

Better, Faster Ag Airplane Is Hope of U. of Cal. Team

An agricultural airplane that squirts fertilizer, seed, or pesticide rearward out of its wings will be test-flown within a few months, according to reports from the Agricultural Extension Service, University of California, Davis.

The new concept of aerial application, using a separate engine to blast air backward out of a long slot in the upper trailing edge of the wing, was developed by University of California agricultural engineers. They have two goals: To spread more dry material in less time and to better control distribution patterns.

These goals, of course, could reduce overhead expenses, and thus increase profits, for custom aerial applicators.

Ground tests of the new "controlled-distribution" wing have encouraged UCD engineers, Norman Akesson and Wesley Yates. The plane itself, as well as the flight design of the wing, is the brainchild of Kenneth Razak, dean of the University of Wichita (Kansas) college of engineering. Razak heads a private group now building a prototype plane for flight tests in Northern California late this year.

The new wing, with internal ducts delivering a precisely controlled stream of air outward along most of its length, is designed for:

1. Faster and more efficient spreading of fertilizers and other dry material. By forcing the material out with the stream of air, tremendous volumes—as high as 50 lbs. per second—are possible. This, the engineers predict, will permit operating speeds up to 140 miles per hour. The wide swath made possible by delivery through the wing will also boost acreage per hour, the California report maintains.

2. More uniform spreading of both dry material and sprays. By controlling pressure and distribution of the air jet, as well as flight speed and other factors, the engineers can lay a relatively even blanket of material across the ground. If necessary, the rearward air flow can be adjusted to match the plane's

speed—so dry material can be launched into the air without forward motion, to be spread and carried onto the ground by whirling vortices of air pressure created by the plane and the air jet.

These advantages give the new plane, which is only slightly larger than the familiar Stearman biplane, about twice the Stearman's potential productivity in acres per hour, the report concludes.

Are Nitrogen Fertilizers Acid Forming? CAs Ask

Frequently contract applicators ask whether or not nitrogen fertilizers are acid forming. It all depends on the source of the nitrogen, according to researchers at the University of Maryland Extension Service.

Many different sources of nitrogen are used successfully on crops, including turf, Dr. James R. Miller, Maryland Department of Agronomy head reports. These include anhydrous ammonia, ammonium nitrate, ammonium sulfate, calcium cyanamide, nitrogen solutions, sodium nitrate, urea, and others.

Many of the nitrogen fertilizers used on crops are indeed acid forming. However, when one considers the amount of nitrogen applied to most crops, the acidity is small and can be corrected with a good liming program. For example, for each 20 lbs. of Nitrogen (N), supplied from anhydrous ammonia, ammonium nitrate, or nitrogen solutions of urea, it takes 36 lbs. of lime (calcium carbonate) to neutralize the acidity created by the fertilizer.

Suppose 60 lbs. of nitrogen is applied per acre, Dr. Miller says. This means that 108 lbs. of lime would be required to neutralize the acidity formed by the nitrogen compounds mentioned immediately above.

The nitrogen fertilizers that are basic forming (opposite of acid) include calcium cyanamide, calcium nitrate, potassium nitrate, and sodium nitrate. For example, an application of 60 lbs. of nitrogen from calcium

Meeting Dates



American Association of Nurserymen Annual Convention, Statler-Hilton Hotel, Boston, Mass., July 18-22.

Southern Nurserymen's Assn. Meeting, Queen Charlotte Hotel, Charlotte, N.C., Aug. 2-4.

Wisconsin Park and Recreation Society Meeting, McKay Nursery, Waterloo, Wis., Aug. 13.

Rutgers University Turfgrass Field Days, New Brunswick, N. J.: Lawn and Utility Turf, Aug. 12; Golf and Fine Turf, Aug. 13.

International Shade Tree Conference, Shamrock Hilton Hotel, Houston, Tex., August 15-21.

Iowa Nurserymen's Assn. Meeting, Town House, Cedar Rapids, Iowa, Aug. 20-21.

Florida Turf-Grass Assn. 12th Annual Turf Conference, Gainesville, Aug. 25-27.

National Agricultural Chemicals Assn. Annual Convention, The Greenbrier, White Sulphur Springs, W.Va., Sept. 8-11.

Midwest Regional Turf Foundation Field Days, Purdue Univ., Lafayette, Ind., Sept. 14-15.

Ohio Agricultural Experiment Station, Lawn and Ornamentals Day, Columbus, Ohio, Sept. 15.

Illinois Turfgrass Foundation Field Day, University of Illinois, Urbana, Sept. 18.

Society of American Foresters Annual Meeting, Hilton Hotel Denver, Colo., Sept. 27-30.

Central Plains Turf Grass Foundation Meeting, Umberger Hall, Kansas State University, Manhattan, Oct. 21-23.

Northwest Chemical Applicators Assn. Annual Conference, Chinoook Hotel, Yakima, Wash., Nov. 30-Dec. 1.

cyanamide forms basicity (base) equivalent to 171 lbs. of lime. In the case of sodium nitrate, the same amount of nitrogen forms basicity equivalent to 108 lbs. of lime.