

# New Hanover County Schools

## Pesticide Product Report

Generated by Evan Folds of Be Agriculture after a meeting with New Hanover County Schools Superintendent Charles Foust and Operations Director Eddie Anderson on 2/7/2024.

New Hanover County Schools Maintenance Department webpage + IPM Safety Data Sheets:  
<https://www.nhcs.net/divisions/operations/maintenance-operations>

Health Effects of 40 Commonly Used Toxic Pesticides in Schools:  
<https://www.beyondpesticides.org/assets/media/documents/schools/publications/40SchoolPesticides.pdf>

## Athletic Fields

### Basagran T&O Herbicide

- **Chemical(s)**
  - Sodium bentazon 44%
- **Company**
  - BASF (Mfg. Number: 59011636)
- **Description**
  - Offers post-emergent control of tough broad-leaf weeds, yellow nutsedge, annual sedges and more. It can also provide weed control in ornamentals.
- **Resources**
  - Health & Environmental Effects
    - Kidney/Liver Damage: **Yes (8)**
    - Sensitizer/ Irritant: **Yes (8, 4)**
    - Birth/Developmental: **Yes (8)**
    - Detected in Groundwater: **Yes (37)**

### Celsius WG Herbicide

- **Chemical(s)**
  - Dicamba 57.4%, Iodosulfuron-methyl-sodium 1.9%, Thiencazuron-methyl 8.7%
- **Company**
  - Envu (Formerly Bayer) (Mfg. Number: 79714858)
- **Description**
  - Postemergent foliar-applied herbicide containing three active ingredients that provide a broad spectrum of weed control.

- **Resources**
  - Dicamba Fact Sheet [HERE](#)
    - “Developmental and reproductive toxin”
  - Dicamba Health & Environmental Effects
    - Cancer: Suggestive (**110**, **182**)
    - Reproductive Effects: **Yes (6)**
    - Neurotoxicity: **Yes (6)**
    - Kidney/Liver Damage: **Yes (4)**
    - Sensitizer/ Irritant: **Yes (4)**
    - Birth/Developmental: **Yes (11)**
    - Detected in Groundwater: **Yes (6)**
    - Potential Leacher: **Yes (7)**
    - Toxic to Birds: **Yes (20, 40)**
    - Toxic to Fish/Aquatic Organisms: **Yes (6)**
  - Thien carbazono-methyl Health & Environmental Effects
    - Kidney/Liver Damage: **Yes (39)**

## Certainty Herbicide

- **Chemical(s)**
  - Sulfosulfuron (75%)
- **Company**
  - Bayer (Monsanto)
- **Description**
  - Certainty Herbicide is a selective herbicide for control of annual and perennial grass and broadleaf weeds in highly managed turf. The active ingredient is both selective and systemic and can be readily absorbed through foliage and roots of the treated plant and can travel through the entire plant system. Sulfosulfuron’s mode of action involves interfering with the acetolactate synthase enzyme in targeted plants, which leads to essential amino acids being blocked from developing, which quickly slows cell division and total plant growth.
- **Resources**
  - <https://pubmed.ncbi.nlm.nih.gov/15135210/>
    - “Sulfosulfuron is a low-use rate sulfonylurea herbicide. A review of the toxicity database for sulfosulfuron indicates that the molecule has a low order of acute toxicity. It is not genotoxic and is not a reproductive, developmental, or nervous system toxicant. There were no indications of endocrine disruption in any study performed with the molecule. The only findings considered to be an adverse effect in mammalian laboratory animals following prolonged subchronic or chronic exposure to sulfosulfuron were isolated to the urinary tract.”

