

Penn State Prof. Studies Grazing Chickens

UNIVERSITY PARK (Centre Co.) — A professor in Penn State's College of Agricultural Sciences is defying the norm by allowing chickens to graze in pastures rather than feeding them only stored grains in cages.

Heather Karsten, assistant professor of crop and soil sciences, has found that there are nutritional benefits to allowing chickens to forage on grasses which can provide high levels of protein and vitamins. She says while chickens can't get all their nutrients from pasture, those raised on fresh pasture instead of stored grain get more unsaturated fats and vitamins.

"It's like the difference between fresh and canned vegetables," Karsten said. "The nutrients are more available in the fresh leafy forage. And there are more unsaturated fats in fresh leaf tissues than in grain."

In addition, the chickens contribute to soil fertility by spreading their manure on pasture as they forage, and they may help reduce insect or parasite populations when following ruminant livestock.

Karsten found that legumes such as alfalfa and clover have higher amounts of omega-3 fatty acids than grasses. Research has shown that omega-3 fats lower health risks such

as cancer, cardiovascular disease, diabetes, arthritis, and autoimmune disorders.

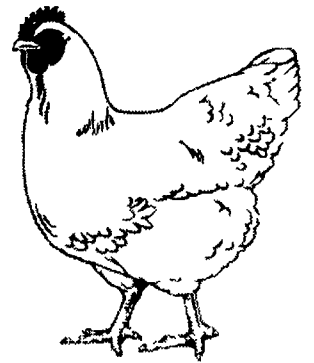
Karsten collaborated with Paul Patterson, associate professor of poultry science, and Gwendolyn Crews, an undergraduate assistant, to find the most nutritious pasture-plant species.

The researchers rotated three groups of 25 chickens over a six-week period from grass, to red and white clover, to alfalfa. The chickens grazed for two weeks on each species. The birds were housed in mobile coops that could be moved around the field on wheels, providing protection from predators and functioning as a

nest box. The mobile chicken coops were built by Penn State students in the Agricultural Systems Management Club.

During each rotation, eggs were collected and analyzed for levels of vitamins A and E and unsaturated fats. Birds that had been pastured were found to produce about three times more omega-3 fat in their eggs than birds raised on grains. Further, the eggs of chickens that foraged on alfalfa had 25 percent more omega-3 fat than the eggs of chickens foraging on grass. Chickens on pasture also had twice as much vitamin E and 40 percent more vitamin A in their eggs than the caged chickens that were fed grain.

"From this study we confirmed the nutritional advantages to raising hens on pasture as compared to on an industry diet in cages," Karsten said. "And we learned how to manage chickens on pasture."



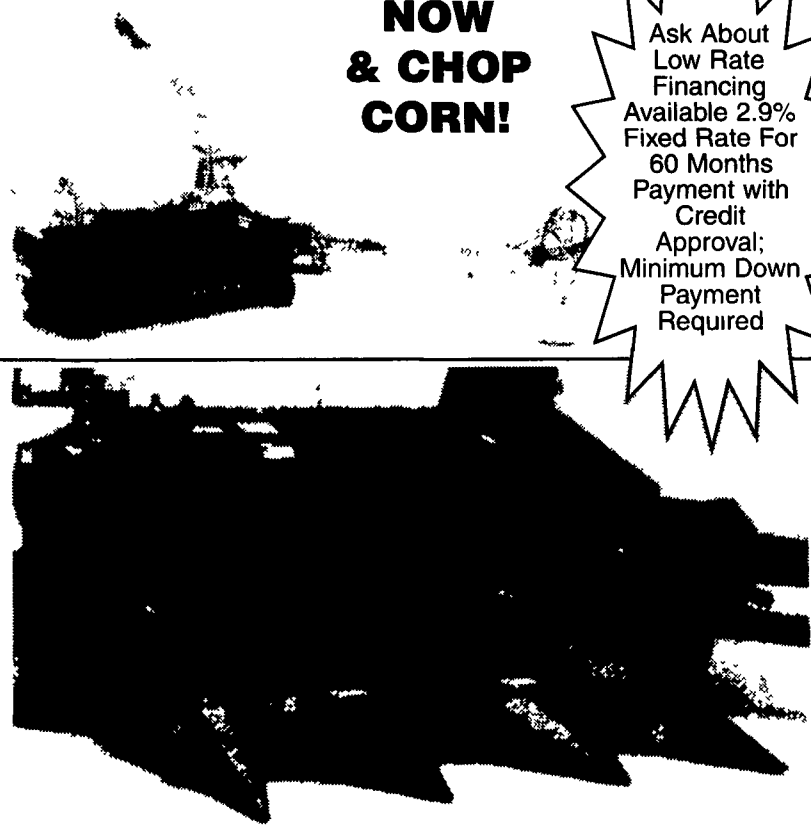
Binkley & Hurst Bros. Inc. Your Case IH Dealer Is Ready To Deliver!

New Case IH FHX300 TOP-CAPACITY HARVESTING

Discover the productivity advantages of the new Case IH FHX300 forage harvester. This high capacity harvester makes fast work of your corn and hay acres, and quickly turns your forage crops into high-quality silage.

