

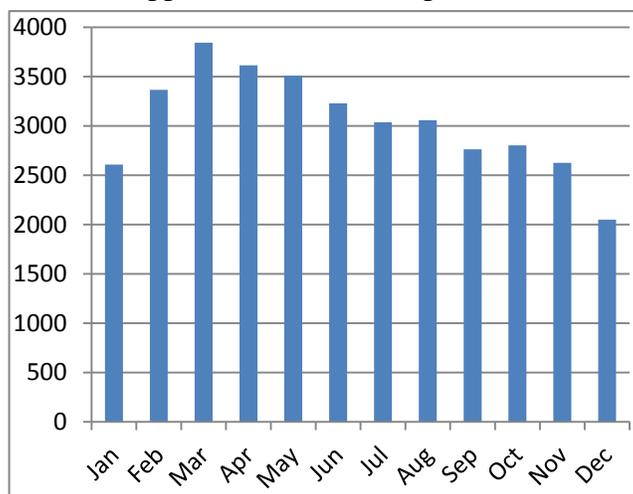
## Reducing Reliance on Herbicides in Public Areas

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Public areas where herbicides are commonly used include parks, business lots, golf courses, tree wells, parking lot and hard-surface playground cracks, edging, some cemeteries, and some school sites. Because it is difficult to restrict access to these areas after a pesticide application, the most prudent tact to avoid the public's contact with a pesticide is to reduce the number of pesticide applications in any given area.

In 2010, the most recent set of available data from the California Department of Pesticide Regulation, there were over 30,000 herbicide applications for a total of over 1 million pounds of herbicides applied to sites designated as "landscape", excluding aquatic sites. The number of applications peaked in March (Figure 1), likely due to warming temperatures as the summer weeds began to germinate. Nevertheless, even the month with the fewest applications still had over 2000 applications and 52,619 lbs. of active ingredient.

Figure 1. Number\* of herbicide applications to landscape sites in in California in 2010.



\*This figure counts each component of a combination as an application; therefore the number is slightly overestimated.

Obviously, herbicides are regularly and heavily used in landscape situations. While herbicides are an effective and often economical method to manage weeds, they are also used in as a response to the problem as opposed to using them as part of a long-term sustainable weed management program. Additionally, it may be possible that herbicides are being over-applied, especially when formulated with a fertilizer.

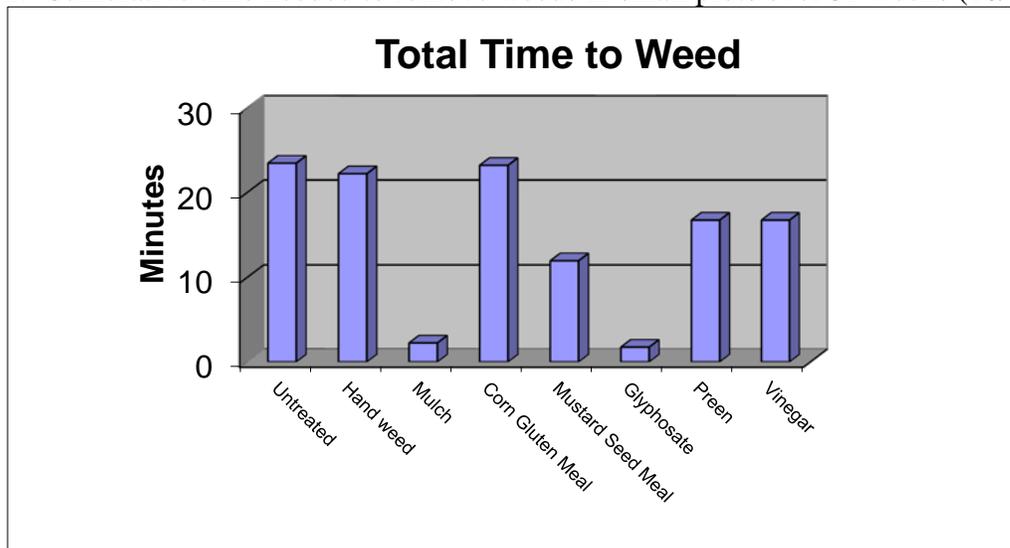
When considering how to reduce the number of applications and overall herbicide use it is important to understand the driver used to make the decision to use an herbicide. Action triggers are generally recognized as number of weeds per area but in actual practice in a

landscape situation it is more likely a scheduled application or based on a certain level of aesthetic damage. For example, Bell and Marsan (1991) reported, from personal experience, that people can detect low levels of defoliation in the landscape, particularly in front foundation plantings, and therefore using aesthetic injury level as a threshold for damage is a valid method for setting an action trigger, that is, the point where some type of control action(s) should be implemented. In the context of reducing reliance on herbicides, landscape contractors should be able to evaluate aesthetic damage and set reliable action thresholds based on those thresholds.

More importantly, however, in an integrated weed management program the focus should be on prevention rather than a reaction to weed abundance. Checking irrigation systems, cleaning equipment, increasing the use of mulches where appropriate, and managing the plant selection and design to improve plant competition will all contribute to reducing weed invasion and pressure. Additionally, a site audit where locations are prioritized to set the intensity of herbicide use in relation to public acceptance of weed abundance should be completed and reassessed as needed.

Finally, alternatives to traditional herbicides should be considered. Using thermal methods where appropriate, such as along fence lines, is one method although a more sustainable choice is installing mowing strips. More and more sites are adopting the use of mulches for long-term weed suppression. While mustard seed meal has yet to be commercialized for landscape use, our research has shown that it provides excellent preemergent weed control with no injury to desirable plants in our tests. Alternatively, corn gluten meal is available and marketed for preemergent weed suppression in turf and landscape but in our tests, it provides very little weed suppression (Figure 2).

Figure 2. Cumulative time needed to remove weeds in small plots over 31 weeks (10/09-5/10).



### Reference

Ball, J. and P. Marsan. 1991. Establishing monitoring routines and action thresholds for a landscape IPM service. *Journal of Arboriculture* 17(4):88-93.