

Natural air drying

(Continued from Page 95)

swer "many questions" concerning "grain Chillcuring, which is a patented process of conditioning shelled corn during which its moisture content is reduced."

The three professors conclude that "Harvestall's 'Chillcuring' is basically a natural-air drying system with a very small amount of additional energy added by the infra-red lamps."

"Natural-air drying is not new," say the Minnesota professors. "Farmers use natural-air drying to dry ear corn in cribs. Natural forces (wind and sun) move enough air through the corn to dry it before it spoils provided there is a proper relationship between crib width and corn moisture content. Natural air can and is being used to move enough air through the shelled corn to dry it before it spoils," they say.

Hicks, Cloud and Hardman continue that "Much research has been conducted on the natural-air drying of shelled corn. Since the spoilage rate and the amount of water to be removed both increase with corn moisture content, the quantity of air required for natural air drying of shelled corn increases rapidly with increasing moisture content. Research has shown that an air flow of one cubic foot per minute per bushel is required to dry 21 to 22 per cent moisture content shelled corn with natural air in Minnesota. At 25 to 26 per cent moisture content, the

air flow required increases to three cubic feet per bushel.

The professors' primary dispute comes with Harvestall's alleged claim that their patented process will bring about an increase in dry weight. But they also doubt that the system will accommodate enough air movement to dry grain which contains more than 24 per cent moisture. The professors claim that most natural-air drying bins (including Harvestall's) are limited by that factor.

"If corn is being harvested at moisture contents above this (21 to 24 per cent) the bin must be filled at a slower rate over a longer period of time, so the higher moisture corn can be dried before it spoils," Hicks, Cloud, and Hardman reported. "The higher the moisture content of the corn, the slower the bin must be filled to minimize grain spoilage. This is how any low temperature, layer, in-storage drying system must be managed to dry shelled corn successfully," they add.

Hicks, Cloud and Hardman cite a 1975 advertisement by Harvestall Industries which illustrates their disagreement with company claims. The advertisement allegedly was entitled: "Back To Good Grain" and reported a situation where 11,325 bushels of grain went into the bin at a moisture content of 22.5 per cent, and 10,644 bushels at 14.5 per cent moisture were sold from the

bin. From these figures, say the professors, one can calculate that 18,130 more pounds of dry matter were removed from the bin that originally contained the corn.

They base their disagreement on the following calculation: 491,505 pounds of dry matter (11,325 bushels x 56 pounds per bushel x 77.5 per cent dry matter) went into the bin and 509,635 pounds of dry matter (10,644 x 56 x 85.5) were removed.

The three professors then go on to cite a 1978 advertisement titled "Harvestall Grain Chillcuring" which allegedly uses the following example: "13,000 bushels at 27 per cent moisture conditioned to 12,103 bushels at 15.5 per cent by Harvestall 'Chillcuring'." Again, the professors calculate that this would mean more dry matter coming out, than what went into the bin. They disagree that the 'Chillcuring' concept will do that.

The University of Minnesota paper, entitled "Weight Shrink and Dry Matter Change During Drying and Storing Corn Grain" contains five full typewritten pages. Aside from their own work, the paper cites five other

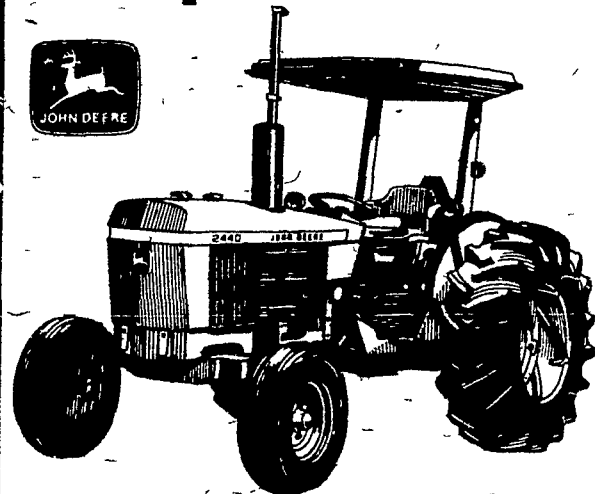
sources of information, including C.M. Christensen of the American Association of Cereal Chemists, St. Paul, Minn.

Agricultural colleges have not run any tests on Steffen's system as far as he knows. He stands by tests which he claims took place "on thousands of farms." Aside from pronouncing that his chill-cured system saves energy and preserves quality, the Midwesterner also says that feed requirements are reduced with his method.

Joe McCurdy, a crop storage specialist at Penn State University, says he takes some exception to claims made by Harvestall promoters. He says, simply, that it is a system which works fine, but it has its limitations. A major limiting factor is the humid climate of the Northeast, which takes away from the efficiency of the concept, he says. Point two is that he isn't convinced the idea is efficient with corn placed into the bin at 20 per cent moisture or above. Below that, he says, it is feasible. At any rate, he believes the low-temperature drying concept, as exemplified by Steffen's product, is more adaptable to the Midwest

(Turn to Page 97)

