2022 Weeds and Weed Management

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Integrated weed management (IWM)

Integrated Weed Management (IWM) is an approach to managing weeds using multiple control tactics. The purpose of IWM is to include many methods in a growing season to allow producers the best chance to control troublesome weeds. *https://integratedweedmanagement.org/index.php/iwm-toolbox/what-is-integrated-weed-management/* A FREE online book (Manage Weeds on Your Farm: An Ecological Approach) describing sustainable weed management practices and how to apply them on farm is available at the Sustainable Agriculture Research and Education (SARE) website *https://www.sare.org/news/manage-weeds-on-your-farm-an-ecological-approach/*. When planting hemp, consider the following strategies:

- **Site selection**
  - Avoid fields with high weed densities or perennial species
- **Planting date selection**
  - Establish your crop before weedy competitors emerge
- **Stale seedbed technique**
  - Stimulate weed seed germination with disturbance or irrigation/rainfall and eliminate emerged seedlings prior to crop establishment
- **Seedbed preparation**
  - Prepare smooth, even seedbeds to facilitate uniform crop establishment
- **Seed quality and seeding rates**
  - Choose varieties with rapid and even germination and plant at appropriate densities to minimize the space that weeds can colonize
- **Transplants**
  - Maximize the height differential between crop and weed to improve competitiveness
- **Cultivation**
  - Keep rows straight and even to maximize performance and reduce potential for crop damage
- **Plastic mulches**
  - Remember to manage weeds between rows and in planting holes
- **Minimize weed seed spread**
  - Manage and harvest cleanest fields first

Pre-emergence herbicide trials

Weeds are a limiting factor in crop production Identifying effective and safe herbicides for use in hemp is one goal of the Weed Science lab based in Geneva. Pre-emergence or pre-transplant applied herbicides are critically important as early emerging weeds are often the most competitive. In 2022, an investigatory field trial was established at Cornell AgriTech in Geneva to evaluate NON-REGISTERED herbicides for weed suppression and crop safety in seeded 'Anka' hemp. Seed was planted in a Honeoye Loam at Research North and pre-emergence herbicides applied to the soil surface directly afterward (see below figure for products included in the study). One-half inch of irrigation was used to stimulate seed germination and incorporate herbicides. At 28 DAT, hemp stand counts were conducted in three 0.5 m by 0.5 m quadrats per plot (3 m by 7.6 m) and aboveground biomass harvested and weighed. Data are expressed as a percent of the untreated check (UTC). In this trial, 'Anka' hemp was somewhat to extremely sensitive to all investigated herbicides, with respect to percent emergence and percent aboveground biomass, with several herbicide treatments almost completely preventing crop establishment. There was some concern that the seed lot was not as vigorous as desired, which highlights a critical point: herbicide injury can vary in response to environmental factors but also seed quality. Care should be taken to always plant high-quality seed. Trials will be repeated in 2023 and will include delayed post-emergence applications of some products to safely extend residual control in season. Trials in transplanted hermp and trials looking a postemergence herbicides are ongoing.