## Change Up Selective Herbicide

- **Chemical(s)**
  - Dimethylamine Salt of 2-Methyl-4-Chlorophenoxyacetic Acid 51.05%, 1-Methyleptyl Ester of Fluroxypyr:[(4-amino-3-5-dichloro-6-fluoro-2pyridinyl)oxy]acetic Acid, 1-methylheptyl ester 6%, Dicamba (3,6-Dichloro-o-Anisic Acid) 4.17%
- **Company**
  - Nufarm
- **Description**
  - Effective against more than 200 broadleaf weeds and most cool and warm season turf that blends the power of MCPA, Fluroxypyr, and Dicamba to create a formula which quickly strikes out weeds.
- **Resources**
  - Dicamba Health & Environmental Effects
    - Dicamba Fact Sheet [HERE](#)
      - “Developmental and reproductive toxin”
    - Dicamba Health & Environmental Effects
      - Cancer: Suggestive (110, 182)
      - Reproductive Effects: Yes (6)
      - Neurotoxicity: Yes (6)
      - Kidney/Liver Damage: Yes (4)
      - Sensitizer/ Irritant: Yes (4)
      - Birth/Developmental: Yes (11)
      - Detected in Groundwater: Yes (6)
      - Potential Leacher: Yes (7)
      - Toxic to Birds: Yes (20, 40)
      - Toxic to Fish/Aquatic Organisms: Yes (6)
  - MCPA Health & Environmental Effects
    - Reproductive Effects: Yes (4)
    - Neurotoxicity: Yes (8)
    - Kidney/Liver Damage: Yes (4)
    - Sensitizer/ Irritant: Yes (8)
    - Detected in Groundwater: Yes (27)
    - Potential Leacher: Yes (4)
    - Toxic to Birds: Yes (8)
    - Toxic to Bees: Yes (20)
  - Fluroxypyr Health & Environmental Effects
    - Kidney/Liver Damage: Yes (39)
    - Sensitizer/ Irritant: Yes (39)
    - Toxic to Fish/Aquatic Organisms: Yes (39)

## Defendor Herbicide

- **Chemical(s)**
  - Florasulam 4.84%
- **Company**
  - Dow AgroSciences
- **Description**
  - A specialty post-emergent herbicide that works to provide control over annual and perennial broadleaf weeds during the early season.
- **Resources**
  - Health & Environmental Effects
    - Endocrine Disruption: Possible (8, 114)
    - Kidney/Liver Damage: Likely (8, 114)
    - Sensitizer/ Irritant: Yes (8, 115, 116)
    - Detected in Groundwater: Likely (8, 117, 118)
    - Potential Leacher: Yes (8, 116)
    - Toxic to Birds: Possible (116)
    - Toxic to Fish/Aquatic Organisms: Yes (8, 116)
    - Toxic to Bees: Possible (43, 116)

## Dimension 2EW Herbicide

- **Chemical(s)**
  - Dithiopyr 24%
- **Company**
  - Dow AgroSciences
- **Description**
  - A specialty selective pre-emergent herbicide formulation that provides powerful control of grasses and broadleaf weeds in turf, over the top of field and container-grown landscape and nursery ornamentals without harm.
- **Resources**
  - Health & Environmental Effects
    - Endocrine Disruption: Yes (46)
    - Detected in Groundwater: Yes (55)
    - Toxic to Fish/Aquatic Organisms: Yes (46)
    - Toxic to Bees: Yes (56)

## Lesco Stonewall 4L Herbicide

- **Chemical(s)**
  - Proflaminate - 40.8%
- **Company**
  - LESCO
- **Description**

- Pre-Emergent Herbicide is a liquid flowable herbicide that effectively controls grasses and broadleaf weeds.
- **Resources**
  - Health & Environmental Effects
    - Cancer: **Yes (8)**
    - Endocrine Disruption: Suggestive Evidence (**8, 112**)
    - Reproductive Effects: Possible (**113**)
    - Neurotoxicity: **Yes (8)**
    - Birth/Developmental: Possible (**113**)

## Manor Selective Herbicide

- **Chemical(s)**
  - Metsulfuron 60%
- **Company**
  - Nufarm
- **Description**
  - A formulation of Metsulfuron Methyl - 60% that is highly selective and is effective against post-emergent perennial and annual weedy grasses like Foxtail, Bahiagrass, Ryegrass, and broadleaf weeds like Dollarweed and Clover. Manor Herbicide is for use in turfgrass.
- **Resources**
  - Health & Environmental Effects
    - *7 Endocrine Disruption—A Major Mechanism of Pesticides Toxicity*
      - “The effects of 13 pesticides (2-methyl-4-chlorophenoxyacetic acid, terbuthylazine, iodosulfuron-methyl-sodium, mesosulfuron-methyl, **metsulfuron-methyl**, chlormequat chloride, bitertanol, propiconazole, prothioconazole, mancozeb and its metabolite ethylene thiourea, cypermethrin, tau-fluvalinate, and malathion (currently banned in Denmark) used in Denmark on the function of thyroid hormone and AhR in cell culture were investigated. The data suggested that these pesticides can interfere with thyroid hormone signaling and AhR function in vitro and might have the potential to cause endocrine disruption (Ghisari et al., 2015).”