**ORDER
NOW
& CHOP
CORN!**

Ask About
Low Rate
Financing
Available 2.9%
Fixed Rate For
60 Months
Payment with
Credit
Approval;
Minimum Down
Payment
Required



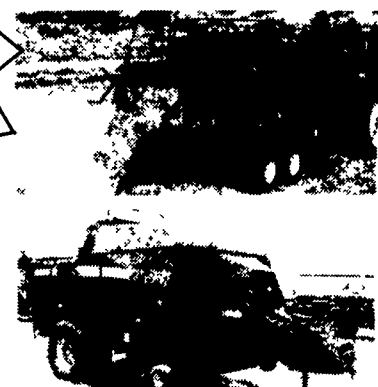
The Case IH 3-row corn head grabs every stalk you grow, even in lodged crop conditions. The cutting discs shear corn close to the ground and are spring-loaded, allowing them to move out of the way when they encounter an obstacle.

Model HDX3R 3-row corn head

THIS HEAD EFFICACY GATHERS CORN STALKS PLANTED ON 28 TO 32 IN. ROW SPACING. THE POINTS FLOAT OVER GROUND CONTOURS AND SKID SHOES ARE ADJUSTABLE TO ELIMINATE BULLDOZING. THE GATHERING CHAINS REACH FORWARD TO GRASP CORN STALKS BEFORE THEY'RE CUT AND FEED THEM SMOOTHLY INTO THE FEEDROLLS.

Heavy-duty design. The FHX300 was expressly designed for use with high-horsepower tractors — those from 180 to 300 horsepower. The wide, 24.4 in (620 mm) that opening swallows your heaviest crops, while the 1000-rpm driveline, heavy-duty components and wide crop heads are made to harness big-tractor horsepower and turn it into high-capacity harvesting performance. You control FHX300 operations right from your tractor seat using electric standard hydraulic tongue swing.

CASE IH LBX Series Large Rectangular Balers Model LBX x 331 NEW CASE IH 3X3X8 BIG SQUARE BALER MODEL LBX331 TANDEM AXLE AND SINGLE AXLE BALERS INSTOCK



3x3x8 instock

Lots of Features To Bale Your Crop The Way It Should Be! Equipped with Packer Cutter & Stuffer

The LBX331 packer cutter option allows you to use between two and six knives to adjust crop length from 4.5 to 10.5 in. You move the knives in and out of cutting position hydraulically from the tractor cab. Bale made with one of the Case IH pre-cutting systems are easier to break apart, mix and feed — and easier for livestock to digest. Using a cutting system also makes straw bales easier to spread and increase the straw's absorbency when used for livestock bedding. Density Control, optional Work Lights, Knotter Fan to Keep Dirt Away from Knotters, 1 3/8 1000 PTO, Minimum Hp Required 110 HP.

This is a Good Time Purchase A Quality Baler and Receive Binkley & Hurst Service & Training Support



Case IH
600
Blower

Save Dollars on This New Case IH MXM Rental Return Tractor with Full Power Shift & Cruise Control Like The Big Ones!
Case IH 115 PTO HP Tractor 4x4 Suspension Cab with 18 Speed Full Power Shift



with Shuttle Reverser, 18.4x42 Radials & 14.9x30 Radials on Front with Front Fenders.
One Only, Don't Miss This Tractor



SELF-PROPELLED Disc Mower Conditioner One Only
New Case IH Model WDX 1701, 166 HP Diesel Cab Air Heater with 16 Foot Disc Mower

Ready To Sell! Super Summer Special Ready For Quick Delivery Case IH MX 230 Magnum Rated 190 PTO HP

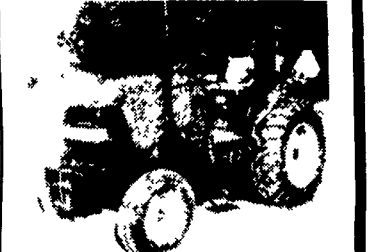


Ready To Go To Work One Super Deal! Purchase Before Sept. Price Increase!

Super Deal On This Brand New Case IH 2 Wheel Drive Air Conditioned Cab Tractor!
76 Turbo Powered Horses



Power Shuttle Shift, 18.4x34 Rear Tires, Air Suspension Seat, Tilt Steering with Lots Of Fine Features
Enjoy a New Tractor Come On In Now!



New Case IH JX55 Tractor
• 42 "gutsy" PTO Horsepower
• 12 Spd Trans w/ Mechanical Shuttle
• 14 9x28 Tires
• 2 Hyd Remote Outlets
• 540 PTO
This Tractor is loaded - ready to work!
with minimal down payment - it can be yours for as little as \$399/month for 36 months @ 2.9% int. or save \$500 by paying cash

Super Deal New Case IH MX Magnum 210



Rated 170
PTO HP

133 Rothsville Station Rd.
P.O. Box 0395, Lititz, PA 17543-0395
Located 1/2 Mile North of Rothsville

BINKLEY & HURST BROS. INC.
(717) 626-4705

1-800-414-4705
Fax 717-626-0996

Visit our Web Site at <http://www.caseih.com>
Case IH and Case Credit are registered trademarks of Case Corporation

