

Future depends on 'coordinating' disciplines

ITHACA, NY — The bright future promised by scientific developments in agriculture will not be fully realized unless new technologies are coordinated with social and economic factors, a Cornell University scientist contends.

Norman R. Scott, director of research for the New York State College of Agriculture and Life Sciences at Cornell, says that agricultural research must become a broad based effort that coordinates a myriad of economic and technical factors.

"We've got to put together not only the production of a product but also a system to handle that product and a strategy to market it," Scott explained.

For example, someone who wishes to develop an aquaculture business must know more than how to raise fish, Scott said.

"You have to know where the

fish are going to be sold, how they will be handled, and how they will be transported. You must bring together marketing, handling, processing, and transportation," he emphasized.

Scott, who is also a professor of agricultural engineering, made his comments during the recent Cornell Nutrition Conference for Feed Manufacturers in Syracuse, NY.

Emphasizing the need for coordination in agricultural production and research, Scott predicted that biotechnology, microcomputing, microelectronics, and robotics will play vital roles in future agricultural research.

For example, disease-resistant crops can be developed through conventional plant breeding methods or more exotic genetic engineering. Livestock can be made more productive by using

newly developed growth hormones. Energy production can be boosted by creating strains of bacteria that can turn agricultural waste into ethanol on an industrial scale.

Developments in microcomputing and robotics can lead to computer controlled fermentation, automated packaging, marketing research, and other improvements to agribusiness.

In dairy herds, electronics will

make it possible to achieve automated electronic identification of livestock, recording cows' milk yields, and detection of farm animals in estrus.

Coordination of technological developments in these fields with economic and social factors is essential for the continued health of the rapidly changing agricultural industry, Scott stressed.

"Agriculture today is facing

some major issues such as increased interstate competition for markets, reduction in government supports, high interest rates, changing consumer trends, shrinking export markets, and changes in the country's population," Scott noted.

In order to cope with the future effectively, agriculture's researchers and industries must take those issues into account, Scott said.

Delaware spurs building of solar homes

DOVER, DE. — Up to \$5,000 in mortgage principal reduction has been offered to buyers of newly constructed passive solar homes under the Delaware Solar Home Mortgage Assistance Program.

An estimated \$50-\$60 reduction in monthly mortgage payments can be realized at current rates, ac-

ording to the Division of Facilities Management's Energy Office, the program's administrator.

"Construction of energy efficient residences 'in tune with nature' is the objective," said Ed Shimamoto, Program Manager. "The resulting structures should be less reliant on conventional energy sources by improved gain and retention of solar heat in the winter and reduced cooling loads in the summer."

The amount of assistance is based on the performance of the passive solar space heating system in combination with natural cooling strategies to reduce summer cooling loads.

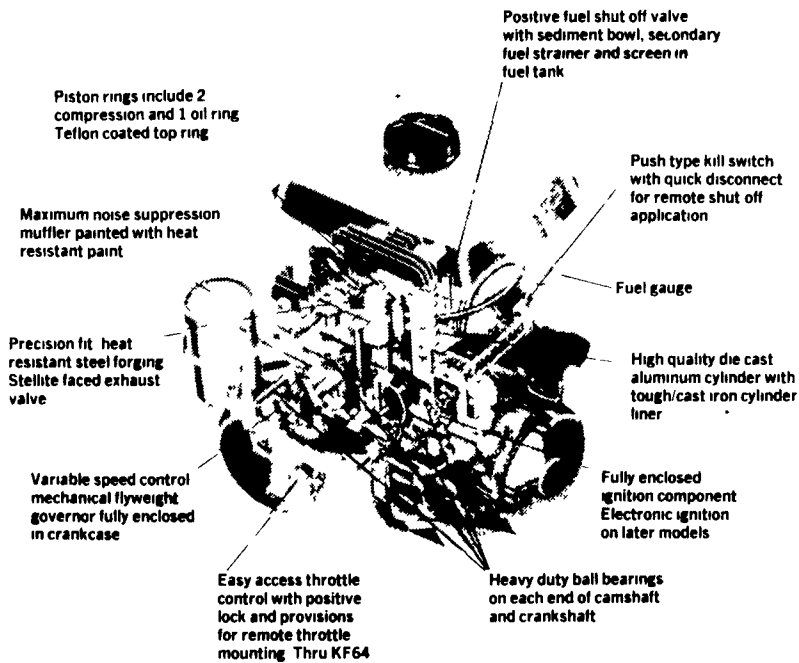
For more information or to obtain an application, contact the Division of Facilities Management, P.O. Box 1401, O'Neill Building, Dover, DE 19903-1401, or call the toll-free Energy Hotline, 1-800-282-8616.

OLD ENGINE WORN OUT??
 Replace With Kawasaki - The O.E.M. Preference
 Order Now On Kawasaki's
EARLY ORDER DISCOUNT SALE
 And Save \$\$\$\$

The Inside Story on Kawasaki Quality.