John Deere 60-hp 2440

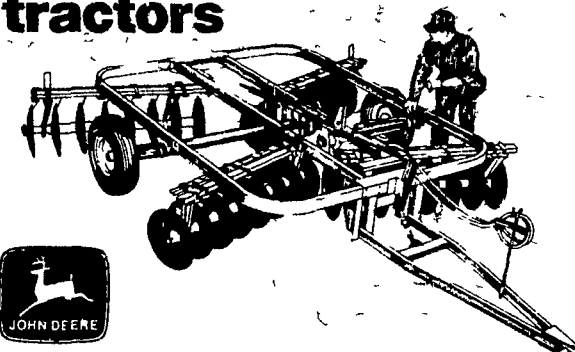


Ready for this year's tobacco crop

If your mainstay is tobacco, take a look at what John Deere 40- to 80-hp Tractors have to offer. Optional rack-and-pinion wheels (standard on 2840, not available on 2040) let you set tread to span two 48-inch rows. The slender hood provides an excellent view of the work area. Integral power steering acts instantly to dodge plants and swing quickly at row ends. The 8-speed transmission (12-speed hydraulic Hi-Lo shift on 2840) and variable-speed diesel engine team up to provide ideal cultivating speeds. Convenient controls allow you to hydraulically raise and lower a front-mounted cultivator and delay lift of the rear rigs to neatly finish out the rows.

If precise tractor operation is vital to your tobacco crop, stop in soon. Check the price and features of a 40-hp 2040, 50-hp 2240, 60-hp 2440, 70-hp 2640, or 80-hp 2840—the tobacco specialists.

111 LEVEL-ACTION™ DISK Ideal workmate for 60- to 100-hp tractors



Here's an ideal disk for chopping light trash, incorporating chemicals, or finishing seedbeds. Working weight of 55 to 75 pounds per blade and spacing of 7¼ or 9 inches make this a top-performing seedbed disk. Narrow working widths start at 7½ feet, reach out to 14¼ feet.

Overlapping front gangs cut away the under-surface center ridge, while offset rear gangs pull in the same amount of soil front gangs move out. An exclusive self-leveling hitch lets you regulate working weight — as much as 100 percent on every blade at full depth.

LANDIS BROS. INC.
Lancaster, PA
717-291-1046

ROBERT E. LITTLE INC.
Zieglerville, PA
215-287-9643

ADAMSTOWN EQUIPMENT INC.
Mohnton RD2, PA 19540
(near Adamstown)
215-484-4391

STANLEY A. KLOPP INC.
Bernville, PA
215-488-1510

PIKEVILLE EQUIPMENT INC.
Oyster Dale Road
Oley RD2, PA
215-987-6277

KERMIT K. KISTLER INC.
Lynnport, PA
215-298-3270

NEUHAUSE'S INC.
RD2, York, PA
1-83 Loganville Ext. 3
717-428-1953 or
235-1306

M.S. YEARSLEY & SONS
West Chester, PA
215-696-2990

SHOTZBERGER'S EQUIPMENT
Elm, PA
717-665-2141

AGWAY INC.
Chapman Equipment
Center
Chapman, PA
215-398-2553

A.B.C. GROFF INC.
New Holland, PA
717-354-4191

I.G.'s AG SALES
Silverdale, PA 18962
215-257-5136

RETIRE ON A BUNDLE



with an IRA or Keogh Plan

When you're ready to retire... there's nothing like the security of sitting on a sizeable retirement fund! You can set aside 15% of your annual income up to \$1500, and earn the highest interest allowed by law... tax-free until you retire! Come in today and get the facts!

OBBNB

BLUE BALL NATIONAL BANK

BLUE BALL
254-4341

MORGANTOWN
294-5791

TERRE HILL
445-4741

MEMBER OF FDIC

Have you heard about MOEWS

CHALLENGE II ?

Have you been CHALLENGED
to beat MOEWS hybrids?

We want you to plant one or more of MOEWS SUP'R MAIZ or * WAXY-MAIZ hybrids alongside any hybrids of your choice. Next Fall, check the yields of each hybrid tested. We're sure MOEWS will be the top yielders!

We're interested in helping you make maximum profits from your farm and we want you to plant MOEWS seed because we know it's what you need for top yields. Test at least 10 bags more of MOEWS than you planted last year. When you send in the yield results, we'll give you either a pair of insulated coveralls or a Ski Jacket for helping us prove the extra value of MOEWS hybrids.

Accept our CHALLENGE! Test at least 10 bags of MOEWS hybrids alongside your favorite. You'll be pleased with the results. Contact us... we can help you make more money with your corn crop.

We Also Carry:
milo, alfalfa, clover and
grass seed. Contact us for
your seed needs.



CONTACT OUR DEALERS

JOHN R. McFADDEN
R D #3, Box 208
Reynoldsville, PA15851
814-938-4606

WM. J. RAUS
3549 Kinyon Rd
Marietta, NY 13110
315-638-8883

EARL R. WALTERMIER
Box 128
Collegeville, PA 19426
215-489-9540 or 6405

NORMAN G. LAFFEY
Rt 1, Glenville Rd
Cochranville, PA 19330
215-593-6214

NORMAN C. YODER
Rt #1, Box 133
Belleville, PA 17004
717-935-2994

ALBERT GOFORTH III
R D #1, Box 602
Woodstown, NJ 08098
609-769-2896

JAMES J. HURLEY
Box 176A, Hawkin Rd
New Egypt, NJ 08533
609 758-7588

GENE HAAS
District Sales
Supervisor



4911 Bradley-Brownlee Rd
Farmdale, Ohio 44417
Phone 216-637 0749

MOEWS SEED COMPANY
Box 214, Granville, Ill 61326
Phone 815/339-2201

ASK FOR MAIZE...
you just can't say seed corn any better than that
...MOEWS