

## Greenhouse Use Traced

Greenhouses have been used to increase food production for 20 centuries and have been utilized for commercial food production for the past 100 years. New techniques—artificial cooling, carbon dioxide enrichment, use of artificial soil, and automated irrigation with liquid fertilizers—have made virtually complete environmental control possible for crop production, according to a U.S. Department of Agriculture (USDA) publication.

Capital investments for new and fully-equipped glasshouses in developed nations commonly exceed \$100,000 per acre. Introduction of plastic film during the 1950's made it possible for less affluent nations to use greenhouses. If efficient field culture is possible, greenhouse production is nearly always more expensive per unit of product. But, developed nations can make greater use of greenhouses to produce crops during off-seasons and less-developed nations can use simplified forms to augment food supply. While almost every crop, including tree crops, has been produced in greenhouses, the most important crops produced worldwide are tomatoes, lettuce and cucumbers.

The publication, "A Global Review of Greenhouse Food Production," published by USDA's Economic Research Service, traces the history of greenhouse-type production to the Roman Emperor Tiberius Caesar, who ruled between 14 and 37 A.D., and reviews methods, economics, and current production in 41 nations. The publication provides an update on hydroponics, trickle culture, and multiple cropping techniques used in greenhouse food production. It was written for trained agriculturists. It is not a "how to" publication and may be of little interest to the amateur wouldbe greenhouse hobbyist.

While the United States has about 1,000 acres under glass or plastic structures, France has 2,700, Turkey 5,000, the Soviet Union about 5,300 and Japan about 25,000 acres.

"A Global Review of Greenhouse Food Production" FAER-89, contains 150 pages, is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20240, \$1.50 post paid.



Ten members of the Grassland FFA Chapter and Chapter advisor Robert Woods attended the National FFA Convention at Kansas City recently, traveling by school pickup and a camper built by the Chapter several years ago. Those attending were: (left to right) Robert Woods, Elvin Hursh, Daryl Sensenig, Larry Ressler, Dennis Nolt, Dale Sensenig, Wayne Martin, Ken Groff, Ken Mull, Garry Messner, Ray Martin and Dana Smith.

Wayne Martin, also from the Grassland FFA Chapter, won a silver medal in the National Agricultural Mechanics contest at the National FFA Convention. He earned the right to participate in the contest by placing first in the State contest.



"If things won't come your way, go after them."—Fred W. Grown, The Bergen (N. J.) Citizen.



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## Ad Deadline Set For 22nd PennAg Manual

Eugene E. Eby, Newport, Penn., President of PennAg Industries Association recently announced the proposed publication of the 22nd annual Manual & Directory. Publication is made possible through advertisements which are now being solicited. Publication is expected on January 25, 1974 and the date for submitting advertisements is December 15, 1973.

Being the only one of its kind published east of Ohio, the 200 page "paperback" is designed for Pennsylvania's agribusiness community, listing all known firms doing business in the state and cross-indexed by city, county and alphabetically. Also included is data on the firm, such as the ownership, address and telephone number.

The "Manual" part of the publication contains information regarding laws, taxes, licenses

and regulations required to be observed by agribusinessmen. Educational and governmental personnel important to the industry are also listed.

Finally, a "Buyer's Guide" to products and services for agribusiness rounds out the publication.

PennAg represents members from all parts of Pennsylvania and some of the surrounding states. Membership includes firms in the agribusiness community who buy from and sell to agricultural producers. These firms represent a total systems approach to agriculture and food production.

"A sure sign of inflation is when the office gang gathers around the water cooler instead of the coffee-maker."  
—Herman Gross, Tri-County (Mo.) News.

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