

Fusarium Center collects, studies fungus

UNIVERSITY PARK — The world's largest collection of a fungus called Fusarium, used in studies of plant diseases, is stored at the Fusarium Research Center of Penn State.

Specimens have come in from distant lands, including Australia, New Caledonia, Africa, South America, Southeast Asia, and even central China — in addition to various parts of the U.S.

All cultures of the fungi are kept alive by freeze-drying and are stored at minus 40° Fahrenheit in special vials. That's the only way a collection of living organisms in such magnitude can be tended, according to T.A. Toussoun and P.E. Nelson, plant pathologists in charge. As frozen cultures, the fungi are inactive until grown out again at room temperature.

Habits of various fungi are diverse. Some are aggressive organisms that will attack and kill plants. Some will infect tomatoes only and no other plant. Such fungi are called "host specific."

These fungal organisms attack a number of plants such as coffee, banana, maple, pine, citrus, wheat, corn, carnation, turfgrass, potato, cabbage, cotton, watermelon, bean, flax, alfalfa, pea, tobacco, radish, soybean, clover... the list goes on and on.

Some Fusarium species prefer to grow on stored grain and other types of feed. These can produce spoilage leading to the production of mycotoxins, especially under humid storage conditions or when

drying is incomplete.

When eaten, toxic products of such fungi may lead to abortion in cattle, affect egg laying in poultry, and may cause death. Many people died in Russia during World War II from eating spoiled grain.

Human afflictions can occur in other ways, the Penn Staters noted, such as infections of the nails and of the skin and eyes. Infections known as "mycotic keratitis" of the eyes must be diagnosed and treated promptly, since the danger of losing vision is great.

Hospitals across the nation send many cultures of Fusarium species to Penn State for diagnosis. The collection also houses cultures that infect marine turtles, lobsters, and shrimp. And there are countless other specimens about which nothing much is known other than that they exist in a certain habitat in a particular corner of the world.

Toussoun and Nelson decided many years ago that the Fusarium Research Center was needed if scientists wanted to understand and come to grips with this vastly diverse array of fungi. Established in 1970, the Center provides an identification service free of charge to scientists and physicians studying fungi, plant diseases, and the biology of a fungus.

The Center also authenticates cultures for use by scientists who need specific strains or cultures. This is important for researchers who are breeding plants for disease resistance — or who want

to test chemical or biological control programs against specific disease — producing fungi.

In addition, scientists can store Fusarium cultures at the Center. Fusarium species are notoriously variable, it was pointed out, and are difficult to keep in culture for extended time due to frequent mutations which can alter radically their appearance and behavior.

In 1978 a contract was received from the U.S. Food and Drug Administration. Under this contract a book on identification of

Fusarium species was published in 1983, and a book on toxigenic Fusarium species will be published in 1984. Both books will be published by the Penn State Press. In addition, the International Toxic Fusarium Reference Collection was established which contains several hundred known toxigenic strains of Fusarium species.

Personnel of the Fusarium Research Center are active in research. Some of the studies involve other scientists at Penn State and elsewhere. Cooperative

programs have been carried out with or are underway with personnel in the Pennsylvania Department of Agriculture; the University of Sydney, Australia; the University of Florida at Bradenton; Cornell University; and the South African Medical Research Council.

The address for the Fusarium Research Center at Penn state is 211 Buckhout Laboratory University Park, PA 16802. Telephone calls may be made to 814-865-9773.

Longwood fellows named

NEWARK, Del. — Five persons have been awarded fellowships for graduate study in the Longwood Program in Ornamental Horticulture. A cooperative program of the University of Delaware and Longwood Gardens, it is the only graduate program in the nation that specializes in training professional managers for horticultural institutions.

Kate Dragolovich, Kensington, Cal., is currently completing a master's degree in horticulture at the University of California at Davis.

Robert Halpern, Great Neck, N.Y., is presently a student of horticulture and landscape design

at Temple University in Philadelphia, where he is also a groundskeeper.

Kristine Medic, Abington, Pa., holds a bachelor's degree in ornamental horticulture from Purdue University. A member of Xi Sigma Pi national forestry and wildlife honorary society, she is now completing a year as an urban forestry intern at the Morris Arboretum in Philadelphia.


Maureen Murphy, San Diego, Cal., is now the landscape supervisor at a resort in Hawaii.

Sarah Price, State College, Pa.,

is associate editor of "Organic Gardening" magazine. She holds a bachelor's degree in botany from the University of Michigan. She once served as an apprentice to the herb gardener of the United Society of Shakers at Sabbathday Lake, Maine.

Since the inception of the Longwood graduate program in 1967, more than 60 fellows have earned master's degrees and are now employed by arboreta and botanic gardens as directors, horticulturists, educators, public relations specialists and curators

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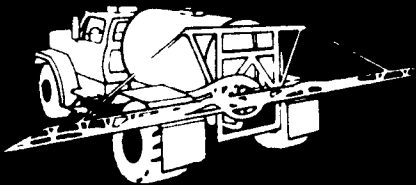
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