

Perfect Time to Apply Pre-emergence Herbicides to your Turf

Weeds are unsightly and undesirable plants that grow where they are not needed. Weeds often grow faster than the desired turf grass, compete with the grass for nutrients, water, and light. If weeds are left uncontrolled it will result in the deterioration of the athletic field over time.

Because weeds grow faster than the desired plant, turf area with infested weeds has to be mowed more frequently than areas with little or no weeds. Weeds tend to infest turfs that are sparse and poorly established and maintained; this occurs because sunlight freely penetrates the soil surface and helps to promote the germination of weed seeds.

There are two approaches to have a turf area with little or no weeds, using pre-emergence and post-emergence. Pre-emergence herbicides kill the weeds before they emerge from the soil while post-emergence herbicides kill weeds after they have been established. The pre-emergence approach is the best method because “an ounce of prevention is better than a pound cure.” Please note that pre-emergence herbicides do not prevent germination, but rather kill weeds shortly after they germinate.

It is very important for a field manager to first consider Integrated Pest Management (IPM) prior to using any pesticides. Cultural weed control is very important; for example the field manager should routinely scout the field to identify weeds and to note new species that are present. Early detection is critical to prevent the spread of problem weeds. It is proven that weed populations are influenced by irrigation; how much water per application, and the frequency, can help determine the level of weed infestation. In 2006, Busey and Johnston from the University of Florida established that daily irrigation influenced the occurrence of dollar weed in St. Augustinegrass. In addition, wet soil makes the turf conducive for sedges, such as purple nutsedge and kyllinga. Cultural practices cannot be overemphasized because one should not only depend on herbicide to prevent or fix weed problems.

Let's get back to pre-emergence. In order to effectively prevent the target weeds from emerging, the turf manager must acquire the basic knowledge and understanding of the temperature requirement for the target weed to germinate. Knowledge of whether the weed is a winter/summer annual is vital. For example, crabgrass, which is a summer annual, will germinate when there is temperature range of 55-70 degree F for several consecutive days. In Central Florida, there is a narrow window of time to apply pre-emergence herbicide. If application is not done within that window, the herbicide will have little or no effect because the weeds already started growing. Application must be done prior to weed emergence so predicting the weed life cycle is absolutely vital in applying pre-emergence at the right time. Monitoring the soil temperature in the upper half inch of the soil is an excellent way to determine when the right time to apply pre-emergence.

It is also important to note that there are winter annuals and summer annuals. Most winter annual weeds start germination in fall and growth continues until late spring to early summer. In Central

Florida, to have proper control of winter annual weeds, it is best to apply pre-emergence in mid-October into the middle of November. After applying pre-emergence, the herbicide should be watered in 1/4". Irrigation or rainfall moves herbicide into the root zone area of the soil. Too much rainfall will wash pre-emergence off the target site and also result in leaching. It is important to note that not every weed can be controlled by pre-emergence. Pre-emergence does not have any effect on perennial weeds such as sedges and white clover that are established from vegetative reproduction.

All pre-emergence are not made equal! Each pre-emergence has different residual effect and persistence is the key to residual activity. Persistence of pre-emergence is linked to the rate of microbial activity and also temperature; there is less residual activity in summer than in spring. In addition, it is important that the field manager properly identify the turfgrass species; not all herbicides are made for all turfgrasses. For example, atrazine (pre-emergence) should be used in Centipede grass and St Augustine grass but will severely injure Bermudagrass and Bahiagrass. Choosing granular formulation over liquid formulation is of great advantages; applying granules reduces foliar contact, increases soil water concentration and has better soil incorporation. There are many people with the misconception that liquid pre-emergence does not need to be watered in, however, the herbicide must get below the soil surface to start working.

Rotating your pre-emergence is just as important as rotating other pesticides; this will prevent the buildup of resistance to a particular pesticide. In order to effectively rotate a pesticide, the manager has to have the basic knowledge of the pre-emergence mode of action and the class which each chemical is fall under. Rotating a name does not necessary mean that you are using a different chemistry of chemical. For example, benefin (balan), pendimethalin (pendulum), and prodiamine (barricade) are from the same class which means substituting any of the above for the other would not be an effective rotation.

Over-seeding- You should not over-seed and apply pre-emergence in the same time period. Pre-emergence herbicides will both prevent target weeds and the desired turf from emerging. Read the label for instruction on how early after pre-emergence application grass seeds can be sown.

Finally, read and follow the manufacturer's instructions placed on the label. Pre-emergence herbicides are available at your local hardware stores and commercial landscaping supplies. The following are some common pre-emergence herbicides that are available to both landscapers and homeowners; Barricade, Galaxy, Spectacle, Dimension, Pre-M, and Pendulum. I wish you a weed free life.

For more information on commercial landscaping and other related horticulture topics, contact Grantly Ricketts with UF/IFAS Extension in Osceola County at 321-697-3000 or email gricketts@ufl.edu.