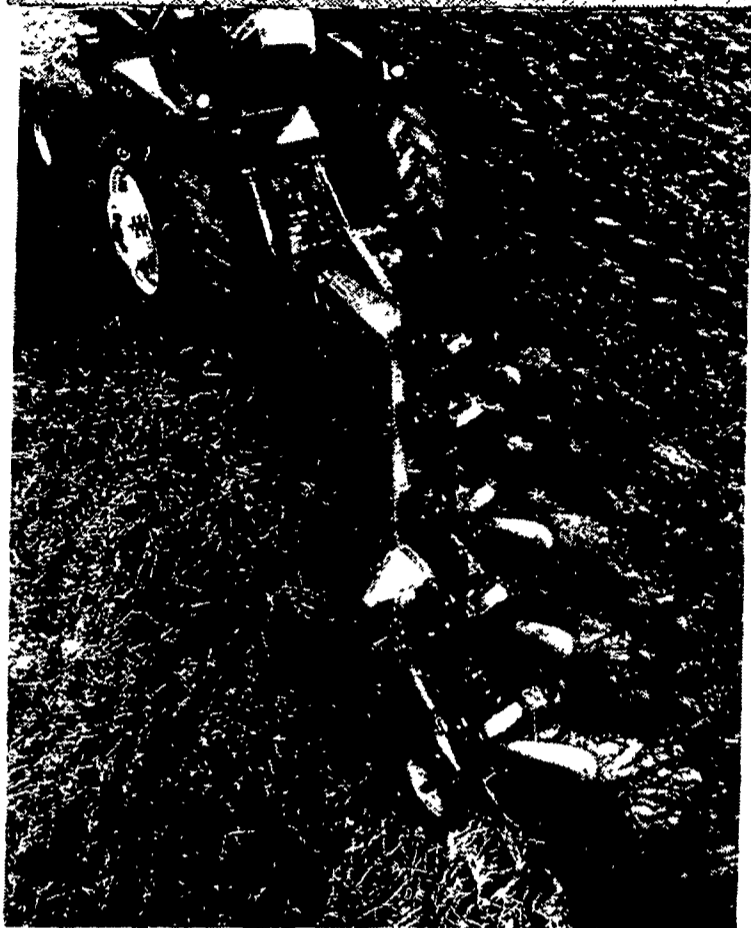


## Farm Business News



New integral plows from John Deere are the first in the Long Green Line with adjustable width of cut.

### Deere introduces adjustable plows

MOLINE, Ill. — John Deere has introduced two integral plows with adjustable width of cut.

The model 1000, for use on tractors with up to 85 horsepower, is available with 2, 3, 4, or 5 bottoms which may be adjusted with a slotted shim to 12-, 14- or 16-inch width of cut.

The model 1600, for use on tractors with up to 150 horsepower, is available with 3, 4, or 5 bottom and adjusts to 14-, 16- or 18-inch width of cut.

New 1000 Integral Plows are

available with safety-trip standards. New 1600 Integral Plows are available with the safety-trip or spring-reset standards patterned after the field-proven designs found on larger John Deere plows. Other options include shear-bolt coulters for 1000 plows, and a choice of shear-bolt or spring-cushion coulters for the 1600 plows.

Single beam construction provides up to 25½ inches of clearance on the 1000, up to 29½ inches of clearance on the 1600, which allows good trash flow.

### Don't neglect air cleaners

UNIVERSITY PARK — A little time spent servicing a tractor or other engine during dusty field work days helps prolong its life and improves the efficiency of the engine.

A tractor or combine engine takes in about 9,000 gallons of air for every gallon of fuel it burns, says James W. Garthe, Penn State Extension agricultural engineer.

A 100-horsepower tractor in normal operation will burn about six gallons of fuel every hour. This means that for every 20 hours of operation, the tractor engine takes in over a million gallons of air.

"That's a lot of air, and it may include a lot of dirt, especially under dusty conditions," Garthe says. "In extreme conditions, dirt can ruin an engine in less than a day, if the air is not filtered."

Proper care of the air cleaner means better economy and insures longer engine life, Garthe explains. An efficient air cleaner removes dust particles that grind away engine parts such as cylinders, rings, and bearings. A clogged air cleaner will choke the engine causing loss of power and excessive fuel use.

Dry paper filters are the standard of the industry today. Before removing any filter element, be certain not to allow accumulated dust or chaff to fall into the throat

of the carburetor or air manifold. After the element has been removed, a clean rag may be used to cover the exposed air inlet while dirt and grime are wiped from the air cleaner chamber and lid. Gently tap the filter element on a clean surface, or use low pressure air to blow the element clean. Air flow should be directed from the inside to the outside of the element. Excessively dirty, cracked, or torn elements must be replaced to avoid abnormal engine wear.

For those vintage oil bath type cleaners still in operation, after about every 10 hours of engine operation the cleaner cup should be removed and old oil replaced with new oil. Scrape the dirt from the bottom of the cup and wash in kerosene or solvent before refilling.

Garthe suggests always following the instructions in the operator's manual for detailed procedures for your tractor.



**NEED SOMEONE WHO CAN FILL THE SHOES?**

Try A Help Wanted Ad In Classified.

