

# 2023 Vermont Seed Report



Photo by J.M.G.C. Goss

**Vermont Agency of Agriculture, Food and Markets  
Public Health & Agricultural Resource Management  
116 State Street Montpelier, VT 05620-2901**

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## Introduction

The Vermont Agency of Agriculture, Food & Markets' Seed Program is tasked with the registering and monitoring of businesses who sell seed within the state. The purpose being that consumer seed purchases from Vermont's registered distributors<sup>1</sup> meet proper germination rates, purity standards and are free from weed seed as set forth in Vermont Seed Laws (a copy can be found [here](#)) and the Vermont Seed Rule (a copy can be found [here](#)) Vermont's Seed Program gathers information regarding seed sold within the state from the following annual reporting from all distributors registered in Vermont:

- A Tonnage<sup>2</sup> Report is required to be filed no later than January 15th.
- A Treated<sup>3</sup> Seed Report is required to be filed no later than February 15th.
- A Genetically Engineered<sup>4</sup> Seed Report is required to be filed no later than February 15th.

This annual seed report is compiled to provide the public with access to the information collected through these distributor reports on the sale of seeds in the state of Vermont.

If you have any questions regarding this report or Vermont's Seed Program, please contact the Public Health and Agriculture Resource Management Division; Vermont Agency of Agriculture, Food and Markets; 116 State Street; Montpelier, VT 05620-2901, email: [agr.feedseedfert@vermont.gov](mailto:agr.feedseedfert@vermont.gov), or call (802) 828-5050.

<sup>1</sup>6 V.S.A. Chapter 35, subchapter 2, 642(b) and 644(b) "Distributor" means a person who purchases, repackages, and sells seeds.

<sup>2</sup>6 V.S.A. § 648 Inspections (c) For those seeds sold in containers of more than ten pounds, a report shall be filed annually on January 15 on forms supplied by the Secretary regarding sales during the previous calendar year, and fees based on the \$10.00 per ton rate shall accompany the report. Reporting periods are January 1-June 30 and July 1-December 31

<sup>3</sup>6 V.S.A. § 641 "Treated" means that the seed has received an application of a substance or process which substance or process is designed to reduce, control, or repel certain disease organisms, insects, or other pests from attacking such seeds or seedlings growing therefrom.

<sup>4</sup>6 V.S.A. § 641(9) "Genetically engineered (GE) seed" means seed produced using a variety of methods, as identified by the National Organic Program of the U.S. Department of Agriculture, used to modify genetically organisms, or influence their growth and development by means that are not possible under natural conditions or processes. Such methods include cell fusion, microencapsulation and macroencapsulation, and recombinant DNA technology (including gene deletion, gene doubling, introducing a foreign gene, and changing the positions of genes when achieved by recombinant DNA technology). Such methods do not include the use of traditional breeding, conjugation, fermentation, hybridization, in vitro fertilization, or tissue culture.

## Summary

### Tonnage Report

In 2023 the 116 registered seed distributors in the state of Vermont reported seed sales in containers of 10 pounds or greater amounting to 5,722 tons in 2023. For the 2022 reporting cycle there were 117 registered seed distributors and sales of 3,291.97 tons in containers of 10 pounds or greater. It may be reasonable to surmise that a portion of the increase in reported sales may be attributed to the weather events throughout the 2023 growing season. Vermont growers may have been forced to repeat their crop planting.

### Genetic Engineered, Treated and Untreated Seed Report

The Genetic Engineered (GE) Seed Reporting and the Treated and Untreated Seed Reporting is expected from all registered Seed Distributors. In the Vermont Seed Program's effort to aid Distributors with their reporting compliance these two forms were combined into a single reporting form for 2023. The new form was available in an Excel Version and a PDF version and retained the same due date of February 15<sup>th</sup>. An unfiled report is not presumed by the Vermont Seed Program to be an indication of zero sales. All efforts will be made to continue providing multiple reminders and individual compliance assistance to all Vermont's registered Seed Distributors to aid them in fulfilling their annual reporting obligations.

