

## **TURFGRASS PLANTINGS AND HORTICULTURAL EVALUATIONS**

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### **SUMMARY**

Horticultural evaluations were undertaken starting in 1993 on turfgrass species and cultivars. A total of 16 plots, each replicated 3 times, were successfully established consisting of Kentucky bluegrasses, fine fescues, bentgrasses, red top, and tall fescue cultivars.

During the summer of 1994, turfgrass trials were expanded another 8 plots, again with triple replications consisting of different cultivars of the same species. These plots are still in the process of becoming established.

These trials were expanded in 1994 to include a planting of wildflowers, vegetables, flowers, and ornamental grasses. A large portion of the non-planted area was also sown with hairy vetch in early August to initiate efforts at sustainable production with annual crops of flowers and vegetables.

The value of these efforts will be multi-fold:

1. They will allow the residents to witness the differences between grass species and cultivars under "standard normal care". This will provide them with choices from an aesthetic and input requirement standpoint.
2. The vegetable and flower demonstrations go beyond cosmetics. They show what can be produced in the short summer months and what cannot. The rotations with hairy vetch will demonstrate that production can be sustained with a large reduction or possible elimination of chemical inputs.
3. They will be used for in-service training, as part of the Annual Crops Field Day, Professional Improvement, and

as a source of information and education for other agencies in the area.

## PROJECT OBJECTIVES

- Demonstrate the feasibility of growing various horticultural crops with minimal, sustainable inputs.
- Describe the effects that the wildflower planting will have in regards to Integrated Pest Management (IPM).
- Stimulate interest in wildflowers as an alternate choice in landscaping that would be ecologically sound.
- Recommend to local residents and growers alike, which species and cultivars of horticultural crops can be successfully grown for either increasing the beauty of their property, or for entrepreneurial pursuits.

## MATERIALS AND METHODS:

Turfgrass materials used:

Seed - 1993 Planting

- `Reliant' Hard Fescue
- `Valda' Hard Fescue
- `VNS' Red Top
- `Cindy' Creeping Red Fescue
- `VNS' Sheep Fescue
- `SD Common' Kentucky Bluegrass
- `Supranova' *Poa supina* Bluegrass
- Buffalograss
- `9032' Hard Fescue
- `Bamcuda' Red Top
- `Ky 31' Tall Fescue
- `Triple A' Tall Fescue
- `Amigo' Tall Fescue
- `Ariba' Tall Fescue

- `9061' Colonial Bentgrass
- `Exeter' Colonial Bentgrass

### Seed - 1994 Planting

- `Rebel II' Tall Fescue
- `1757' Kentucky Bluegrass
- `Rebel Jr' Tall Fescue
- `Touchdown' Kentucky Bluegrass
- `Palmer II Perennial Ryegrass
- 'Jamestown II' Chewings Fescue
- `Covar' Sheep Fescue
- `Ram I' Kentucky Bluegrass

### Vegetative Planting - 1994

- Buffalograss

### Fertilizer:

- Harmony 14-3-6

### Irrigation:

- Portable water tractor following garden hose layout. Plans are for an automatic irrigation system to be installed to facilitate more accurate irrigation scheduling and uniform application.

### Herbaceous Plantings:

- Fountain Grass, Miscanthus, Blue Fescue, Great Basin, Quaking Grass, Mountain Brome, Blue Bunch, Alpine Bluegrass, Lemon Balm, Basil, Marigolds, Cerastium, Portulaca, Yarrow, Shasta Daisy, Boltonia, Petunias,

Zinnias, Salvia, Pansies, Tulips, Hyacinths, Allium, Garlic and Daffodils.

### Vegetable Trials:

- Sweet Corn - Seneca Horizon, Extra Sweet, NK-199
- Beans - Tender Green, Royal Burgundy
- Pumpkin - Connecticut Field, Jack-Be-Little, Autumn Gold
- Squash - Sweet Mama, Table Queen, Dakota Grey
- Cucumber - Marketmore, Straight 8
- Watermelon - Yellow Baby
- Ornamental Gourds
- Kohlrabi - White and Purple
- Leeks
- Peppers - Chili, Cayenne
- Tomatoes - Cannonball, Sheyenne, Golden Hybrid, Supersteak Hybrid, Mountain Gold, Santiago, Good N Early, Oregon Spring
- \* Note: The produce that was harvested was donated to a local charity.

