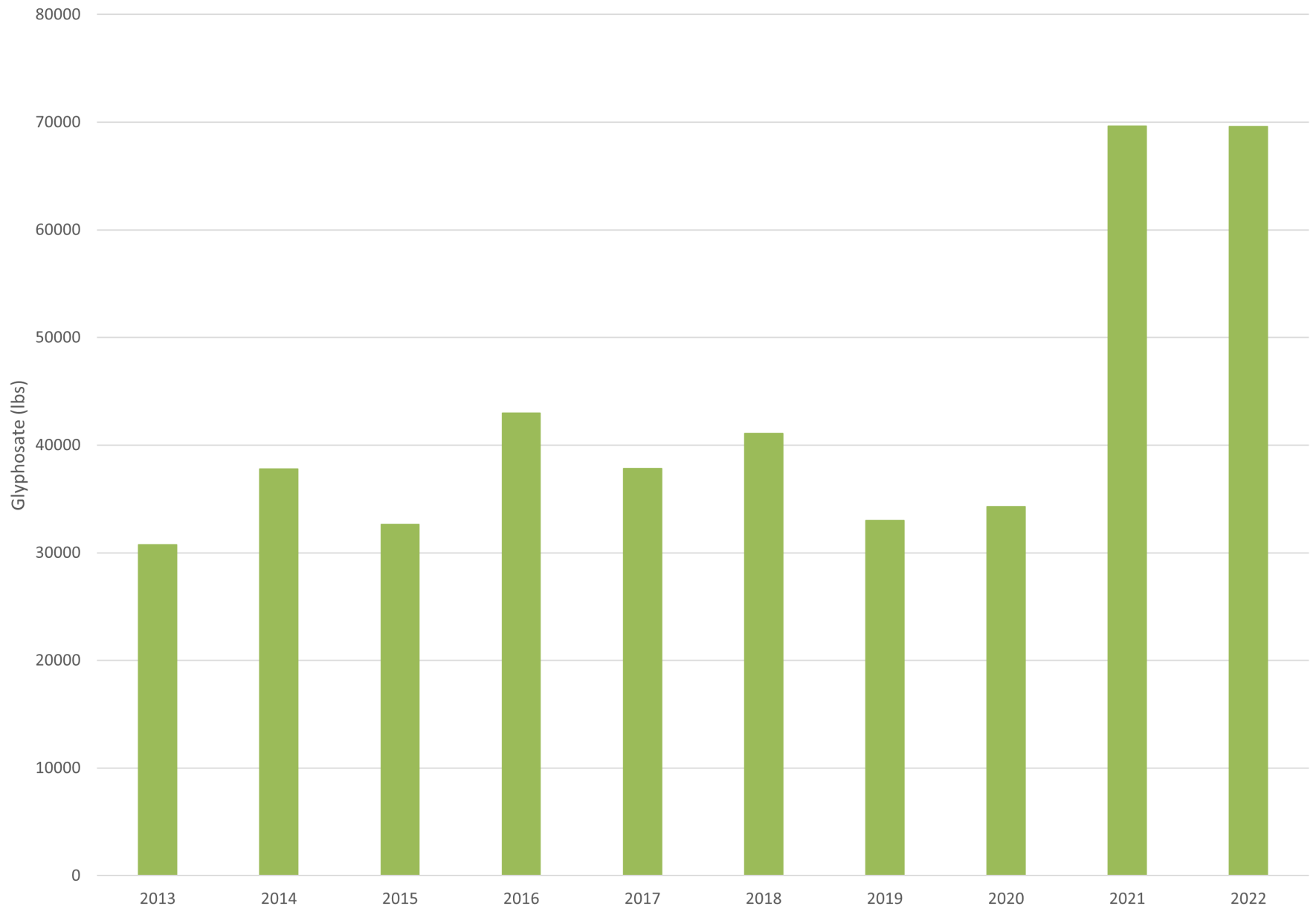
Statewide Imidacloprid Use, 2013-2022

Statewide Low Risk Active Ingredient Usage*, 2013-2022

- *Low Risk = active ingredients of minimal risk, "25B products", or those registered as biopesticides*

** The increased usage in 2016 was garlic.*