Weeds Encyclopedia Article

Weeds

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Contents

Weeds Encyclopedia Article.....1

Contents.....2

Weeds.....3

Weeds

Weeds represent the most important pest complex affecting humans throughout the world. In the United States, weeds are estimated to cost the economy more than $20 billion annually. Weeds negatively affect food and fiber production, human and animal health, and the quality of life for the world population. For instance, weeds impact humankind by causing crop failures, triggering allergic reactions, and reducing the esthetic quality of lawns. Interestingly, of the thousands of plant species in the world, less than 250, or approximately one-tenth of a percent, are considered important weeds.

There are a number of definitions for weeds. The Weed Science Society of America in 1994 defined weeds simply as "plants that are objectionable or interfere with the activities or welfare of man." However, an ecological definition describing the characteristics that allow some plants to be weeds is more useful. These characteristics include: the ability to establish in disturbed habitats; the ability to grow and reproduce across a wide range of climatic conditions; seed dormancy; nonspecific germination requirements; rapid growth; high seed production; and unspecialized pollination. Weeds can improve their success by releasing metabolic **compounds** that interfere with neighboring plants. These compounds are allelotoxins, and the resulting allelopathic response on other plants may represent a future weed management opportunity.

Weeds growing in a North Dakota wheat stubble field.

The importance of weeds has resulted in a significant number of herbicides applied worldwide. Further, tillage (soil disturbance) is also a primary tactic used to manage weeds. These strategies may result in soil erosion and herbicides leaching to ground water. However, the benefits of the judicious use of these tactics has resulted in dramatically higher food production and increased agricultural efficiency. Biological control tactics such as using insects or diseases to attack weeds have not been effective in most annual food crops but may hold promise for the future.

See Also

Allelopathy; Herbicides; Interactions, Plant-Plant; Invasive Species; Kudzu.

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