Phone: 717-394-3047 or 717-626-1164

## Plant breeding research cuts may bring hunger in the 90's

WASHINGTON, D.C. — Today's problem of food surpluses could be replaced by food shortages in the 1990's unless government begins immediately to invest more in plant breeding research.

That is the conclusion of 40 leading plant breeding scientists from the U.S. and Europe, who analyzed plant breeding investments and their impact on future food supplies at a recent Plant Breeding Research Forum.

The Forum, sponsored by a leading seed developer, Pioneer Hi-Bred International, Inc., today brought its message to those responsible for making decisions about the future of public funding of plant breeding.

Forum representatives' reports offered both optimism and pessimism.

Scientists can continue to

develop higher yielding crop varieties, said William L. Brown, chairman of the Forum. But future advances are going to be much more costly, he warned, because "the easiest gains have already been made."

For example, plant breeders continue to add about one bushel per acre per year to corn yields—but only by investing twice as much as they did 10 years ago.

Plant breeding investments made today will not pay off for at least 10 years, Brown noted. The rate of gain in productivity of crops is already slowing due to a lag in federal plant breeding investment that began in 1965.

State-appropriated funds continued to rise until 1979, when they, too, levelled off. As a result, the publicly-supported plant breeding programs which have been so ef-

fective in the U.S. are being hampered at a critical time, said Brown.

Brown and other members of the forum painted an optimistic picture of what can be done if adequate funds are provided.

— Yield can continue to move upward, thus moderating increases in food costs.

— Increasing yield per acre will allow erosion-prone land to be removed from the production of crops.

— The U.S. competitive advantage in world agriculture trade will be enhanced, expanding employment related to exports and improving the U.S. balance of trade.

— Dependability of yields can be increased, insuring a steady supply of food at reasonable prices.

— The nation's farmers can reduce their use of insecticides due to the ability of plant breeders to breed insect tolerance or resistance into new varieties.

— Varieties adapted to tillage methods which protect the soil from erosion can be developed.

In spite of this promising potential, public funds for plant breeding have been declining, after adjustment for inflation. This has had several adverse effects on universities which have traditionally performed much of the state and federally funded research.

In some cases, universities have attempted to maintain or expand their plant breeding research by increasing their reliance on private grants. This in itself need not be harmful, Brown said. However, dependence on private sources may shift emphasis away from the fundamental research which has been one of the important university contributions. Without such basic studies, all plant breeders will become less effective, he warned.

Another risk of underfunding universities is that staff members will seek more lucrative employment, hampering the training of future plant breeders.

Investments in plant breeding have produced annual returns to society of from 35 to 50 percent, Brown said. "The United States is penalizing itself by its failure to invest more in plant breeding research. What we do, or do not do, today will be felt in the 1990's at a time when food demand could well exceed supplies," he said.

### Baylor gets post at Beachley-Hardy

CAMP HILL — John E. Baylor, Professor Emeritus of Penn State Agronomy Extension, has been named manager of market development at Beachley-Hardy Seed Co., Shiremanstown, according to Hugh MacWilliam, vice president and general manager.

A native of New Jersey, Baylor received his B.S. and M.S. degrees from Rutgers University. Following graduation he served on the staff at Rutgers as an extension crop specialist. He received his Ph.D. from Penn State in 1957, at which time he joined the Penn State staff as extension agronomist. He assisted in the development of the Penn State University Forage Testing Service, and provided early leadership in the development of Pennsylvania's annual Forage and Agricultural Progress Days. He pioneered the organization of the Pennsylvania Grassland Council in 1960, the first council of its kind in the U.S., and served as its first president.

Baylor has earned an international reputation as a consultant on forage and livestock programs. He has worked with the IRI Research Institute in Sao Paulo, and has worked extensively in New Zealand, Australia, the Philippines, Thailand, India, and Canada.

Baylor took an active part in the organization of the IX International Grassland Congress held at Lexington, Kentucky in 1981. He is a member of the continuing committee planning for the XV Congress scheduled for Japan in 1985.

He is a member of the American Society of Agronomy (ASA) and serves on the Board of Directors of the American Forage and Grassland Council (AFGC). He served as that organization's president in 1969-70, and is currently the council's secretary, treasurer and editor of its official publication, "Forage and Grassland Progress".

Baylor has been the recipient of many awards, including the following from the Pennsylvania

Forage and Grassland Council: AFGC's Outstanding Service Award in 1981; the Medallion Award in 1971; and the Bicentennial Award in 1976. He was installed as a Fellow in the American Society of Agronomy in 1977, and received the ASA Extension Education Award in 1980.



John E. Baylor

### New Idea cites mowers

COLDWATER, OH — In 1983, New Idea will build and market two models of sickle bar mowers in 9- and 7-foot sizes.

These new mowers feature a balanced head sickle drive for smooth-running, high-speed performance and are available in 3-

point hitch or trailing styles. Cutters are extremely strong and are protected by a break-away device which allows the bar to swing back if an obstacle is struck.

These mowers will soon be available from New Idea dealers throughout North America.



This is the New Idea Model 522 sickle bar mower.