

marked toxicity to the seed evident when the arsenious acid was applied at the 6-pound rate.

The upper tolerance of Kentucky bluegrass for arsenious acid in these sand cultures was found to be the 3-pound rate, a single application at the 6-pound rate being sufficient to kill seed or seedlings of grass.

Considerably higher concentrations of arsenious acid are required to kill the growing point of the stem than to kill the leaves of Kentucky bluegrass.

Arsenious acid is more toxic to Kentucky bluegrass seed than to seed of certain common weeds. In some cases the latter appeared to be stimulated to germination by the heavy applications of arsenious acid.

THE FEDERAL SEED ACT

The new Federal Seed Act which became operative on February 5, 1940, should be of interest to all turf culturists for this new act is another step toward providing the intelligent buyer with the facts concerning his purchases.

Heretofore seeds of turf grasses have received little attention from the various legislatures. The Seed Importation Act of 1912 covered only the importation of certain agricultural seeds and, except for the ryegrasses, seeds of interest to turf growers were not included. Most of the states now have legislation covering the labeling and quality of the seed sold in the state but these laws are not uniform and buyers of grass seed in many states have had little or no protection.

The Federal Seed Act promises to bridge many of the gaps in the existing seed laws since it regulates both the importation

and the interstate movement of all of the major turf grasses.

The grasses of interest to turf culturists specifically mentioned in the Act are: *Agropyron cristatum*, crested wheatgrass; *Agrostis alba*, redbtop; *Agrostis canina*, velvet bent; *Agrostis palustris*, creeping bent; *Agrostis* spp., bent grasses, the latter would cover Colonial bent among others; *Cynosurus cristatus*, crested dogtail; *Festuca* spp., fescue; *Lolium multiflorum*, Italian ryegrass; *Lolium perenne*, perennial ryegrass; *Poa annua*, annual bluegrass; *Poa compressa*, Canada bluegrass; *Poa nemoralis*, wood bluegrass; *Poa pratensis*, Kentucky bluegrass; *Poa trivialis*, trivialis bluegrass (rough bluegrass); and *Trifolium repens*, white clover.

SEED MOVING IN INTERSTATE COMMERCE

The Act provides that agricultural seeds or any mixture of agricultural seeds for seeding purposes may not move in interstate commerce unless each container bears a label carrying correct information regarding the following:

1. The name of the kind, kind and variety, or the kind and type for each agricultural seed component present in excess of 5 percent of the whole and the percentage by weight of each kind.

Under this provision the label on turf seed mixtures must show the percentage of each kind present. It is not enough to say that the mixture consists of "5 percent or more" of each of certain specified seeds, as has so often been done in the case of lawn grass mixtures.

2. Lot number or other identification.
3. The origin of the seed, but this applies at present only to alfalfa, red clover, and corn.
4. Percentage by weight of weed seeds, including noxious weed seeds.

5. Kind of noxious weed seeds and rate of occurrence.

This must be expressed in accordance with, and shall not exceed, the rate allowed by the laws of the state into which the seed is to be sent. The Secretary of Agriculture may also determine that weeds, other than those designated by state seed laws, are noxious. It should be noted that weeds have been called noxious chiefly because of their effect in cultivated fields, though some are also noxious in turf.

6. Percentage by weight of agricultural seeds other than those included in paragraph 1 of this section.

7. Percentage by weight of inert matter. This includes dirt, chaff, and broken seeds.

8. For each agricultural seed in excess of 5 percent of the whole, the percentage of germination, exclusive of hard seed; the percentage of hard seed, if present; and the calendar month and year the germination test was completed. The germination test must have been completed within a 5-month period, exclusive of the month in which the test was completed, immediately prior to transportation or delivery for transportation in interstate commerce. The Secretary of Agriculture is authorized to fix a shorter or a longer period if he finds that desirable.

9. Name and address of the shipper or of the consignee or a code designation approved by the Secretary of Agriculture.

GENERAL PROVISIONS

Besides the labeling provision, the Act provides that it shall be unlawful for any person to transport or deliver for transportation in interstate commerce any seeds having false labeling, or pertaining to which there has been a false advertisement, or to sell or offer for sale such seed for interstate ship-

ment by himself or others. The use of a disclaimer or non-warranty clause shall be no defense against confiscation of seed found falsely labeled or transported contrary to the provisions of this Act.

Certain exceptions are made to the regulations outlined above. The one of possible interest to our readers exempts any farmer producing his own seed on his own premises provided he sells no seed but his own. A farmer shipping his own seed direct to the consumer in another state must, however, comply with any state seed laws governing the production and sale of seed within such state just as though the seed had been produced within that state.

IMPORTED SEED

While the old seed importation act is repealed, the provisions of that act are retained and strengthened in the new act. Various restrictions are made on the importation of undesirable seed, the one of interest to our readers being the prohibition of the importation of seed unfit for seeding purposes. Seed is declared unfit for seeding purposes if any such seed contains noxious weed seeds in excess of one noxious weed seed in each 10 grams of seed of various named species including those of *Agrostis*, *Poa*, or any kind of seed of a size and weight similar to, or less than those named; if such seed contains more than 2 percent by weight of weed seeds; or if such seed contains less than 75 percent of pure live seed.

This last provision is not mandatory as to the percentage since it is provided that when the Secretary of Agriculture finds that any such seed cannot be produced to contain 75 percent of pure live seed he may set up such standards as he finds can be produced. Under this provision the requirement for species

of *Poa* has already been reduced to a pure live seed content of 65 percent.

Provision is also made in the Act for the delivery under bond of seed for cleaning. If the cleaned seed meets the requirements of the Act it may be admitted.

The Secretary of Agriculture is given authority to make rules and regulations for its administration; and provisions for seizure, penalties, court procedure, and other administrative matters are made.

The Department of Agriculture has published in the Federal Register, Volume 5, number 2, for January, 1940, a complete set of rules, regulations, and orders covering the administration of the Act.

In brief, all seeds in which turf culturists are interested are covered by the Act. They may not enter interstate commerce unless labeled as provided, nor any imported seeds enter the country unless they meet certain requirements. These requirements are that each lot must contain at least 75 percent pure live seed, except that for the species of *Poa* this has been reduced to 65 percent; it must not be adulterated and must not contain more than one noxious weed seed in 10 grams (about 45 to the pound).

The labeling provisions of the Federal Seed Act do not differ materially from those in most state seed laws. Except in the case of imports, neither in the Federal nor in most state seed laws are definite minimum percentages of purity and germination required for turf grass seeds. The laws merely require that these fundamental facts about the seed be given and that the statements be true. It is then up to the buyer to use this information as he chooses in making his purchases.