These seedlings are about six weeks old. Note the differences in color and height. The Manhattan and Pennfine varieties are fine-leaved, shorter growing and darker green. Photo was taken by Dr. C. Reed Funk.

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with the production of seed to see that high standards are maintained in the various steps of production. This assures the ultimate consumer the best possible product when he seeds his turf. Seed testing is that step in production which critically examines the seed for physical impurities. This information appears by law on all containers being offered for sale.

To the extent possible, seed analysts examine the seed for mixtures of other similar kinds of seed. For the best assurance one should use certified seed. Under such a program, a certification agency carefully documents the pedigree of the seed and supervises the growing conditions to prevent outside contamination. It provides an unbiased person to keep a check as the crop is growing.

Once the seed is harvested, cleaned, and in the bag, a sample is drawn and sent to a seed testing laboratory for a detailed analysis. Some seeds or seedlings have characteristics which differentiate them from other kinds. This becomes a useful laboratory method of detecting contamination. The fluorescence of annual ryegrass roots when observed under ultraviolet light is one of these characteristics.

Generally, perennial ryegrass roots do not fluoresce under the same light. Consequently, these two kinds can be separated on this basis at a very early stage of their development.

Four hundred seeds are planted on white filter paper and provided optimum conditions for germination. Complete germination is usually accomplished within fourteen days. The roots of these same germinated seedlings are observed under ultraviolet light and recorded as a percent of fluorescence or non-fluorescence. This information is then calculated into the purity reflecting any contamination which may be present.

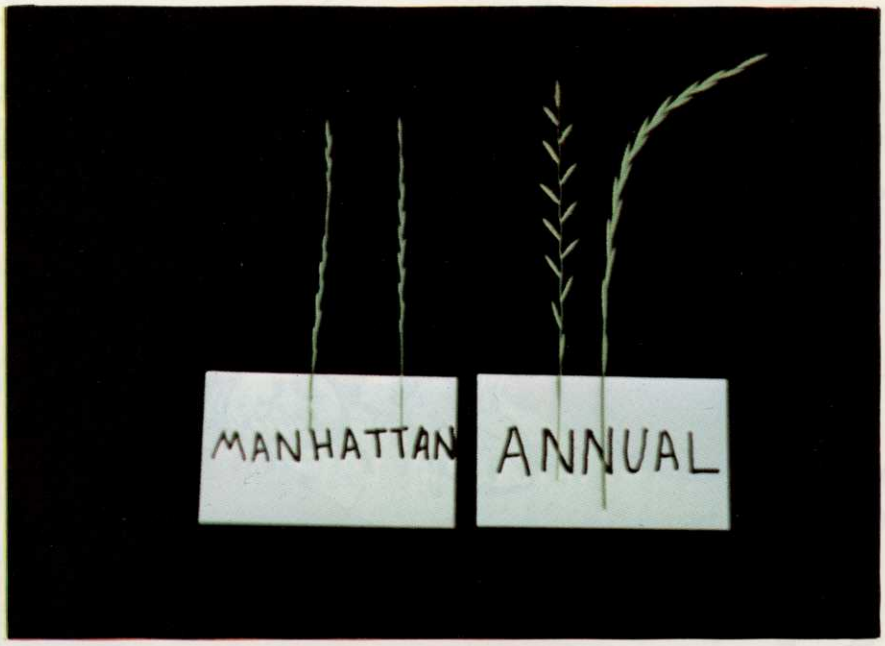
New ryegrass varieties being developed do not necessarily exhibit this same fluorescence, but exhibit their own characteristic pattern. This pattern remains useful because once it is established it remains relatively constant, acting similar to a finger print. Any deviation from this pattern indicates the presence of contaminants. All of which provides us with more tools in our endeavor to provide information which allows the ultimate consumer the opportunity to buy the quality of seed he desires.

Flourescence And The Federal Seed Act

By C. R. Edwards

Conscientious seed producers take a great deal into account when producing certified seed especially of the new turf-type perennial strains. It is, however, also evident and relatively easy for less discriminating growers to produce noncertified

(continued on page 58)



Comparison of Manhattan perennial ryegrass and annual ryegrass. Note that the Manhattan is finer-leaved and not as tall as the annual ryegrass. The annual variety is generally light green and stands more erect making excellent hay or forage. Photo is by Dr. C. Reed Funk.

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seed of some of the new unprotected strains under conditions much less than desirable, with the end results being the production of noncertified varieties containing contamination from *L. multiflorum* either from crossing because of pollen sources to close to the seed production field, or from physical contamination of *L. multiflorum* actually being produced in the same field.

Although it is not mandatory to express the percentage of fluorescence or non-fluorescence on the purity analysis label, the expression of the percentage of fluorescence may be of value to the seed handler, the dealer, or the ultimate consumer. If contamination exists and is not expressed on the purity analysis label, violations of the various state seed laws or the Federal Seed Act may exist.

Generally, perennial ryegrass, as one of its characteristics, contains a small percentage of fluorescent seedlings; most of the seedlings are non-fluorescent.

When dealing with such perennial ryegrass, do seed law enforcement officials consider the small percentage of fluorescent seedlings to be perennial ryegrass? Yes.

Under Federal Seed Act testing rules, allowance is made for that small percentage of fluorescent seedlings. They are considered to be perennial ryegrass.

But, what if a breeder develops a new variety of perennial ryegrass which, as one of its characteristics, has totally non-fluorescent seedlings? Manhattan perennial ryegrass is such a variety. None of the seedlings are fluorescent.

What would Federal Seed Act officials do if, in their enforcement work, they tested a sample of seed labeled Manhattan, but found some fluorescent seedlings? Such fluorescent seedlings would not be considered Manhattan. In calculating the percentage of Manhattan perennial ryegrass, all fluorescent seedlings would be excluded. If the percentage of Manhattan, as so calculated, was beyond the tolerance that Federal Seed Act officials must apply, the seed would be falsely labeled.

Revised Tree Ordinance Booklet Now Available

The International Shade Tree Conference, Inc. has recently revised the publication entitled "A Standard Municipal Tree Ordinance".

This fourteen-page booklet contains information of value to persons and municipalities who are interested in creating, revising, and improving municipal ordinances relative to the planting, maintenance, and preservation of shade and ornamental trees.

To obtain the publication, send request and prepayment of $1.00 per copy to the International Shade Tree Conference, Inc., P. O. Box 71, Urbana, Illinois 61801.