### Wildflowers:

- A mixture for dry summers, consisting of: Arroyo Lupine, Scarlet Flax, Prairie Aster, Painted Daisy, California Poppy, Blazing Star, California Blue Bell, Plains Coreopsis, Yellow Prairie Coneflower, White Yarrow, Showy Evening Primrose. The 1993 plantings established satisfactorily this year. The 1994 plantings are yet to be established.

### Hairy Vetch:

- Hand planted August 25th, after treatment with inoculum. The seed was impressed into good contact with the soil by using a 4-wheel ATV. Germination was slow initially, due to the dry conditions for approximately 3 weeks. But, with additional precipitation and an extended growing season, a good stand was established

going into the winter.

- The grass seed was sown by hand into 8' X 10' plots, watered and mowed as needed, and fertilized twice a growing season - spring and fall.
- Tomatoes, pepper, kohlrabi, and leeks were transplants, the rest direct seeded. All transplants were watered in with Miracle Grow. Plants and seedlings were watered when possible.
- Herbaceous plantings were all transplants, and because of their proximity to the water source, did not experience significant drought or heat stress.
- Wildflowers were mixed with sand and the seed passed through a drop spreader. They did not receive any supplemental water.

## RESULTS AND DISCUSSION:

### Turfgrass Plantings:

Where the 1993 planting effort netted an excellent stand of grass, the 1994 undertaking resulted in a heavy infestation of weeds choking out the grass. Some chemical control was attempted using Confront and Trimec, but it appears as if a major reseeding will be needed in 1995 to get a decent stand. Trimec appeared to be more effective on dwarf mallow, while this same weed escaped any stand reduction with Confront. Purslane and redroot pigweed were wiped out by both herbicides. Because of the heavy weed infestation, a major reseeding will be undertaken in the spring of 1995. No evaluation of this planting was attempted.

We were able to evaluate the 1993 planting a couple of times and found the ranking as follows - from best to worst:

- SD Common Kentucky Bluegrass
- Hard Fescues - Reliant, Valda, and 9032
- Tall Fescues - Ariba, Amigo, Triple A Blend
- Cindy Creeping Red Fescue
- VNS Red Fescue, VNS Sheep Fescue
- Colonial Bents - Exeter, 9081
- VNS Red Top

- Supranova Bluegrass
- Ky 31 Tall Fescue
- Buffalograss

We feel that the ratings were good enough for the first five species to be considered for use as turfgrass. The others would be deemed unacceptable. In all fairness, Buffalograss typically establishes poorly from seed. Hence, the transplanting of plugs this summer which, as stated earlier, are doing quite well.

#### Herbaceous Plantings:

- All established satisfactorily and looked good throughout the remainder of the growing season. This area is being expanded next year with spring bulbs and more perennials.

#### Vegetable Plantings:

- The vegetable plantings were put in too late this year, although most performed satisfactorily. We will attempt to rotate the various vegetable species to give home gardener and commercial grower a broad pallet to select from. No attempts are made to quantify production on a per acre basis.

#### Wildflower Plantings:

- Wildflower seed was planted twice with no results showing by the end of the growing season. It is hoped the seed is still viable, and will establish for us next season.

#### Hairy Vetch:

- Hairy vetch was planted in late August and is emerging non-uniformly to about 6 to 9 inches in height. Due to the dry month, emergence was slow, even with hand irrigation. The intent behind this planting is to get a cover crop established before winter closes in. The nodulation will hopefully fix ample nitrogen and other nutrients for our spring planting of vegetables in 1995. Research reports that with an August planting of hairy vetch, nitrogen yielded should be about 60 pounds/acre, or almost 1.4 pounds per 1000 square feet.

- Because of the cover provided by the fall and early spring growth of the vetch, weed pressure should be significantly reduced, giving a competitive advantage to the desirable crop, whether it be vegetables or grass seed.
  - Procedure calls for the vetch to be mowed in the spring, and planting directly in the litter for maximum nutrient availability and weed control.
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