## ProScape Acelepryn Insecticide

- **Chemical(s)**
  - Acelepryn - .067%
- **Company**
  - Syngenta
- **Description**

- Provides season-long protection against crabgrass and grubs. One Spring application provides pre-emergent and early post-emergent control of crabgrass, as well as season-long control of other grassy weeds.
- **Resources**
  - Health & Environmental Effects
    - Endocrine Disruption: Possible (143, 145)
    - Kidney/Liver Damage: Yes (25, 146, 150)
    - Detected in Groundwater: Yes (43, 148)
    - Potential Leacher: Yes (149, 150)
    - Toxic to Birds: Possible (150)
    - Toxic to Fish/Aquatic Organisms: Yes (39, 150)
    - Toxic to Bees: Yes (144, 147)

## Roundup Pro Concentrate Herbicide

- **Chemical(s)**
  - Glyphosate-isopropylammonium 50.2%
- **Company**
  - Bayer Crop Sciences
- **Description**
  - Contains glyphosate, a post-emergence, systemic herbicide, formulated as a water-soluble liquid containing surfactant.
- **Resources**
  - Glyphosate Chemical Fact Sheet [HERE](#)
    - **Health Effects:** Eye and skin irritation, associated with non-Hodgkin Lymphoma, and spontaneous abortions. Other ingredients in formulated products are linked to developmental abnormalities, decreased sperm count, abnormal sperms and cell death of embryonic, placental and umbilical cord cells.
    - **Environmental Effects:** Weed resistance due to use of GM fields, water contamination, soil quality degrade on, toxic to aquatic organisms.
  - Health & Environmental Effects
    - Cancer: Yes (3, 6, 70)
    - Endocrine Disruption: Yes (7)
    - Reproductive Effects: Yes (13, 8)
    - Neurotoxicity: Yes (74)
    - Kidney/Liver Damage: Yes (7)
    - Sensitizer/ Irritant: Yes (8)
    - Birth/Developmental: Yes (75)
    - Detected in Groundwater: Yes (78)
    - Toxic to Birds: Yes (73)
    - Toxic to Fish/Aquatic Organisms: Yes (4)
    - Toxic to Bees: Yes (76, 77)

## Sapphire Herbicide

- **Chemical(s)**
  - Penoxsulam 3.68%
- **Company**
  - CORTEVA AGRISCIENCE
- **Description**
  - Specialty herbicide slows down and controls the transition of perennial ryegrass and broadleaf weeds from warm-season grasses during the spring.
- **Resources**
  - Penoxsulam Health & Environmental Effects
    - Cancer: **Yes (8)**
    - Kidney/Liver Damage: **Yes (8)**

## TopChoice Insecticide

- **Chemical**
  - Fipronil (00.0143%)
- **Company**
  - Bayer
- **Description**
  - Fipronil is a broad-spectrum insecticide used as a bait and causes neural excitation and convulsions in insects, resulting in death. Toxic to fish, aquatic invertebrates and other non target organisms such as bees.
- **Resources**
  - Health & Environmental Effects
    - Cancer: Possible (**10**)
    - Endocrine Disruption: **Yes (36)**
    - Reproductive Effects: **Yes (7)**
    - Neurotoxicity: **Yes (7)**
    - Kidney/Liver Damage: **Yes (7)**
    - Sensitizer/ Irritant: **Yes (7)**
    - Toxic to Birds: **Yes (7, 27)**
    - Toxic to Fish/Aquatic Organisms: **Yes (7, 27)**
    - Toxic to Bees: **Yes (7, 27)**
  - <https://www.beyondpesticides.org/assets/media/documents/pesticides/factsheets/Fipronil.pdf>
  - <https://www.beyondpesticides.org/resources/pesticide-gateway?pesticideid=34>

