



346 Long Swamp Rd. New Egypt, NJ 08533

CREATING NO-TIL COVER IN NEWLY ESTABLISHED
ORGANIC BLUEBERRY BLOCKS

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The project's intent is to establish a no-til cover for the floor of a newly established organic blueberry plot. The main purpose of this project is to: reestablish the ecology of soil life, improve soil fertility and structure, reduce soil erosion, control weeds, and help protect the soil and crop from adverse climate conditions.

The most common method of in row maintenance for both conventional and organic growers has been tillage. Through the use of harrows, discs and rotovators, inter row maintenance is kept free of weed. This means that the only vegetative growth is the blueberry crop leaving over eighty percent of the land bare. Many progressive growers add organic material in the form of decomposed leaf mulch and tree mulch to the rows and walkways. This has been the best attempt at increasing organic content to the soil and improving plant health and fruit yields. This method however does not adequately address the entire issue outlined in the main purpose of this project.

The establishment of a permanent cover for the floor of newly established organic blueberries could be the best alternative. Weed control consistently ranks as the number one problem in organic crop production systems. High bush blueberries have a long establishment period, shallow-fibrous roots, and poor competitive ability in obtaining water, nutrients and sunlight. Weedy fields have been shown to decrease fruit yields and vegetative growth significantly as well as increase insect and disease problems. Thus, weeds need to be especially well managed prior to establishment and during the first five years of crop growth.

Some common weed species in these trials include annual grasses such as hairy crabgrass (*Digitaria sanguinalis*) and foxtail species (*Setaria spp.*). Perennial weeds include quackgrass (*Agropyron repens*), goldenrod (*Solidago*) and aster species.

NOFA-NJ Certified Organic Blueberries
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Walkway weed suppression in new plantings was achieved with the establishment of two types of fine leafed turf fescues and monthly mowing. The slide titled "COVER CROPS FOR THE WALKWAY TRAFFIC" shows newly planted fine fescue and chewing fescue on the left. On the right, the photo shows the same field three months later at the SARE/NOFA sponsored "Organic Blueberry Production Open House". The preliminary results indicate good weed suppression, which can be seen on the graph titled "FINE FESCUE FOR WEED MANAGEMENT WALKWAY RESULTS-2003".

Parallel to this project is the evaluation of different mulches intended to reduce weed competition in the rows of blueberries. Mulch comparisons in the first year of this multi-year study include pine bark mulch, hardwood mulch, coffee grinds, cocoa grinds, municipal leaf mulch and composted tealeaves. 3' x 12' plots were replicated 4 times in 4 adjoining rows. Applications of 3-4 inches of these mulches within the crop row to a new planting of Duke high bush blueberry have provided a combined weed control level of over 95% during 2003.

WJ Sciarappa from the Rutgers Cooperative Extension Office in Freehold, New Jersey has conducted this mulch study with over fifteen volunteers. He is an integral driving force in our ongoing efforts to improve and expand Organic Blueberry production.

This study is proving to be a solid tool in evaluating the usefulness of permanent cover in organic blueberries. The fact that permanent cover can be affordably established in an effort to eliminate bare ground tilling is positive. This newly established cover is out competing weeds, reducing erosion and providing a working ally that is not so impacted by our adverse climate conditions of 2003. With respect to reestablishing the ecology of soil life, much more time, resources and science-based investigation is needed. We will continue to take soil samples and monitor the complex changes in soil.

In addition, the organic blueberry grower may need to resort to OMRI approved materials as Scythe, Burnout, white vinegar and corn gluten. These non-selective and non-persistent herbicides may find a place in pre-plant situations and weed management between the rows along with the cultural methods described.

The 2004 growing season will provide us more opportunity to evaluate the growth and health of the plants as well as yield potentials. The 2003 season was not a consistent growing season and all flowers and berries were removed to reduce the stress of transplant. Our soil and leaf analysis data for 2003 are in and we are looking forward to comparisons to 2004. We are very hopeful to conclude our study this year and provide a base line model for the establishment of transplanted Organic Blueberry plants into a permanent cover.

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WEED MANAGEMENT TARGETS

Broadleaves & Grasses - Annuals & Perennials In Row & Walkway Areas



Key Weed Pests

Annual Grasses



Setaria & Digitaria species



Key Weed Pests

Perennial Grasses/Sedges

Quackgrass, Indian Grass, Broomsedge Yellow Nutsedge

Weeds are the worst!



