$200 a ton fertilizer, shortages predicted soon

COCKEYSVILLE, MD. — Some 900 farmers and agribusiness representatives streamed into Marriott's Hunt Valley Inn on January 3 to take a look at "A New Era In Agriculture - 1980", theme of the sixth annual Mid-Atlantic No-Till Conference.

Widely popular among growers from several states, the conference was strictly limited this year to a pre-set number of reservations and dozens of interested farmers were disappointed when tickets ran out.

Topics covered during the day-long session touched on a broad range of crops successfully no-tilled, innovations in machinery and updates on the energy and fertilizer situation.

One featured speaker of the morning session was Edwin M. Wheeler, president of the Fertilizer Institute. In a hard-hitting presentation, Wheeler forecasted spiraling fertilizer costs, up to $200 per ton in the near future, praised the farm segment's productivity and poked a few punches at bureaucrats.

"The most untapped energy source in the entire country is Washington, D.C.," he reckoned, "While the biggest political problem in the U.S. is us."

Wheeler warned the growing population around the world will increasingly be restive for food, not content with three meals of starches but demanding high protein meats.

Countries like Japan, the Soviet Union, and the Eastern European nations, Wheeler insists, "couldn't begin to feed themselves even if God gave them the best possible weather."

"And the only place they'll find it is in the world's largest supermarket, the United States," he added. One out of every three acres of American grain production now goes for foreign exports.

World grain production is down 70 million metric tons, a situation that the fertilizer specialist admits has "everyone scared to death." Because of that, grain growing countries are gearing up for all-stops-pulled production and resulting orders for record tonnages of fertilizer will cause the price to go right through the ceiling.

"Fertilizer is and will continue to be a substitute for land," he added, and farmers can expect that the demand will only worsen.

Urea nitrogen products are especially energy intensive, and thus fertilizer production only aggravates the already tight energy supply. For instance, 40,000 cubic feet of natural gas are required to produce just one ton of ammonium fertilizer. In 1968, a thousand cubic feet of the gas cost a mere 20 cents. With price deregulation taking effect, that cost has climbed to two dollars per thousand; and Wheeler projected that under full deregulation the cost will climb to five dollars by 1985.

Because of the ever-tightening costs and shortages of vital crop inputs, including land scarcity, Wheeler foresees no-tillage as one of the answers to feeding the world using minimal resources to do so.

"It takes less oil to make a gallon of pesticide than it does to cultivate," he noted, while warning that farmers must also learn to more efficiently no-till while using less fertilizer to reap the same acreage yields.

Fuel availability come the Spring planting season will be another problem he said, as well as a rapidly increasing expense. Diesel fuels alone are expected to rise at least 19 cents per gallon during 1980. If fuel stocks get short, farmers can expect their priority rating to diesel and gas to be restored, but spot shortages are very likely, especially if the weather breaks all at once across the grain-intensive Midwest.

Another mounting problem, not crucial yet in the mid-Atlantic area, is the diminishing ground water supply. Deep water wells in the irrigation sections of the Western and Midwestern states are not recharging and Wheeler foresees the day of "cheap, plentiful water are gone."; Tens of thousands of acres of land may eventually come out of production and cost of the remaining water supplies will escalate.

"Overhead pivotal systems will be outlawed by the end of this decade because of the wasteful evaportation losses," he added, "And urban voices will prevail over those of the farm because there are more of them."

"But, the upcoming years will finally see farmers taking their "rightful place in the world," he concluded, "And maybe the public will finally decide that it's no crime for the farmer to make a profit."

Before, after and during breaks in the sessions of the conference, farmers jammed the display room filled with booths and representatives from seed, fertilizer and machinery companies. Planners for the popular conference included a host of agricultural extension agents and specialists from Pennsylvania, Maryland, Delaware, New Jersey, Virginia and West Virginia and numerous industry representatives. Committees are already at work making plans for next year's no-till confab, scheduled for January 8, 1981, in Lancaster. - JB

No-till report stresses nitrogen needs

COCKEYSVILLE, Md. — Despite a bumper crop, numerous cases of nitrogen-deficient corn were observed in conventional tillage fields during the 1979 growing season throughout the Mid-Atlantic area.

The telltale yellow lower leaves were especially prevalent on light, sandy soils, according to V. Allan Bandel, extension fertilizer specialist and professor of agronomy at the University of Maryland in College Park.

Bandel spoke on "Recent Findings in Field Research" during the sixth annual Mid-Atlantic No-Till Conference last Thursday at Marriott's Hunt Valley Inn north of Baltimore.

He has been involved for six years in a cooperative study with U.S. Department of Agriculture soil scientists from Beltsville, Md., on nitrogen levels in no-till corn production at several Maryland locations

One of the concrete findings from this study was the fact that no more nitrogen is required for no-till corn production than for corn produced under conventional tillage systems—when the nitrogen is applied at rates recommended for practicable high yields.

The Maryland agronomist cited various methods of applying nitrogen to corn under field conditions and the several forms in which it may be applied.

Liquid application methods include overhead irrigation and between-the-row dribbling. Dry application methods include broadcasting, banding and knifing-in between the rows. This latter technique produced the best results in Maryland field trials during 1979.

Formulations in which nitrogen may be applied include ammonium nitrate, diammonium phosphate (DAP) and urea. The latter material may be applied in solid form, such as prilled urea, or it may be applied in liquid form, such as urea ammonium nitrate solution.

Bandel commented that a complete row fertilizer—containing nitrogen, phosphorus and potassium—worked especially well in getting corn off to a good start in 1979 because of cool weather during the early part of the growing season. And this fast start proved to be a plus at harvest time.

He noted that surface-applied urea is less efficient than urea which is incorporated well into the soil. This is because urea is a fairly volatile substance that readily breaks down in water, carbon dioxide and ammonia.

When urea is lying on the soil surface, some of these compounds tend to dissipate into the air, causing nutrient losses.

Bandel and his fellow agricultural research workers have concluded that ammonium nitrate is superior to urea as a nitrogen source under most no-till conditions.

But they admit that more research is needed in order to better understand how to utilize the available nitrogen in urea, both in its dry form and in urea ammonium nitrate solution.

As evidence of how improved technology and agricultural research have boosted U.S. corn production during the last half century, Bandel cited these average state corn yields for Maryland in selected years:
1928 - 31 bushels per acre;
1938 - 36 bushels per acre;
1948 - 45 bushels per acre;
1958 - 62 bushels per acre;
1968 - 66 bushels per acre;
1978 - 97 bushels per acre;
1979 - 101 bushels per acre.

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The nation's non-metropolitan counties gained 2.3 million people between 1970 and 1976, growing faster than the cities.