## Tower Herbicide

- **Chemical**
  - Dimethenamid-P - 63.9%
- **Company**

- BASF
- **Description**
  - A pre-emergent herbicide that provides broad-spectrum control of numerous annual grassy weeds, sedges, and small-seeded broadleaf weeds, including doveweed and goosegrass.
- **Resources**
  - Health & Environmental Effects
    - Minimal information

## Triple Crown T&O Insecticide

- **Chemical**
  - Bifenthrin 7.87%, Imidacloprid 13.83%, Zeta-Cypermethrin 2.7%
- **Company**
  - FMC
- **Description**
  - The FMC Triple Crown Turf and Ornamental Insecticide has a 3 in 1 unique feature that helps in eliminating turf pests. It's an amazing product that contains a combination of bifenthrin, zeta-cypermethrin and imidacloprid which makes it more powerful and release multiple modes of action. It has a proven fast acting knockdown feature and effectively kills pests from both above and below ground.
- **Resources**
  - Bifenthrin Health & Environmental Effects
    - Cancer: Possible (8, 10)
    - Endocrine Disruption: Yes (36)
    - Neurotoxicity: Yes (7)
    - Birth/Developmental: Yes (11)
    - Toxic to Fish/Aquatic Organisms: Yes (8)
    - Toxic to Bees: Yes (8, 19)
  - Cypermethrin Health & Environmental Effects
    - Cancer: Possible (10)
    - Endocrine Disruption: Yes (36)
    - Reproductive Effects: Yes (13)
    - Neurotoxicity: Yes (4)
    - Kidney/Liver Damage: Yes (4)
    - Sensitizer/ Irritant: Yes (6)
    - Birth/Developmental: Yes (6)
    - Toxic to Fish/Aquatic Organisms: Yes (8)
    - Toxic to Bees: Yes (8)
  - Imidacloprid Fact Sheet [HERE](#)
  - Imidacloprid Health & Environmental Effects
    - Cancer: Possible (153, 181)
    - Endocrine Disruption: Likely (151, 152)



- Reproductive Effects: **Yes** (6, 151, 152)
- Neurotoxicity: Possible (154)
- Kidney/Liver Damage: Possible (155, 156)
- Birth/Developmental: Likely (154)
- Potential Leacher: **Yes** (6)
- Toxic to Birds: **Yes** (4)
- Toxic to Fish/Aquatic Organisms: **Yes** (4)
- Toxic to Bees: **Yes** (4)

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## School Grounds

### Only companies

School Grounds list only has companies making applications:

[https://resources.finalseite.net/images/v1699475298/nhcsk12ncus/elmtermh1m195tbqfgwb/23-24\\_Grounds\\_School\\_Herbicide\\_Application\\_Schedule.pdf](https://resources.finalseite.net/images/v1699475298/nhcsk12ncus/elmtermh1m195tbqfgwb/23-24_Grounds_School_Herbicide_Application_Schedule.pdf)

## NHCS Website MSDS Raw

- [Advion Fire Ant Bate\\_SDS](#)
- [Basagran T&O Herbicide\\_SDS](#)
- [Celsius WG Herbicide\\_SDS](#)
- [Certainty Turf Herbicide\\_SDS](#)
- [Change Up Selective Herbicide\\_SDS](#)
- [Contrac All-Weather Blox Rodenticide\\_SDS](#)
- [Defendor Herbicide\\_SDS](#)
- [Dimension 2EW Herbicide\\_SDS](#)
- [Lesco Ronstar \(Oxadiazon\) Herbicide & Fertilizer\\_SSD](#)
- [Lesco Stonewall 4L Herbicide \(Prodiamine\)\\_SDS](#)
- [Manor Selective Herbicide\\_SDS](#)
- [ProScape Acelepryn Insecticide\\_SDS](#)
- [Roundup Pro Concentrate Herbicide\\_SDS](#)

- [Sapphire Herbicide\\_SDS](#)
- [TopChoice Insecticide\\_SDS](#)
- [Tower Herbicide\\_SDS](#)
- [Triple Crown T&O Insecticide\\_SDS](#)

