## HUNGER SIGNS

The National Fertilizer Association, 616 Investment Building, 15th and K Streets, N.W., Washington, D. C., is revising the book, "Hunger Signs in Crops." It will be available at a later date.

A great deal of work has been reported (on the various food crops) supported by excellent color illustrations, but virtually no information is given on how to recognize hunger signs in the grasses. Recommendations for the nutrition of grasses largely are based on empirical data, observations and experience. Surely the grass family (of which corn and the cereals are members) must exhibit characteristic symptoms of malnutrition with respect to N, P, K, Ca, Mg and other nutritive elements if we but knew where and how to look for them.

A grass symptom of N starvation is a yellowing of the blades. In some species, this occurs after the starvation has become so acute that weeds already have gained a foothold. Phosphorus deficiency produces a purpling in corn leaves, but who has seen this in the minute blades of bentgrass?

Potash requirements in turf grasses are being studied at Pennsylvania State College and Purdue University; they offer some real hope in the future. Purdue University has reported excellent work on two bentgrasses (Notes: The Journal of the American Society of Agronomy, Volume 40, No. 3, March, 1948), with respect to Ca and P, but it is only a start.

Tissue testing is being explored with some promising indications, but it still is a laboratory procedure and has not gained a firm foothold among turf superintendents.

The Green Section supports the trend whereby the research workers in grasses pool their efforts from the forage and the turf standpoints. It has been our contention that the forage grasses, when mowed closely and frequently as turf is managed, exhibit their weaknesses more quickly and more prominently. In a study of the nutritional requirements of any single grass, it would appear that the growth requirements of that grass would be a constant factor, regardless of the use to which the grass would be subjected.

*Balanced nutrition* is the goal in the production of grass for whatever purpose it is used so that the full capabilities of the plant can be utilized to the maximum. Management of the grass always will be a particular problem of the purpose for which the grass is used.

## WHAT PRICE RYEGRASS?

A recent visitor to the Green Section office was Dr. Davies, Director of Agriculture, Canberra, Australia. A great deal of ryegrass has been imported from "Down Under" for use in the United States. Apropos of recent work reported in The Journal of the American Society of Agronomy (TIMELY TURF TOPICS, November, 1947, p. 2), the question of the use of ryegrass in permanent seed mixtures was raised. Dr. Davies stated that ryegrass has been eliminated from all mixtures of perennial species for turf in Australia.

Similar action is being contemplated by the Turf Committee of the American Society of Agronomy. The Green Section will welcome your experiences and your statements regarding the use of ryegrass (Italian, common or perennial) in mixtures with bluegrass, bents, fescues, Bermuda and other permanent species.

At the Beltsville Turf Gardens, the most troublesome weed is ryegrass, which volunteers in all plantings. The field where the turf plots are located once was seeded to ryegrass as a cover crop, and seed was allowed to mature.

Agronomists in Oregon and Washington, where ryegrass seed is grown, deprecate the use of ryegrass where turf is the objective. By no stretch of the imagination can ryegrass be considered a turf grass. It is a special-purpose grass and as such has a special place for winter turf, particularly in the South where the summer heat and the competition of southern grasses eliminate it completely after it has served its purpose. In mixtures with cool-

season grasses in the North, it appears to be little else than a detriment and a nuisance which defeats the purpose for which it was included—as a "nurse" grass.

A number of leading seed firms have eliminated, or plan to eliminate, ryegrass from the seed mixtures they sell. It appears to be a step in the right direction. If all seed firms would agree to act similarly, there no longer would be the need for competitive mixture, at low price but high cost, which would be green in five days. If protection of the new seeding is needed, a straw mulch, or similar material, would be cheaper and more effective and the resulting turf would be far more satisfactory to the user.

The Green Section will appreciate your vote on this question: "Should ryegrass be eliminated from mixtures of permanent turf grasses?"

Send your vote, YES or NO, on a penny post card to:

USGA Green Section
Plant Industry Station
Beltsville, Md.

Please give your name and address. Results will be tabulated and reported.

## INTERESTING READING

"Newsletter" for Iowa Greenkeepers, March, 1948. H. L. Lantz, Iowa State College, Ames, Iowa. Report of the 14th Annual Greenkeepers' Short Course.

"Putting Theory," by Leonard Crawley, London Daily Telegraph, in THE PROFESSIONAL GOLFER, March, 1948, p. 18. Golf course superintendents in the United States can well be proud. Of our courses, Mr. Crawley concludes: "Gentlemen, I wish we had your putting greens."

"Retiring President's Report" in the GREENKEEPERS' REPORTER, Vol. 16, No. 1, January-February, 1948, p. 2. This article by Mr. Farnham merits re-reading and a permanent place in every superintendent's files.

"Control of Fall Army Worm," by Glenn W. Burton, THE GREENKEEPERS' REPORTER, Vol. 16, No. 1, January-February, 1948, p. 50.

"Control of Soil Insects," by John C. Schread, THE GREENKEEPERS' REPORTER, Vol. 16, No. 1, January-February, 1948, p. 7.

"Chlordane Rates High in Insect Control Tests," by John C. Schread, GOLFDOM, March, 1948, p. 39.

"We Discuss Shady Lawns," in BLADES OF GRASS, XVII, and "Renovating the Established Lawn," The Lafkins Golf and Lawn Supply Corp., White Plains, N. Y.

## BERMUDA GRASS TEES

The following quotation is reprinted in its entirety from TURF NEWS, the official organ of The Heart of America Greenkeeping Association, Volume 2, No. 3:

"Like many other golf courses, we are continuously trying to improve the quality as well as the toughness of grass for use on grass tees. Tees at Hickory Hills Country Club receive quite a beating each season, and it is almost impossible to keep them covered with grass and maintain a worthwhile appearance.

"We have debated the wisdom of planting Bermuda grass as a means to improve the condition, but have been encouraged to do so by observing several large patches scattered over the course. The patches of Bermuda which we have on the course have been spreading quite rapidly, and have not experienced any winter kill whatsoever. It is dormant from November until May, and although it takes on a brown appearance during these months, it still makes a fairly good playing turf. Two strains of Bermuda have been found on the course. One is quite coarse and does not seem to mat very well, while the other is much finer and produces a closer mat. The appearance of this latter strain during the growing season is quite beautiful, and it is the one which we have decided upon for the tees which we are going to rebuild.

"Just what the outcome will be is for time alone to tell. Since we have never planted Bermuda, we have no idea as to how long it will take to root well and to grow into fine turf. As soon as the frost is completely out of the ground and growing has started in the Bermuda patches on the course, we will obtain stolons and go to work. It is hoped that in the next several months we will be able to report our results at one of the monthly meetings of the Greenkeepers."

(JOHN ARROWOOD, HICKORY HILLS COUNTRY CLUB, SPRINGFIELD, MO.)

## SLUDGE OR MANURE

The following quotation is from "Potash News Letter for Northeast Territory" No. 44, April, 1948, published by American Potash Institute, Inc.:

**"Is Sewage Sludge a Good Fertilizer?** Used at the rate of 20 tons annually for three years, sewage sludge was found to be not so effective as cow manure. When extra potash was applied with the sewage sludge, there was little difference in the crop-producing powers of these two types of material. This is to be expected since most of the potassium in sewage escapes with the water. Thus the potash content of the manure averaged nearly 1.2 per cent on the oven-dry basis, whereas that of sludge averaged .2 per cent, or only one-sixth as much. The nitrogen and phosphoric acid content of sludge averaged about 1.5 per cent each. (Science and the Land, New Jersey Ann. Rpt., 1944-45.)"