

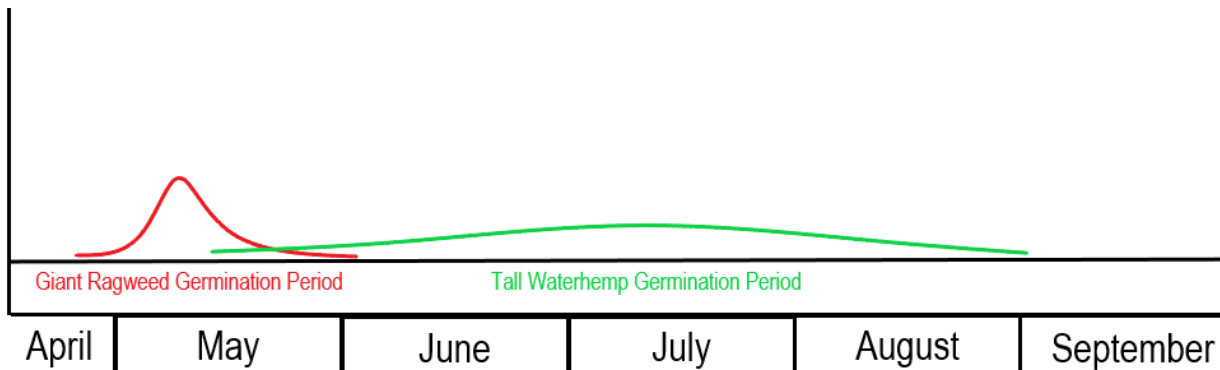
## Pre-Emerge weed Control – What can go wrong?

There is one constant that persists in agronomy, how do I control the weeds that compete for moisture and nutrients my crop needs to produce a good yield. Pre-Emergent Herbicides are popular for many different reasons, but primarily they are used because they have a proven record of controlling many of the problem early season weed. So, what can go wrong?

First and foremost is the environment. The truth is that the environment controls much of the biology that affects growth in plants. Hot, Cold, Wet, or Dry are serious factors that can be the difference between excellent and poor weed control. The general rule is that the best growing conditions for plants will also result in the best performance by our herbicide chemistry. Understanding the Mode of Action of the chemistry will give you clues as to what type of weed control to expect. For example, many of the pre-plant and pre-emerge chemistries rely on soil moisture to work effectively. These chemistries are absorbed by seeds, roots or shoots of the various weeds. Dry soil conditions after applications of these products will often result in less than desirable control of the weed. So Now what?

If done early, most times, a mechanical mixing of the soil will root out weed escapes and help activate the chemistry if enough soil moisture remains. For weed growth that has escaped or grown beyond the mechanical abilities, post-emergent chemistries are available, but are often higher in cost as well as being less effective because the weed size has grown beyond the capability of the herbicide to work effectively.

Another issue is the nature of germination of different weed species. Not all seeds germinate at the same time! Each plant species has differing requirements for soil temperature and moisture which means that they all do not germinate at the same time. In addition, a certain amount of tempering and dormancy exist within each plant species seed production causing some seed to delay germination to a later time. This delay can be days, weeks months or years apart. Below is a chart showing the emergence timing of two common weed species Giant Ragweed and Tall Waterhemp. Many of our pre-emergent herbicides do not have persistence that lasts long enough for later germination species.



A last thought on issues that can alter the effectiveness of a pre-emergent herbicide program is the ability of plants to develop resistance to certain modes of action. Continued use of the same chemistry or families of chemistries has become a real problem. By rotating the modes of action and/or adding additional modes of action is necessary to keep our herbicide tools active and effective.