

## Patricia D. Hastings

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**Subject:** WEED CONTROL CONSEQUENCES BASED UPON PRIOR YEARS' PRACTICES

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*Note: Although C.O.R.N. is a summary of crop observations, related information, and appropriate recommendations for Ohio Crop Producers and Industry, the excerpted article may provide valuable insights for NJ growers. C.O.R.N. is produced by the Ohio State University Extension Agronomy Team and State Specialists at The Ohio State University and Ohio Agricultural Research and Development Center. Issues of C.O.R.N. are archived online @<http://corn.osu.edu/index.html>.*

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### **WEED CONTROL CONSEQUENCES BASED UPON PRIOR YEARS' PRACTICES** (Stachler and Loux)

Weed populations change over time, and the production practices implemented by producers have a major influence in determining the nature of these changes. In effect, the weed control and crop production practices of prior years have caused some of our current weed problems. Below are some examples of the weed population shifts or weed control problems that have occurred over the past 55 years due to management practices:

- Annual grasses became a problem in corn after the introduction of 2,4-D in 1947, because of the heavy reliance upon 2,4-D to control broadleaf weeds and the subsequent reduction in row cultivation;
- Fall panicum became a new weed problem in corn after the introduction of atrazine, because of the heavy reliance upon atrazine, which did not control fall panicum, continuous corn, and a reduction in row cultivation;
- Atrazine-resistant weeds began to occur in 1968, 11 years after the introduction of atrazine, because of the continued heavy reliance upon atrazine and continuous corn;
- Perennial weeds became more of a problem in corn and soybean fields after the introduction of no-tillage practices. By the 1990's, trees became a component of the weed population in long-term no-tillage fields;
- ALS-resistant weeds began to occur in Ohio in the mid-1990's, due to the heavy reliance upon Pursuit, Preview/Canopy, and other ALS-inhibiting herbicides and continuous soybeans;
- Annual grasses become a problem in no-tillage and reduced-tillage corn in the 1990's due to heavy reliance upon Extrazine, surface-germinating grasses that were not adequately controlled by chloroacetamide herbicides, the reduction of atrazine rates, and the elimination of row cultivation;
- Winter annual weeds increased during the late-1990's due to warmer winters, the practice of delaying burndown herbicide applications until planting (that allowed winter annual weeds to set seed), increased use of postemergence herbicides, reduced usage of preemergence herbicides, earlier harvesting (that allowed more time for winter annual weeds to establish), and increased no-tillage acreage;
- The increase in dandelion populations currently being experienced is due to the reliance upon only glyphosate in the burndown and in-crop applications in Roundup Ready soybeans, a decrease in the use of residual herbicides in soybeans and to some degree corn, the large number of

no-tillage acreage, continuous soybeans, and the failure to use 2,4-D in burndown treatments;

- Glyphosate-resistant marestail is now present in Ohio due mostly to continuous no-tillage soybeans and the usage of glyphosate only for burndown and in-crop applications in Roundup Ready soybeans since 1997;

- One positive change has been the near extinction of jimsonweed. This has occurred due to early planting, no-tillage, and use of ALS-inhibiting herbicides.

These examples illustrate the consequences or weed population shifts that can and do occur based upon the usage of a limited number of management practices. This is especially true when herbicides are relied upon as the main weed control tool. Diversity in the sites of actions of herbicides is important to minimizing the number of herbicide resistant species. To achieve this diversity, preemergence herbicides should be used more often in soybean production, especially no-tillage soybeans.

Despite the many negative examples cited above, there are currently more methods and tools available to control weeds than at any time in the history of weed control!

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