**School Integrated Pest Management: Weed Control**

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**Before you apply:**

* Send out an announcement of the application and post required signage.
* Make sure the area where application is taking place is vacated.
* **Log what you are going to spray, how much of it, where it is being applied, when the application will take place, time of reentry, and why it is being used.**

**When to Apply Herbicides to Established Turfgrass:**

* Pre-emergents (Pre): apply before seeds germinate as a preventative measure.
	+ Examples: *mesotrione, pendimethalin, isoxaben, dithiopyr, simazine, etc.*
* Post-emergents (Post): apply to already established plants. Treat when needed.
	+ Examples: *2,4-D, glyphosate, dicamba, triclopyr, sulfentrazone etc.*

**How to Apply Herbicides:**

* Wear proper personal protective equipment (gloves, rubber boots, goggles, fully protective clothing).
	+ The minimal personal protective equipment is listed on the herbicide label.
	+ Wash clothes used to apply chemicals in a separate load.
* Wash hands after applying, even if wearing gloves.
* Refer to label for application rate, how to mix, and how to store.
* Alternate which chemicals you use to reduce the risk of herbicide resistance.

**Weed Life Cycle:**

* **Annual:** Completes one growth cycle.
	+ **Winter Annual:** Germinates in the fall, dies in the summer.
	+ **Summer Annual:** Germinates in the spring, dies in the fall.
	+ Apply pre-emergent herbicides when possible for annual weeds.
* **Biennial:** Completes two growth cycles. In the first year, vegetative structures form, and the second year comes the reproductive structure.
* **Perennial:** Completes two or more growth cycles. These typically are harder to manage and have a taproot.
	+ Apply a post-emergent herbicide in the fall for perennial weeds, if unable to apply in the fall, do two applications of the herbicide in the spring.

**Cultural Control:**

* Refer to School Integrated Pest Management: Turfgrass Maintenance document.

Fall or Spring

**Common Turfgrass Weeds in the PNW and Chemistries to Manage Them:**

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| --- | --- | --- | --- |
| **Weed** | **Weed Lifecycle** | **Herbicide Timing** | **Active Ingredient** |
| **Barnyardgrass**(*Echinocola crus-galli*) | Summer annual | **Pre-emergent:** Spring | Pendimethalin or Quinclorac |
| **Black Medic**(*Medicago lupilina*) | Summer annual | **Pre-emergent:** Spring  | Pendimethalin or Dithiopyr |
| **Broadleaf and Buckhorn Plantains**(*Plantago major*, *P. lanceolata*) | Perennial | **Post-emergent:** Fall | 2,4-D or Carfentrazone-ethyl |
| **Bull Thistle and Canadian Thistle**(*Cirsium vulgare, C. arvense*) | Perennial | **Post-emergent:** Fall | Tricolpyr or 2,4-D |
| **Clover**(*Trifolium spp.)* | Perennial | **Post-emergent:** Fall**Fertilizer:** 4 lbs N/ 1000 sqft annually | Triclopyr**Fertilizer:** 4 Nitrogen |
| **Crabgrass**(*Digitaria spp.*) | Summer annual | **Pre-emergent:** Spring | Dithiopyr |
| **Curly Dock**(*Rumex crispus*) | Perennial | **Post-emergent:** Fall | 2,4-D |
| **Dandelion**(*Taraxacum officinale*) | Perennial | **Post-emergent:** Fall |  Triclopyr or 2,4-D |
| **Purple Deadnettle** **and Henbit** (*Laminum purpeum, L. amplexicalule*) | Winter annual | **Pre-emergent:** Fall | 2,4-D or Dicamba |
| **English Lawn Daisy**(*Bellis perennis*) | Biennial | **Post-emergent:** Fall | 2,4-D, Dicamba, or Triclopyr |
| **Knotweed**(*Polygonum aviculare*) | Perennial | **Post-emergent:** Fall | Dicamba or Triclopyr |
| **Lawn Violet**(*Viola papilionaceae*) | Perennial | **Post-emergent:** Fall | Tricolpyr, 2,4-D, or Dicamba |
| **Pineappleweed**(*Matricaria matricarioides*) | Summer and Winter annual | **Pre-emergent:** Spring or Fall | Pendimethalin or Dithiopyr |
| **Prickly Lettuce**(*Latuca serriola*) | Biennial | **Post-emergent:** Fall | 2,4-D, Dicamba, or Triclopyr |
| **Puncture vine**(*Tribulus terrestris*) | Summer annual | **Pre-emergent:** Spring | Pendimethalin or Dithiopyr |
| **Purslane**(*Portulaca oleracea*) | Summer annual | **Pre-emergent:** Spring | Pendimethalin or Dithiopyr |
| **Shepherd’s Purse**(*Capsella bursa-pastoris*) | Winter annual | **Pre-emergent:** Fall | 2,4-D, Dicamba, Imazapic, or Triclopyr |
| **Sowthistle, Annual**(*Sonchus oleraceus*) | Summer annual | **Pre-emergent:** Spring | Mesotrione or Sulfentrazone |
| **Speedwell**(*Veronica spp.*) | Perennial | **Post-emergent:** Fall | Tricolpyr or Dicamba |
| **Spotted Spurge**(*Euphorbia maculata*) | Summer annual | **Pre-emergent:** Spring | Pendimethalin, or Dithiopyr |
| **Woodsorrel**(*Oxalis spp.*) | Perennial | **Post-emergent:** Fall | 2,4-D, Triclopyr, or Dicamba |

**Footnote:** Fall is the optimum time to control perennial weeds with a single post-emergent application. Spring treatments will often require two applications, if you are unable to apply a treatment in the fall. Do not apply these products when temperatures are greater than 80 degrees. For annuals apply a pre-emergent herbicide

**For Questions Contact:**

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