For 2023: 70 Seed Distributors filed required reports, one Seed Distributor filed incomplete reporting, 6 Seed Distributors filed reports under a parent entity and 39 Seed Distributors have failed to file their GE, Treated and Untreated Seed reporting. In comparison the 2022 reporting cycle represented 117 Registered Seed Distributors with 17 Seed Distributors who filed all reports, 8 who filed incomplete reports and 92 failed to file any GE, Treated and Untreated Seed reporting. The increase in reporting may be a result of combining the GE and Treated and Untreated Seed reporting forms into one, and ongoing efforts to increase communication between Vermont's Seed Program and registered seed distributors.

It should be noted, there may be seed reports that reflect redundant capture of information as seeds pass between registered distributors, each of whom must report their individual sales. Previous reports attempted to cull duplicate reporting with uncertain accuracy. Last year's reporting reverted to reporting all data as reported by each distributor for their sales. This reporting cycle distributors were asked to indicate the source of seed purchased in an attempt once more to cull duplicate reporting and solidify the actual physical seed tonnage. While many reporters failed to provide this information, where redundant reporting was detected, it was culled.

With the uptick in reporting compliance there was an increase in available data. This led to an effort to utilize reported data to estimate pounds of applied seed fungicide, insecticide and nematicide treatments' individual chemical agents. The majority of treated seed reported was indicated to have multiple treatment types applied and multiple active ingredients utilized in those treatment types.

A total of 1116.09 tons genetically engineered seed was reported for 2023 in the Corn, Soybeans and Legume Forage and Pasture crop categories. A total of 2114.07 tons of treated seed was reported in Cereal Grain, Corn, Cover Crop, Flower & Vegetable, Forage-other, Grass Forage Fodder and Hay, Legume Forage and Pasture, Oilseed, Soybean, Specialty and Turf categories. A total of 1267.20 tons of untreated seed were sold across all seed categories.

## Vermont Treated Article Seed\* Reporting

For the reporting year January 1, 2023, through December 31, 2023, complete treated seed reporting was received from 70 registered seed distributors. Data received by the Agency from these reports is summarized below.

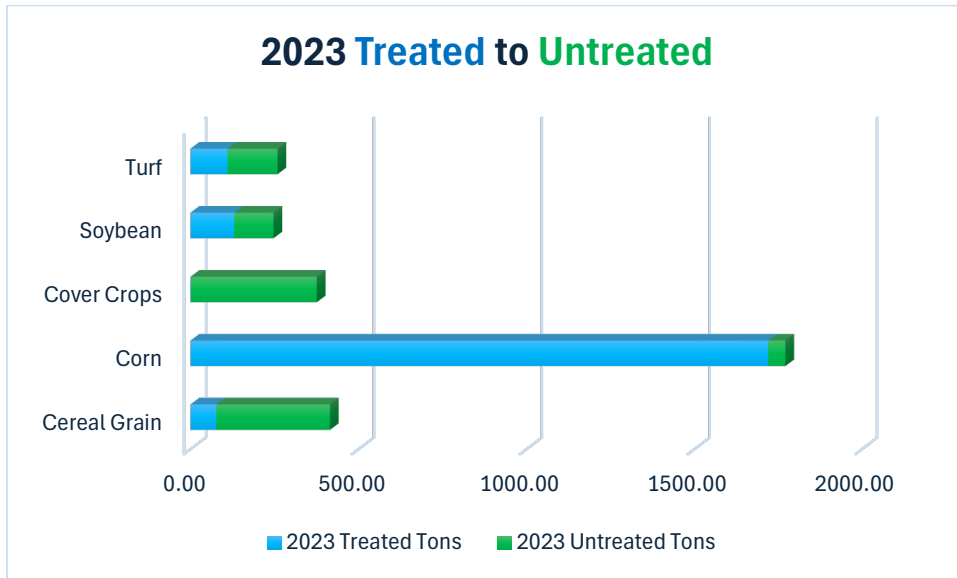
<b>Year reported: 2023</b>		
<b>Seed Category</b>	<b>Treated Tons</b>	<b>Untreated Tons</b>
<b>Cereal Grain</b>	76.52	338.33
<b>Corn</b>	1720.12	51.22
<b>Cover Crops</b>	0.65	374.96
<b>Flower &amp; Vegetable</b>	3.98	108.02
<b>Forage-Other</b>	8.55	32.29
<b>Grass Forage, Fodder and Hay</b>	2.35	26.82
<b>Hemp</b>	0	0.00
<b>Legume Forage and Pasture</b>	62	60.23
<b>Oil Seed-No Soybean</b>	0.11	1.53
<b>Soybean</b>	129.68	116.98
<b>Specialty</b>	0.20	8.03
<b>Turf</b>	109.91	148.80
<b>Totals</b>	<b>2114.07</b>	<b>1267.20</b>