## Athletic Fields Raw

.067% Acelepryn Insecticide (Season Long Army Worm Prevention/Grub Control)

Prodiamine 4L Pre-emergent

Celsius Post Emergent Herbicide

Basagran Post Emergent Herbicide

Triple Crown Insecticide (Grub, Fire Ant, Mole Cricket)

4% Ammonium Sulfate 60%XCU Slow Release

Defendor Post Emergent Herbicide

50% UFLEXX 50% Ammonium Sulfate

Dimension Pre-emergent Herbicide

Change Up Post Emergent Herbicide

20-0-10 w/ .95% Oxadiazon Pre-emergent Herbicide (Ronstar)

Sapphire Post Emergent Herbicide (Rye Grass Suppression)

Triple Crown Insecticide (Grub, Fire Ant, Mole Cricket)

4% Ammonium Sulfate 60% XCU Slow Release

Manor Post Emergent Herbicide

Certainty Post Emergent Herbicide

Tower Pre-emergent Herbicide

Source:

[https://resources.finalsite.net/images/v1689096255/nhcsk12ncus/qam7dss6iqozs9d6jzje/23-24\\_Turf\\_Management\\_Schedule.pdf](https://resources.finalsite.net/images/v1689096255/nhcsk12ncus/qam7dss6iqozs9d6jzje/23-24_Turf_Management_Schedule.pdf)

### **July –**

Granular Application • 25-0-15,

.067% Acelepryn Insecticide (Season Long Army Worm Prevention/Grub Control)

### **August –**

Liquid Application • Prodiamine 4L Pre-emergent •

Celsius Post Emergent Herbicide •  
Basagran Post Emergent Herbicide •  
Triple Crown Insecticide (Grub, Fire Ant, Mole Cricket) •  
Gator 25-0-0 Liquid Fertilizer w/ Micronutrients

**October –**

Rye Grass Seeding • Double Eagle Blue Tag Perennial Rye Grass Seed

**November –**

Granular Application • 30-0-8 Granular Fertilizer,  
4% Ammonium Sulfate 60%XCU Slow Release

**December –**

Liquid Application • Prodiamine 4L Pre-emergent •  
Defendor Post Emergent Herbicide

**2024 January –**

Granular Application • 34-0-0,  
50% UFLEXX 50% Ammonium Sulfate

**February –**

Liquid Application • Dimension Pre-emergent Herbicide •  
Change Up Post Emergent Herbicide

**March –**

Granular Application • 20-0-10 w/ .95% Oxadiazon Pre-emergent Herbicide (Ronstar)

**April –**

Liquid Application • Sapphire Post Emergent Herbicide (Rye Grass Suppression) •  
Triple Crown Insecticide (Grub, Fire Ant, Mole Cricket) •  
350 Turf Micronutrient Package

**May –**

Granular Application • 30-0-8 Granular Fertilizer,  
4% Ammonium Sulfate 60% XCU Slow Release

**June –**

Liquid Application • Manor Post Emergent Herbicide •  
Certainty Post Emergent Herbicide •  
Tower Pre-emergent Herbicide •  
Black Bio Soil Amendment + Micronutrient Package

## Names

Sodium bentazon 44%, Dicamba 57.4%, Iodosulfuron-methyl-sodium 1.9%,  
Thiencarbazone-methyl 8.7%, Sulfosulfuron (75%), Dimethylamine Salt of  
2-Methyl-4-Chlorophenoxyacetic Acid 51.05%, 1-Methyleptyl Ester of  
Fluroxypyr:[(4-amino-3-5-dichloro-6-fluoro-2pyridinyl)oxy]acetic Acid, 1-methylheptyl ester 6%,  
Dicamba (3,6-Dichloro-o-Anisic Acid) 4.17%, Florasulam 4.84%, Dithiopyr 24%, Prodiamine -  
40.8%, Metsulfuron 60%, Aceleprn - .067%, Glyphosate-isopropylammonium 50.2%,

Penoxsulam 3.68%, Fipronil (00.0143%), Dimethenamid-P - 63.9%, Bifenthrin 7.87%,  
Imidacloprid 13.83%, Zeta-Cypermethrin 2.7%