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The University of Dayton

News Release

March 13, 1991
Contact: Jim Feuer

UD RESEARCHERS' TIME-RELEASE FERTILIZER BETTER FOR GROWTH AND SAFER FOR ENVIRONMENT

DAYTON, Ohio -- University of Dayton researchers have developed a time-release fertilizer that is safer for the environment, provides better growth than current products and makes fertilizing the lawn a once-a-year job.

"The big advantage is that it's tailored to the growing season, so you only need a single application," says Richard P. Chartoff, professor of materials engineering at the University of Dayton and senior research engineer at the University of Dayton Research Institute. Chartoff led the research team that developed the fertilizer.

"You can tailor it to the crop you're growing so that it releases the nutrient at the rate at which the plant can use it. It not only provides optimum growth but also reduces the amount of runoff into the soil so that it minimizes the amount of nitrogen that leaches into the water table."

To make the polymer (plastic) coating, the researchers developed a process that involves covering urea fertilizer granules with a liquid and then spraying them with a gas that instantaneously turns the liquid into a plastic.

This plastic "allows time-release diffusion of the fertilizer out of the shell," says Chartoff.

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"When it's all done, what you have left is a little plastic shell with nothing in it. And the shell is degraded in a matter of months."

The coating was tested successfully by O.M. Scott & Sons, a major fertilizer company based in Marysville, Ohio, that has an option to obtain rights to the technology. Scott provided \$56,000 for research and testing, and another \$50,000 came from the state of Ohio's Edison Seed Development Fund.

Agronomists tested the coating by placing measured amounts of fertilizer into flowerpots containing grass. They added fixed amounts of water at given time periods then clipped the grass as it grew and weighed it.

"Ours grew uniformly, and the growth continued over a long time period," says Chartoff. "And the color was excellent. It was nice and green over the entire time period. The thing that happens with fertilizer is that if you get too much or too little, the grass turns yellow--it doesn't look good. It's easier to make a mistake with ours than with other products, because there's less chance of burning out your lawn due to excessive fertilization."

High costs may limit the market for such a product to lawns, says Chartoff. But UD is developing new technologies that one day "could make it cheaper, and this could easily be carried over to the farm market for agricultural purposes," he says.