<b>Seed Category*</b>	<b>Examples of crops</b>
cereal grain	millet, wheat, triticale, oats, barley, sorghum
corn	corn, all
cover crops	cover crop mixes, winter rye
flower and vegetable	vegetables mixes, potatoes
forage - not otherwise specified	forage mixes, forage sugar beet/peas etc.
grass forage, fodder, and hay	Sudan grass, Kentucky bluegrass, rye, orchard grass, timothy
hemp	hemp
legume forage and pasture	alfalfa, vetch, trefoil, clover
oil seed -no soy	rapeseed, sunflowers
soybean	soybean, all

\*Except for corn and soybean, which are reported individually, seeds were classified based on the categories found in Food and Feed Crops of the United States by G.M. Markle, J.J. Baron and B.A. Schneider.

### **Chart 1. 2023 Treated to Untreated Volumes in the Top Five Reported Seed Categories by Volume Sold**

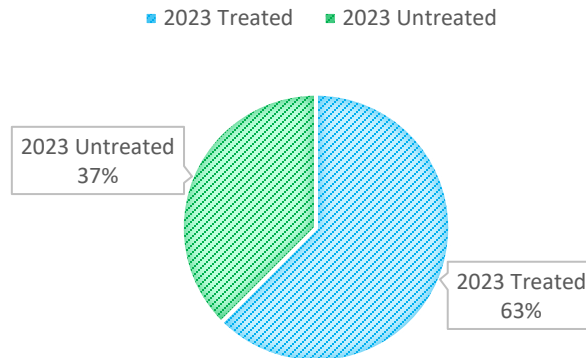
The top five reported crop types by total volume of seed sold were Corn, Cereal Grain, Cover Crop, Turf, and Soybean. The chart below breaks these categories into treated vs. untreated seeds as reported.



### **Chart 2. 2023 Treated and Untreated Seed Reported**

This chart illustrates the ratio of treated to untreated seed among all categories as reported by distributors.

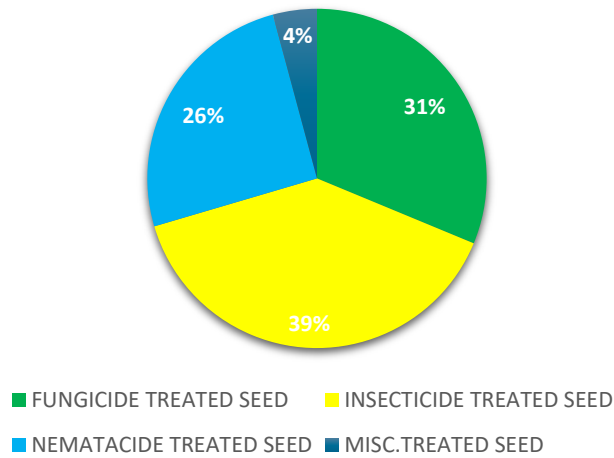
## **2023 TREATED AND UNTREATED SEED REPORTED**



### **Chart 3. Treatment Types by Ton Reported for 2023**

This chart illustrates the applied seed treatment types by percent of treated seed reported.