Key Weed Pests

HERBACEOUS & WOODY BROADLEAVES

Summer Annuals

- Ragweed/Lambsquarters

Winter Annuals

- Chickweeds

Biennials/Perennial

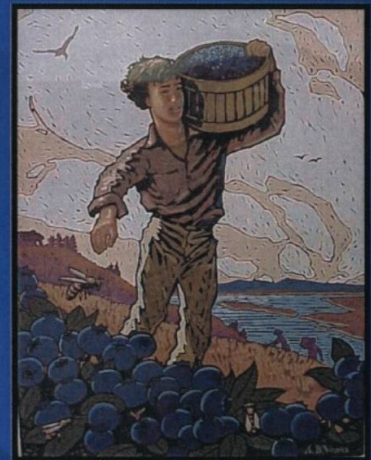
- Plantains/Goldenrods/Asters

Brambles/Vines/Tree Seedlings



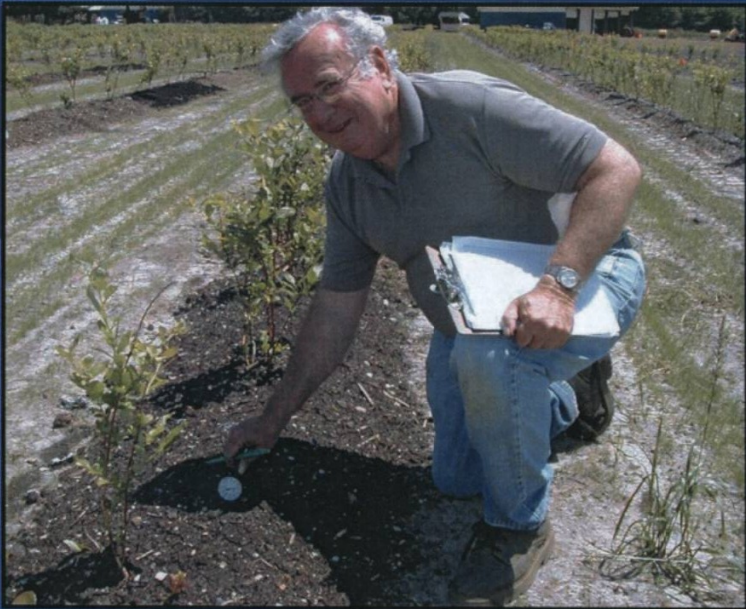
Weed Management Options

- A. Cultural – water management *
- B. Mowing
- C. Cultivation *
- D. Hand Weeding
- E. Hoeing
- F. Flaming
- G. Grass cover crop *
- H. Herbicides – vinegar, corn gluten, Scythe
- I. Mulching *



