

SUMMARY
OF
TURFGRASS RESEARCH PROJECTS
AT
MICHIGAN STATE UNIVERSITY

OCTOBER 15, 1970

M. S. U. Turfgrass Breeding Research

K. T. Payne

A. Current Projects:

1. Red fescue breeding for rhizomatous character and leafspot resistance (with Vargas).
2. Bentgrass breeding for a colonial type with disease resistance and sufficient aggressiveness to compete with Poa annua.
3. Breeder seed production program for:
 - (a) Wintergreen red fescue
 - (b) Winter hardy tall (meadow) fescue.
4. Environmental control of seedhead formation in red fescue needed to obtain a second generation per year.
5. Evaluation of bentgrass, Kentucky bluegrass, fescue and ryegrass varieties for Michigan conditions (with Beard).

M. S. U. Turfgrass Pathology Research

J. M. Vargas, Jr.

A. Current Projects:

1. Studies on the development of Fusarium blight.
2. Chemical and cultural controls of Fusarium blight.
3. Testing systemic fungicides for the control of various fungus diseases (Powdery mildew, Dollar spot and Brown patch).
4. Helminthosporium leaf spot studies on fescue.
5. Evaluating new fungicides for the control of snow mold and determining proper time of application.
6. Evaluating the extent of nematode problems on turf in Michigan and studying possible control measures.

B. Projects Planned:

1. Pesticide degradation in the soil and water.
2. Chemical control studies on leaf smut of Merion bluegrass.

M. S. U. Turfgrass Physiology and Ecology Research

J. B. Beard

A. Current Projects:

1. Biochemical mechanisms of high temperature growth stoppage (Kaufmann).
2. Prevention of winter injury by desiccation and low temperature.
3. Cultural and environmental factors affecting the water use rates of turfs (Shearman).
4. Mechanisms and biological prevention of thatch formation (Martin).
5. Characteristics, adaptation and cultural requirements of annual bluegrass (with Rieke and Turgeon).
6. Evaluation of cultivars, blends, mixtures and relative cutting heights in rate of (a) sod formation and (b) sod rooting.
7. Sod clipping utilization (with Tesar, etc.).
8. Renovation of annual bluegrass dominant fairways and establishment of bentgrass or Kentucky bluegrass dominant turfgrass communities (Turgeon).

B. Projects Planned:

1. Physiological basis of shade adaptation.
2. Cultural systems for optimum sod production (with Rieke).
3. Physiological basis of low temperature discoloration of warm season turfgrasses.

B. Projects Planned: (Continued)

4. Evaluation of carbohydrate extraction procedures for Poa and Agrostis species.
5. Components of competition within a turfgrass community.
6. Development of a traffic simulator for use on turfgrass research plots (with Rieke).

C. Projects Terminated:

1. Roadside establishment studies.
2. Snow mold control (transferred to Vargas).
3. Causal mechanisms of winter injury.
4. Mixture ecology studies.
5. Sod heating mechanisms and prevention (King).

M. S. U. Turfgrass Soils Research

P. E. Rieke

A. Current Projects:

1. Evaluation of nitrogen carriers for turfgrass fertilization.
2. Determination of nitrogen requirements of several turfgrasses.
3. Comparison of nitrogen response of sodded and seeded Merion.
4. Evaluation of several nitrogen fertilization programs on fine sandy loam (East Lansing) and sand soil (Traverse City), (with Beard).
5. Study of the movement of nitrogen, phosphorus, and potassium under turfgrass conditions and potential contribution to water pollution.
6. Influence of nitrogen-potassium balance on the hardiness and growth of three turfgrasses (with Beard).
7. Influence of nitrogen, compaction, and dethatching on the incidence of Fusarium on Merion (cooperative with Vargas).
8. Influence of rates and dates of application of nitrogen on the turfgrass composition of a Merion-Pennlawn mixture.
9. Evaluation of 48 soil mixes under putting green conditions.
10. Influence of nitrogen treatment on muck soil nitrate tests and sod development of Merion (English).
11. Determination of soil loss in sod production.
12. Influence of the soil arsenic-phosphorus balance on the growth of annual bluegrass (Carrow).

B. Projects Planned:

1. Evaluation of herbicide and fertilizer treatments on the persistence of annual bluegrass in Kentucky bluegrass turf (with Carrow, Beard and Turgeon).
2. Determination of the fertility requirements of annual bluegrass (with Beard).
3. Development of traffic simulator for use on turf plots (with Beard).

M. S. U. Turfgrass Weed Control Research

A. J. Turgeon and W. F. Meggitt

A. Current Projects:

1. Basis of selectivity of Endothall among various turfgrass cultivars.
2. Role of Endothall in annual bluegrass control.
3. Enhancement of herbicidal effectiveness through the addition of nonphytotoxic oil.
4. Evaluation of new herbicides and formulations on annual grass and broadleaved weed control.
5. Renovation of annual bluegrass fairways using preemergence and contact herbicides with cultural practices (with Beard).
6. Long term effects of preemergence herbicides on various turfgrasses (with Beard).

B. Projects Planned:

1. Reestablishment of quackgrass infested turf with non-selective herbicides combined with cultural practices.
2. Effects of Endothall on overseeded turf.
3. Herbicide-fertility study on annual bluegrass infested turfs on both muck and mineral soil (with Rieke).

C. Projects Terminated:

1. Evaluation of herbicides and vertical mowing on removal of bentgrass from a Kentucky bluegrass turf.
2. Effects of various herbicides, on seedling Kentucky bluegrass turf, for the control of broadleaved weeds.

C. Projects Terminated: (Continued)

3. Evaluation of various rates and spray dilutions of cacodylic acid in comparison with paraquat for chemical burnoff.
4. Control of creeping speedwell (Veronica filiformis) with Endothall and other herbicides.
5. Small plot sprayer development.
6. Evaluation of experimental and commercially available herbicides for annual bluegrass control.