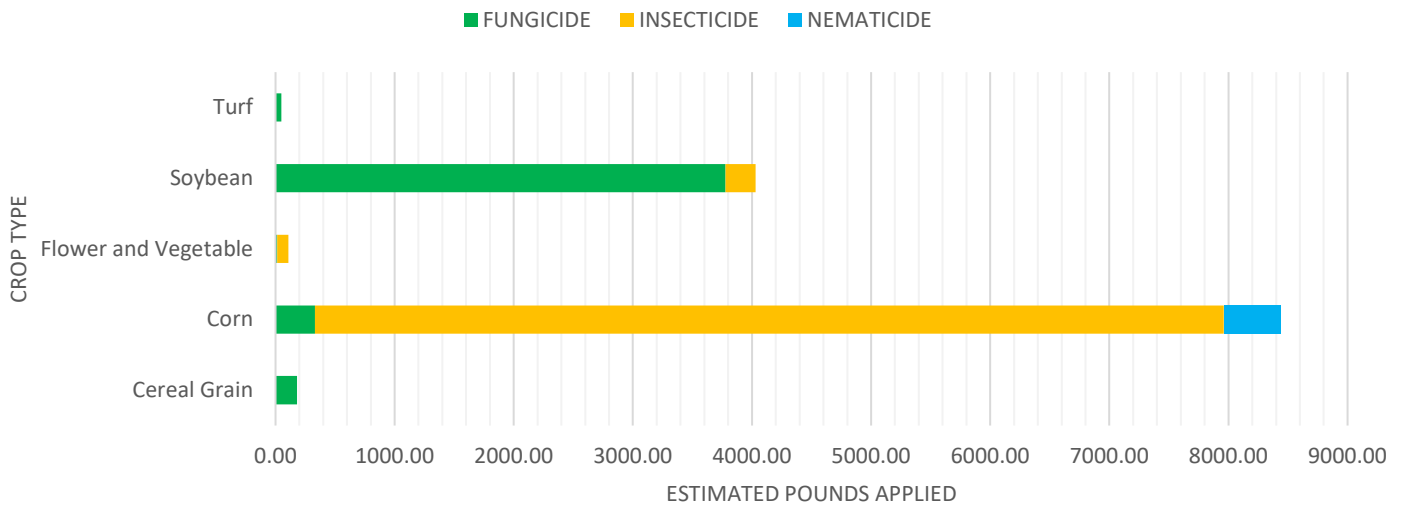
#### **2023 Treatments by Ton**



### **Chart 4. 2023 Top 5 Crops by Weight of Applied Treatments**

This chart illustrates the total pounds of applied treatments by type for the top five treated seed categories by estimated weights of treatment agent applied.

#### **2023 Top 5 Crops by Weights of Applied Treatments**

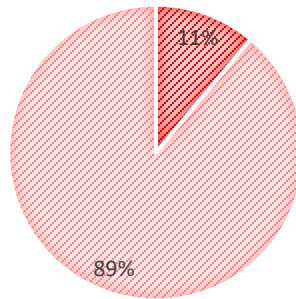


### Chart 5. 2023 Neonicotinoid to Non-neonicotinoid Insecticide Treatments

A total of **1257.160 tons** of seed reported in 2023 was indicated to have been treated with an estimated total of **7,979 pounds** of applied chemical insecticide active ingredients. Of the reported 7,979 pounds of applied insecticides: **7093.49 pounds of estimated active ingredients** reported applied were classified in the neonicotinoid family and **885.51 pounds of estimated active ingredients** reported applied were chemicals classified in the anthranilic diamide family which are non-neonicotinoid products.

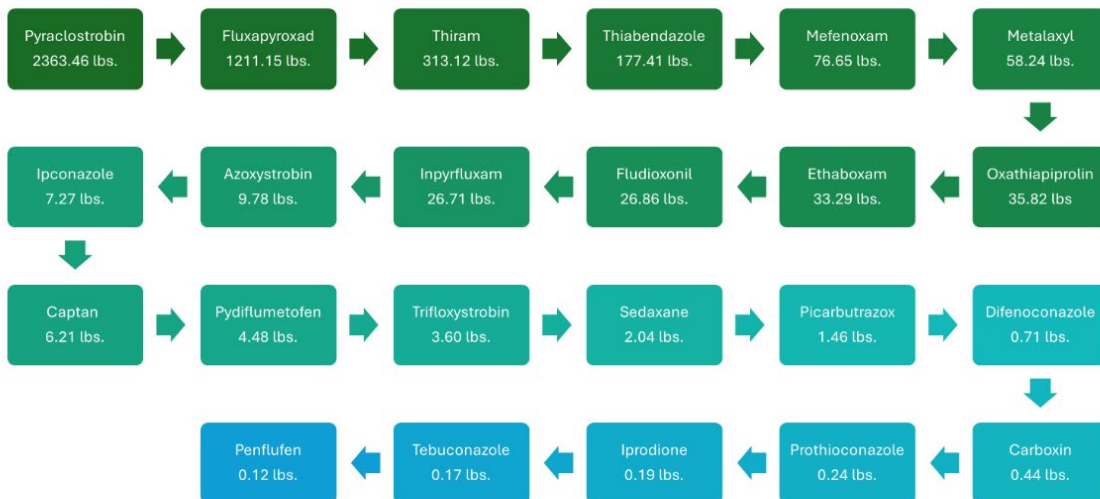
### ESTIMATES OF NEONICOTINOID TO NONNEONICOTINOID ACTIVE INGREDIENTS REPORTED IN 2023