Kawasaki engines power giant tankers heavy construction equipment, jet aircraft and high speed trains. You'll also find them on high performance snowmobiles and motorcycles on agricultural equipment on lawn and garden machinery and in many kinds of other applications. Wherever reliability, ease of use, economy and durability are needed, engineers can specify Kawasaki heavy duty engines with confidence. For

these are Engineer's Engines. Carefully designed and meticulously built, tested and securely packaged. Whether your needs call for a 2 or 4-cycle engine, you can't buy better quality than Kawasaki delivers. A look at the inside story is just the beginning. We invite you to prove Kawasaki quality for yourself point by point in comparison with any engine anywhere. After you do, you'll choose Kawasaki power.



See Your Kawasaki Dealer Today
 Order Before Jan. 11. Pay Before April 1 to Receive Special Early Order Prices.

AARON B. BEILER

Box 195 Route 1
 South Vintage Road
 Paradise PA 17562

FISHER ENGINE SERVICE

3141 Old Phila Pike
 Bird In Hand PA 17505

LIMEVILLE SALES & SERVICE

R D 1
 Gap PA 17527
 (717) 442-8338

SPRING GARDEN REPAIR

R D 1
 Kinzer PA 17535

STOLTZFUS REPAIR SHOP

Star Rt Box 31B
 Rebersburg, PA 16872

BEILER ENGINE REPAIR SHOP

R D 2 Box 74
 Christiana PA 17509

ZOOK ENGINES

Alvin S Zook
 R D 4 Box 344
 Honey Brook PA 19344

SHIRK'S REPAIR SHOP

R D 2 Pool Road
 Ephrata PA 17522
 (717) 859-2797

BEILER ENGINE SERVICE

245D Pennys Rd RD1
 New Providence Pa 17560

LEROY'S REPAIR SHOP

303 Queen Road
 Gordonville PA 17592
 (717) 786-8788

STOLTZFUS ENGINE SERVICE

2447 Stumptown Road
 Bird In Hand PA 17505

DAVID A. FISHER

4109 E Newport Rd
 Kinzers PA 17535

SENENIG DIESEL SERVICE

R D 3 Box 97
 Selinsgrove PA 17870

BEILER'S REPAIR

R D 3 Box 165A
 Milton PA 17147

ALLEN HOOVER REPAIR

R D 1 Box 205
 Mifflinburg PA 17844
 (717) 966-3821

LAPPS SHARPENING SERVICE

R D 2 Box 276
 Myerstown PA 17067

We Specialize In Aerial Work Using Our Twin Bucket Boom Truck

Extends To 55 Ft

ELECTRICAL CONTRACTING
 Specializing In **AGRICULTURAL WIRING**

Also Residential, Industrial And Commercial Work
 Free Estimates

C.M. HIGH CO.
 320 King St.
 Myerstown, PA 17067
 Phone: 717-866-7544

We Have Poles In Stock 25 30 35 & 45

SERVING THE FARMERS FOR 114 YEARS

Each depositor insured to \$100,000

FDIC FEDERAL DEPOSIT INSURANCE CORPORATION

HAMBURG SAVINGS and TRUST COMPANY

Hamburg, PA — Phone: 215-562-3811
 A FULL SERVICE BANK

TIRED OF BEING OVERCHARGED? **SAVE**

Battery Warehouse

"Brand New Batteries Are All We Sell"

FARM • AUTO • TRUCK • MARINE & R.V. • MOTORCYCLE • COMMERCIAL

GROUP 1-6 VOLT \$ 35 ⁹⁵ W EXCH. AND COUPON	GROUP 30H \$ 69 ⁹⁵ W EXCH. AND COUPON	GARDEN TRACTOR BATTERIES \$ 34 ⁹⁵ W EXCH. AND COUPON
GROUP 24/24F \$ 29 ⁹⁵ W EXCH. AND COUPON	GROUP 3EE \$ 49 ⁹⁵ W EXCH. AND COUPON	GROUP 4DLT \$ 94 ⁹⁵ W EXCH.

Serving You In Over 90 Locations

COMPARE OUR QUALITY, POWER, WARRANTY and LOW PRICES.
 YOU'LL SEE WHY THOUSANDS TRUST THE #1 DISCOUNT BATTERY STORE

Battery Warehouse

SINKING SPRING (215) 777-5284	HARRISBURG (717) 652-0565	LANCASTER (717) 392-8484	CHAMBERSBURG (717) 264-7414	WHITEHALL (215) 433-5188	WILKES BARRE (717) 824-2995	FREDERICK MD (301) 662-2288
TEMPLE (215) 921-0246	MECHANICSBURG (717) 697-4414	ALTOONA (814) 942-2888	LANCASHIRE (215) 757-8300	MONTGOMERYVILLE (215) 368-0168	DOVER, DE (302) 674-4020	BELAIR, MD (301) 879-4323
BETHLEHEM (215) 867-8077	NEW OXFORD (717) 624-4681	WESTMINSTER, MD (301) 876-7188	HAGERSTOWN, MD (301) 791-7780	HAZLETON (717) 455-6600	SOMERSET (814) 443-1133	ALL LOCATIONS ARE IN PA. UNLESS OTHERWISE NOTED.