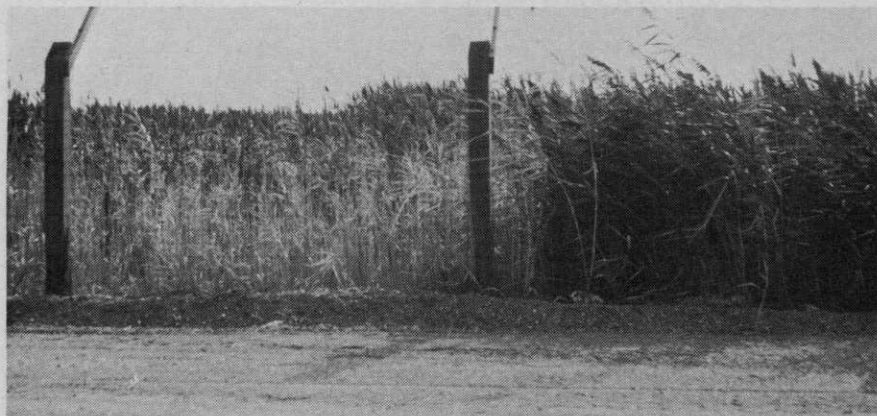


Long Range Weed Control Programs For Improved Environment

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Left side of forest road is treated with Tandex® in test program to study effectiveness, and chemical movement. Photo three months after treatment.



Effect of residual acting (root-absorbed) Tandex® herbicide on tough phragmites weeds, left. Untreated weeds at right continue growth.



Difficult to control phragmite species, which thrives in marshy areas, present fire hazard in southern New Jersey. Effective measures have long been sought.

A SERIES OF WEED CONTROL development programs that may hold the answer to some of the environmental problems plaguing the country are now being conducted by FMC Corporation's Niagara Chemical Division in cooperation with various government agencies and private concerns.

The programs are aimed at establishing effective and practical techniques for treatments with a recently developed herbicide called Tandex® which has been found unusually effective in controlling many different kinds of weed species including difficult-to-kill woody plants.

The compound was cleared two years ago by the U. S. Department of Agriculture for a broad spectrum of non-crop uses. It has already shown high potential as a herbicide treatment for industrial sites, highway shoulders, railroad rights-of-way, parking lots, and military and airport installations.

Some of the studies now underway, however, extend far beyond these specific applications. They embrace not only new practices in disease and insect control, conservation and forestry, fire prevention, and halting the rapid spread of noxious weeds but also more efficient ways of applying herbicide materials.

Among the programs now in various stages of evaluation, based on Tandex treatments, the following have been disclosed by Niagara Chemical:

- **Rangeland Improvement**—Treatments at carefully controlled rates and in set patterns are being made to eliminate brush and broadleaf weeds while "releasing" desirable grass species—allowing these grasses to grow and spread for livestock forage and silage harvesting. Its unusually low order of mammalian toxicity makes Tandex of special interest in applications such as this.

Another program that is expected to receive attention is the use of weed controls in wildlife management—to improve existing environmental conditions for wildlife.

- **Forest Fire Control**—Eliminating the understory of brush, small trees and vegetation while leaving unharmed the remaining overstory—a desirable practice in forest management—is being undertaken with Tandex sprays. In the event of fire, this practice tends to trap airborne sparks and embers beneath the overstory, hence minimizing their spread.

The establishment of firebreaks

and fire areas with higher use levels of the herbicide is also being examined. Effectiveness and persistence of the control, safety, and chemical movement on or within the soil are among the factors being studied.

• **Other Forestry Practices**—Control of vegetation on forest roads with chemical treatments is being tested. These roads, which are often populated with small to moderately sized brush and young trees along their rights-of-way, serve not only as access routes but in some cases as firebreaks and back fire areas.

Usage rates that will allow the treated sites to be reforested when planning so indicates are another aspect of the program. The tolerance of forest transplants to chemical residues over a period of time is being established.

• **Disease Control**—Chemical treatments are also being developed to eradicate, at practical levels, woody species that serve as alternate hosts of certain fungous diseases. These include *Berberis* (barberry) species which harbor wheat stem rust and *Ribes* (currants and gooseberries) species that host white pine blister rust.

• **Mosquito Control**—Phragmites, a hard-to-kill reed that populates marshy areas, is the breeding home of many mosquito species. Control programs that can eliminate this weed economically and hence upset the conditions under which these insects thrive are being explored.

The effectiveness of Tandex in curbing Phragmites also suggests uses as a control of semi-aquatic vegetation in man-made waste lagoons and swamp areas. Test work in the eradication of difficult-to-kill weed species in sewage lagoons has been established in the midwest with outstanding results.

• **Stopping Noxious Weeds**—Noxious weeds have become real problems in many parts of the country. They multiply and are rapidly disseminated so that some states have passed laws requiring land owners to control these pests. Leafy spurge, a noxious weed common to North Dakota, is a typical example of the problem these species pose. It was first identified some 60 years ago growing in a Fargo, N.D., street. Today it is one of the state's most persistent and noxious weeds and infests over half a million acres of land.

Spot treatments of Tandex that can be applied by convenient hand shaker have just been introduced by

Niagara to combat such species while they are still small clumps of vegetation—in fields, farm roads, along ditch banks and similar non-crop areas which, left untreated, could develop into major weed-breeding grounds.

Special application techniques have included the use of grid treatments to apply Tandex in pre-determined patterns to eliminate brush and other undesirable vegetation by vertical percolation (downward but not lateral movement in the ground). Such applications would

allow certain grasses to spread over and around the treated areas for not only rangeland and forestry programs but also beautification of undeveloped areas.

Tandex is commercially available as an 80% wettable powder (80 WP) and 4% granular (4G) material for either pre-emergent or post-emergent treatments. Experimental formulations in pill and pellet form that would simplify spot treatments and eliminate drifting or blowing of material are being investigated by Niagara Chemical.

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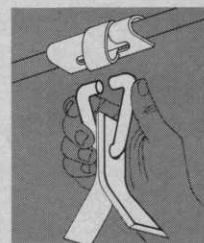
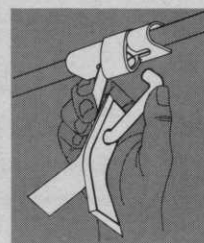
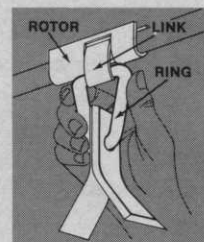
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