■ Anthranilic Diamides ■ Neonicotinoids



### Table 1. Total Pounds Estimate of Applied Fungicide Active Ingredients (Chemical)

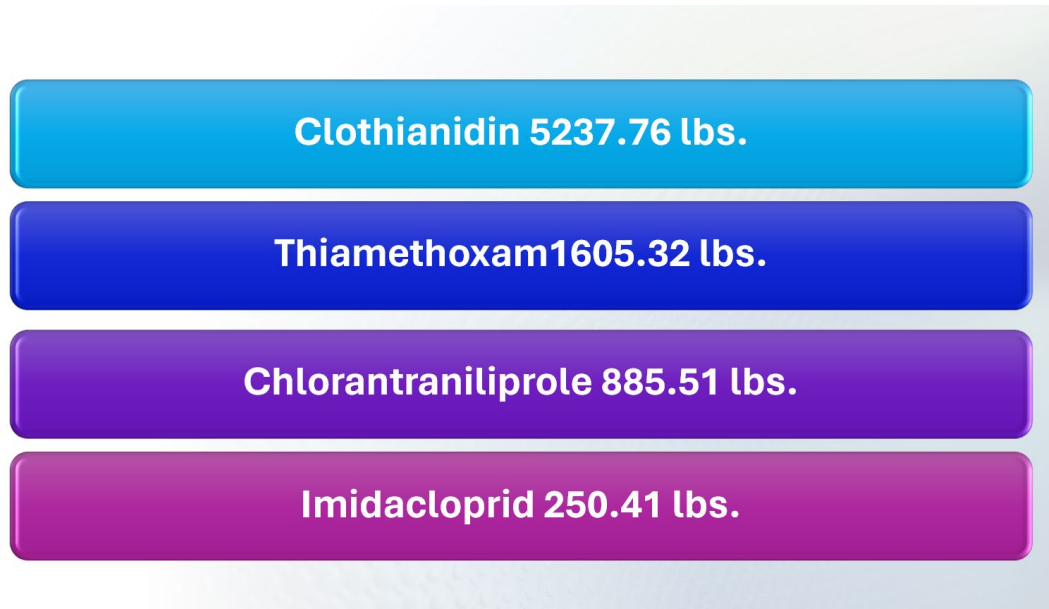
Below is a table displaying the estimated amount, in pounds, of the reported applied fungicide seed treatment. Estimates were calculated by using a representative product label to obtain the upper and lower rate for the seed crop category reported, applying those rates to the pounds of seed reported and then obtaining an average. This method generates an estimate of the total pounds of fungicide active ingredients applied to the reported seed sold in Vermont for 2023.





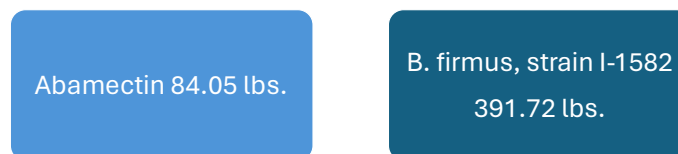
**Table 2. Total Pounds Estimate of Applied Insecticide Active Ingredients (Chemical)**

Below is a table displaying the estimated amount, in pounds, of the reported applied insecticide seed treatments. Estimates were calculated by using a representative product label to obtain the upper and lower rate for the seed crop category reported, applying those rates to the pounds of seed reported and then obtaining an average. This method was to generate an estimate of the total pounds of Insecticide active ingredients applied to the reported seed sold in Vermont for 2023.



**Table 3. Total Pounds Estimate of Applied Nematicide Active Ingredients (Chemical & Biological)**

Below is a table displaying the estimated amount, in pounds, of the reported applied nematicide seed treatments. Estimates were calculated by using a representative product label to obtain the upper and lower rate for the seed crop category reported, applying those rates to the pounds of seed reported and then obtaining an average. This method was to generate an estimate of the total pounds of nematicide active ingredients applied to the reported seed sold in Vermont for 2023.