Cover Crops for Walkway Traffic

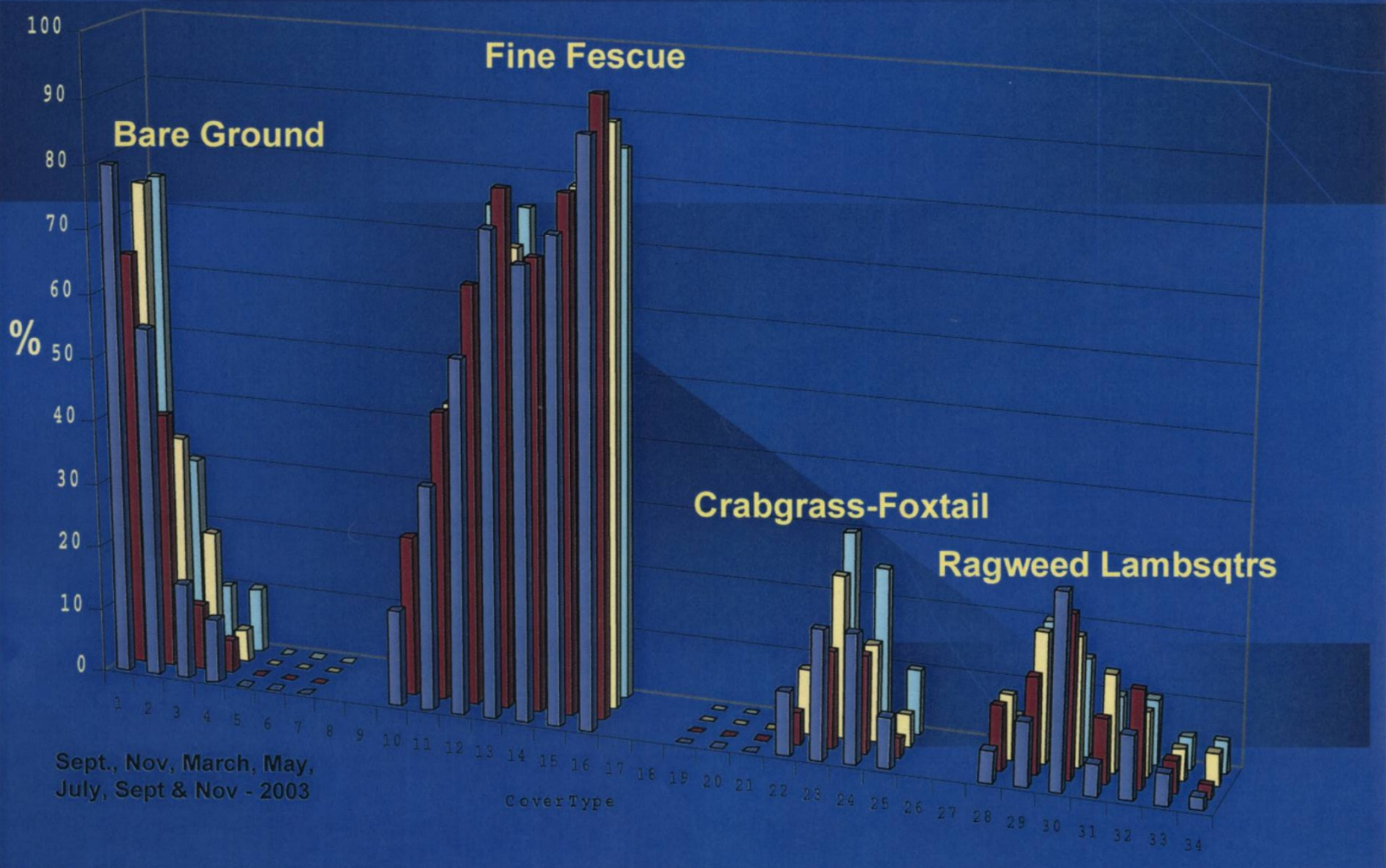
Fine Fescues



- Slow Growing
- Low Height
- Low Nutrients
- Competitive

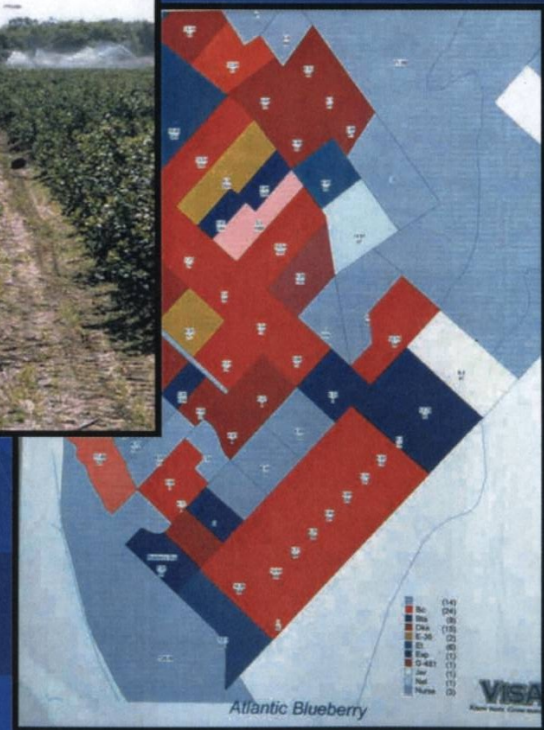


Fine Fescue for Weed Management Walkway Results - 2003



WATER MANAGEMENT

Trickle vs. Overhead Irrigation



Thanks to

❖ SARE

❖ NRCS

❖ AAANJ

❖ NJAES



NEWS & ASHS