Health and Safety

You know you've been at it too long when you start repeating yourself. Checking back through past issues of FNN, I found sections on sporotrichosis and carpal tunnel syndrome back in January and July of 1988. Well, these health and safety issues haven't gone away, but I'm not sure that they've gotten any worse either. What has gotten worse, and much more expensive, is the cost of managing them—primarily due to a recent flurry of Workers' Compensation Claims.

Sporotrichosis

This rather rare skin disease, which is caused by the fungus *(Sporothrix schenckii),* has been around since the turn of the century, but has recently been causing an increasing number of problems in forest and conservation nurseries. One epidemic of sporotrichosis cost over $11,000 in Worker's Compensation claims and associated expenses, and a recent outbreak among tree planters in Nebraska lead to a Natural Resource District being faced with a $75 million lawsuit. Many nursery managers have, or are considering, eliminating the use of sphagnum peat moss in their nurseries. A recent national directive from the USDA Forest Service Health and Safety Code Handbook stated that Forest Service nurseries should "not use soil amendments containing pathogenic microorganisms. This prohibition applies especially to fresh, nondecomposed sphagnum moss that is often infested with *S. schenckii.*

Is all this concern justified? Is the sporotrichosis fungus becoming more virulent, or is this just one more symptom of our litigious society?

The fungus causing sporotrichosis has been identified in many different types of organic matter that can normally be found around a nursery. Unfortunately, peat moss of the *Sphagnum* genus has been identified as the causal agent in several recent nursery-related cases of this disease. Although *S. schenckii* has never been isolated directly from a peat bog, it has been cultured from bales of bulk peat moss used for packing bareroot seedlings, and one study found the fungus in 2 out of 12 brands of commercial growing media. It has been reported that *S. schenckii is* most common in peat moss from the Lake States and Wisconsin in particular.

The fungus develops and spreads after the moss is processed. Storage of moss under warm, moist conditions allows the fungus to proliferate, and it apparently thrives in the moist environment that exists in nursery packing sheds. Clinical cases of sporotrichosis are relatively uncommon considering the number of people that are regularly exposed to sphagnum moss, but epidemics of sporotrichosis have been documented in several states including Mississippi, Florida, Vermont, and Oregon.

The most common form of sporotrichosis develops after the spores of the fungus are introduced into skin wounds. Punctures involving organic materials, such as thorns or splinters, are particularly . suspect. The hands or arms are most commonly affected first, and small painless skin blisters develop after several weeks **(Figure M).** *Many different things, including allergic reactions, can cause these symptoms, so you should only become concerned if the blisters are persistent, and do not respond to normal therapy.* The lesions may turn into a firm, movable subcutaneous nodule, and skin color often becomes pink or purplish. If left untreated, the disease can spread throughout the lymph system causing glands in the elbow or armpit to become swollen and sore.

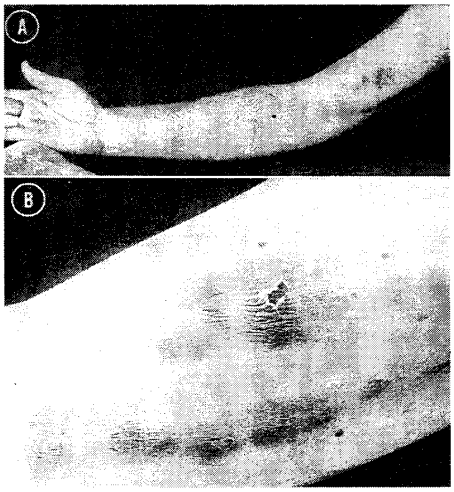

Figure M: The fungus causing sporotrichosis enters the skin through wounds and causes small blisters that do not respond to normal antibiotics (from Emmons and others 1970)

Regardless of these striking symptoms, sporotrichosis is not a serious disease if promptly diagnosed and treated. The problem is that many physicians are unfamiliar with the disease and may misdiagnose it. And, the longer the disease remains untreated, the longer and more complicated the treatment becomes. Sporotrichosis can be cured with oral doses of potassium iodide or antibiotics for advanced cases, and the treatment must continue well past the time that all symptoms have disappeared.

Both nursery workers and tree planters must be aware of sporotrichosis, because many of the most recent cases involved people handling seedlings after they left the nursery. This incidence, and especially the severity of this disease, can be eliminated by some rather simple precautions:

- Make discussions about sporotrichosis a regular part of nursery safety sessions, especially before lifting and packing season, container filling operations, and other times when workers will be in frequent contact with peat moss and other organic materials.

- Buy peat moss in waterproof bags, and only order enough for immediate needs, storing it under dry conditions. Keep all moss storage and work areas as clean and dry as possible.

- Workers in contact with peat moss should wear clothing that minimizes the chances of skin punctures and subsequent infection. Gloves and long-sleeved shirts are recommended. Basic hygiene will greatly minimize the chances of infection, so wash hands and arms thoroughly after exposure to peat moss and treat any skin wound with a disinfectant. Exposed workers should inspect their hands and arms daily and report any suspicious infections immediately.

- Information about the risk of sporotrichosis also should be provided to nursery customers, perhaps as part of seedling handling instructions.

I personally believe that there is little justification to ban the use of *Sphagnum* peat moss since nursery workers are regularly exposed to soil and a wide number of other organic materials which could harbor the sporotrichosis fungus. Fresh *Sphagnum* moss has many desirable properties for packing bareroot seedlings (low pH, high water-holding capacity, good aeration), and processed *Sphagnum* peat is the principal component of growing media for container seedlings. Serious cases of sporotrichosis could be greatly reduced if a few simple precautions are followed.

Sources:

Anonymous. 1987. Sporotrichosis, a skin disease caused by the fungus Sporotrichum schenckii. Ornamentals Northwest Newsletter 11(3): 8.

Emmons, C.W.; Binford, C.H.; Utz, J.P. 1970. Medical mycology. Philadelphia: Lea and Febiger. 508 p.

Kenyon, E.M.; Russell, L.H.; McMurray, D.N. 1984. Isolation of Sporothrix schenckii from potting soil. Mycopathologia 87: 128.

McDonough, E.S.; Lewis, A.L.; Meister, M. 1970. Sporothrix (Sporotrichum) schenckii in a nursery barn containing Sphagnum. Public Health Reports 85(7): 579-584.

Padhye, A.A.; Ajello, L. 1990. Sporotrichosis - an occupational hazard for nursery workers, tree planters, and orchid growers. American Orchid Society Bulletin 59(6): 613-616.

Powell, K.E.; Taylor, A.; Phillips, B.J.; Blakey, D.L.; Campbell, G.D.; Kaufman, L.; Kaplan, W. 1978. Cutaneous sporotrichosis in forestry workers: epidemic due to contaminated Sphagnum moss. Journal of the American Medical Association 240(3): 232-235.

Scholtes, JR. 1994. Letter to Forest Supervisor, Rogue River National Forest about Health and Safety Code Handbook (Oct. 14, 1994: File 6700). Central Point, OR: USDA Forest Service, J. Herbert Stone Nursery. 3 p.

Skilling, D.D. 1983. Sporotrichosis - a disease hazard for nursery personnel and tree planters. Tree Planters' Notes 34(4): 8-9.