## Vermont Genetically Engineered Seed Reporting

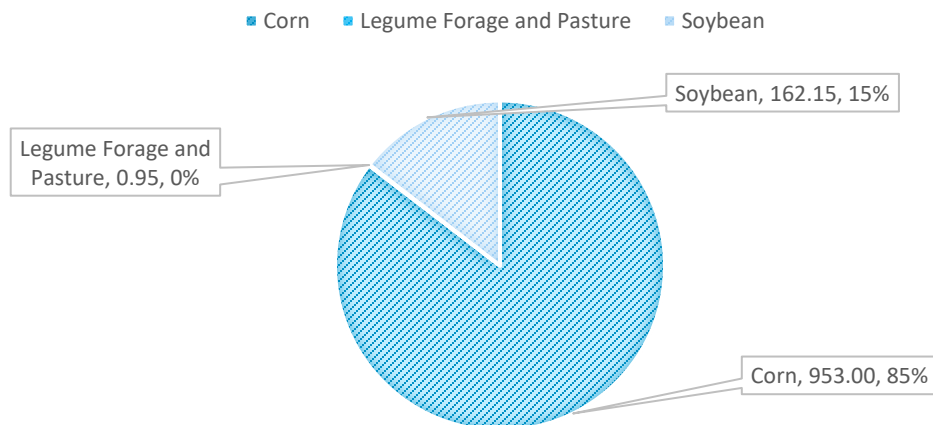
Data on 1116.09 tons of GE Seed sold in Vermont during the 2023 reporting year January 1, 2023, through December 31, 2023, by the reported crop categories is summarized below:

CROP CATEGORY	2023 GEREPORTED TONS
Cereal Grain	0.00
Corn	953.00
Cover Crops	0.00
Flower & Vegetable	0.00
Forage-Other	0.00
Grass Forage, Fodder and Hay	0.00
Hemp	0.00
Legume Forage and Pasture	0.95
Oil Seed-No Soybean	0.00
Soybean	162.15
Specialty	0.00
Turf	0.00
<b>Total GE Tons Reported for 2023</b>	<b>1116.09</b>

### Chart 6. 2023 GE Tons Reported by Crop

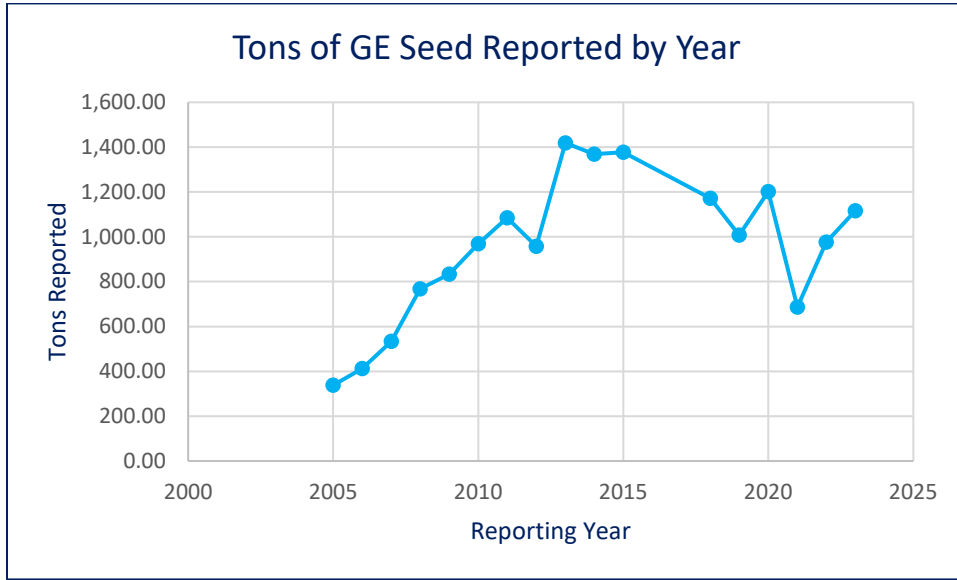
This chart provides a visual display of the 2023 GE Seed Reporting broken into percents for crops reported.

## 2023 GE TONS REPORTED BY CROP



### Chart 7. Tons of GE Seed Reported by Year

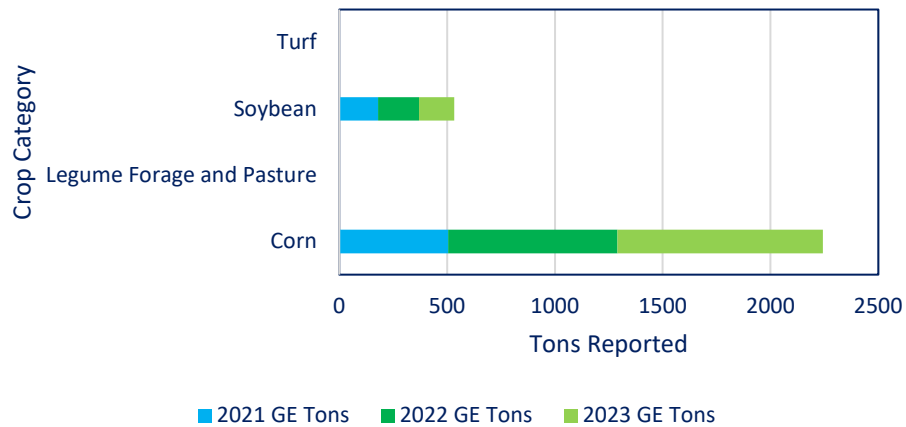
This chart displays a comparison of the amount of GE Seed in tons as reported to the agency from 2004 through 2023.



### Chart 8. 3-Year Comparison of Reported GE Tons by Crop Category

This chart provides a 3-year comparison of reported GE seed tonnage by crop category.

3-Year Comparison of Reported GE Tons by Crop Category



## 2023 Registered Seed Distributors

Business Name	City	State
802 Seeds LLC	Manchester Center	VT
Aerogrow International Inc	Boulder	CO
AgReliant Genetics LLC dba AgriGold Hybrids	Westfield	IN
Albert Lea Seed House	Albert Lea	MN
American Meadows Inc	Shelburne	VT
America's Alfalfa	Nampa	ID
Amturf Enterprises LLC	Jefferson	OR
Antler King Trophy Products Inc co Kalmbach Feeds	Upper Sandusky	OH
Applewood Seed Co	Arvada	CO
Artistic Gardens/le Jardin Du Gourmet	St Johnsbury Ctr	VT
Atlantic Golf and Turf	Turners Falls	MA
Axis Seeds LLC	Adel	IA
Back to the Roots Inc	Oakland	CA
Baker Creek Heirloom Seed Co	Mansfield	MO
Barenbrug USA Inc	Tangent	OR
Barrett Stinmetz CSS Consulting LLC	Broomfield	CO
Bayer CropScience LP	St. Louis	MO
Bentley Seeds Inc	Cambridge	NY
Bonide Products LLC	Oriskany	NY
Botanical Interests Inc	Broomfield	CO
Bradley Caldwell Inc	Hazleton	PA
Browning Seed INC	Plainview	TX
Burpee Garden Products	Warminster	PA
Buzzy Inc	Pottsville	PA
Carrier Organic Farm	Washington	VT
Channel Bio Llc	St Louis	MO
Charles (The) C Hart Seed Co	Wethersfield	CT
Corteva Agriscience MCS LLC	Johnston	IA
DLF Pickseed USA, Inc DBA DLF Pickseed	Halsey	OR
DLF USA INC dba LaCrosse Seed	LaCrosse	WI
Domain Outdoor LLC	Hudson	WI
Eagle Eye Marketing Inc	Santa Barbara	CA
Earthbeat Seeds	Worcester	VT
Eden Brothers dba Vista Horticultural Group	Arden	NC
Enroot Products LLC	Cromwell	CT
Farmer Bailey INC	Derby	VT
FBN INPUTS LLC	San Carlos	CA
Fedco Seeds Inc	Waterville	ME
Flowering Lawn INC dba Flawn Seed Kits	Eau Claire	WI
Forage Genetics International	Nampa	ID
Gardens Alive! Inc	Lewisburg	OH
Gates Hill Farm LLC	Franklin	VT
GCI Turf Services INC	Reidsville	NC
Green Garden Products	Norton	MA

<b>Business Name</b>	<b>City</b>	<b>State</b>
Growmark Inc	Bloomington	IL
GTR Seeds LLC	Independence	OR
GTX TURF FARMS LP	Charlotte	NC
Gualdi LLC dba Fortuna	Grand Junction	CO
Harris Seeds	Rochester	NY
Heartland Farms DBA Solstice Seeds	Hartland	VT
Helena Agri Enterprises LLC dba Helena Chemical Co	Collierville	TN
High Mowing Organic Seeds	Wolcott	VT
Hudson Valley Seed Library LLC dba Hudson Valley Seed Company	Accord	NY
International Hemp LLC	Lakeworth	FL
Johnny's Selected Seeds	Winslow	ME
Jonathan Green Inc	Farmingdale	NJ
JPPA Inc dba Park Seed	Hodges	SC
Kent Nutrition Group Inc	Muscatine	IA
Lake Valley Seed Co	Boulder	CO
Lakeview Organic Grain Llc	Penn Yan	NY
Lawes Agricultural Service Inc	Brandon	VT
Lawrence D Oliver Seed Co Inc	Milton	VT
Lebanon Seaboard Corp	Lebanon	PA
Lesco Inc	Cleveland	OH
Loveland Products Inc	Greeley	CO
M&G B.V. c/o Jan Molenaar	Lisserbroek	
MERCHSOURCE LLC	IRVINE	CA
Miracle-Gro Lawn Products Inc	Marysville	OH
Modern Sprout	Chicago	IL
Monsanto Co	St Louis	MO
Moonshot Growth LLC dba Hamama	West Sacramento	CA
More Wildlife	Barre	VT
Mountain View Seeds Ltd	Salem	OR
Nativearth Seed LLC	North Clarendon	VT
New England Seed Co dba NE Seed	East Hartford	CT
North Country Organics	Bradford	VT
Northern Nurseries	Windsor Locks	CT
Olin Schumacher	East Middlebury	VT
Ollie's Bargain Outlet	Springfield	VT
Pennington Seed Inc/Missouri Division	Greenfield	MO
Pioneer Hi-Bred International Inc	Tipton	IN
Premier Horticulture Inc	Quakertown	PA
Ragan & Massey LLC	Ponchatoula	LA
Revere Seed LLC	Memphis	TN
Rhino Seed & Landscape Supply Co	Wayland	MI
Rohrer Seeds & Supplies	Lancaster	PA
Rose Agri-Seed INC dba Pure Seed	Canby	OR
ROUNDSTONE NATIVE SEED LLC	UPTON	KS
S&W Seed Company	New Deal	TX

<b>Business Name</b>	<b>City</b>	<b>State</b>
Scotts Company	Marysville	OH
Secret Laboratory LLC	Waterbury Center	VT
Seeds for the World dba Vermont Bean	Randolph	WI
Seedway Inc	Hall	NY
Semican International Inc	Princeville	QC
Seminis Vegetable Seeds Inc	Oxnard	CA
Seven Leaf Genetics	North Hyde Park	VT
Skyline Encap Holdings LLC	Green Bay	WI
Superseeds INC dba Pinetree Garden Seeds	New Gloucester	ME
Sureseed LLC	Dayton	OR
Swiss Farms Products Inc	Las Vegas	NV
Syngenta Seeds LLC-Field Crops-NAFTA	Research Triangle	NC
Taliesin Farm LLC	Middletown Springs	VT
TARGET SPECIALTY PRODUCTS LLC	SANTA FE SPRINGS	CA
Tesoro dba Big Mike's Genetics	Franklin	WI
The Page Seed Co	Greene	NY
This Land Inc	Boulder	CO
TotalGreen Holland Inc	Wilmington	DE
Vermont Wetland Plant Supply Llc	Orwell	VT
Vindara Inc	Orlando	FL
Walters Seed Company LLC	Holland	MI
WHC Farms LLC dba Whitetail Hill	Cherokee	AL
Whitetail Institute of Na Inc	Pintala	AL
Wildgame Innovations Inc	Baton Rouge	LA
Winfield Solutions Llc	St Paul	MN
W-L Research	Nampa	ID
Worldwise Inc	Novato	CA



Photo by J.M.G.C. Goss