Economic Problems of the Horticultural Specialties
By M. Truman Fossum

An area of research in agricultural economics hitherto largely neglected was introduced with the recent publication of "Trade in Horticultural Specialties,"1 which was issued by the Bureau of Agricultural Economics last April. The data in this statistical compendium constitute the basis for further research in this field. That the industry is of economic importance may be seen in the fact that at midcentury the value of sales and inventory of horticultural specialty goods and services in this country exceeded $1.5 billion. The labor force of the industry was more than a quarter million persons, with a payroll of more than $300 million. Cash receipts from horticultural specialties in 1952 surpassed those of such outstanding farm products as potatoes, apples, oranges, sugar beets and cane, wool, turkeys, and sheep and lambs. Some of the aspects of economic research in the horticultural specialties were considered at a workshop conducted last summer by the Foundation for Floriculture, in cooperation with BAE. In the accompanying paper Mr. Fossum follows up with an outline of the principal areas of economic investigation in this fertile field.

The horticultural specialties industry includes both commercial floriculture and commercial ornamental horticulture. Floriculture has to do with outdoor and greenhouse crops which are used in homes and other buildings or for personal adornment. It is not restricted to greenhouse crop production. Ornamental horticulture pertains to crops intended for replanting out of doors. This distinction between the two industries proves to be adequate except for herbaceous plants. Among these crops, perennials are generally grown in nurseries and thus are in ornamental horticulture. Herbaceous annuals grown for replanting in flowerbeds, borders, or window boxes are most often produced in the facilities of floriculture.

Biological research in floriculture and ornamental horticulture developed largely during the last 25 years.2 Until recently most of it pertained to production of crops. Some attention is now being given to marketing technology research, with emphasis on problems of storage, packaging, and processing or preparation for marketing.

It is only within the last 10 years that economic and statistical research for the horticultural specialties has been of interest to growers. So far, the State colleges and the Federal Government have not included economic research projects in floriculture and ornamental horticulture in their programs of teaching and investigation in agricultural economics. This shortcoming was not necessarily the fault of agricultural economists, for the primary interest of growers and the professional personnel that served these industries was focused on plants—their introduction, propagation, culture, and usefulness in design and arrangement.

Florists and nurserymen have lacked leadership or direction for formulating ways and means of obtaining economic facts and putting them to use effectively. Irrespective of the long recognized separation of subject matter in State colleges and the Federal Government, florists and nurserymen have become accustomed to presenting all of their problems to the biological scientists who work with their crops. But these professional workers seldom considered the place of economics in farm management and marketing research.

Despite these handicaps some progress has been made in the economic phases of this industry. Florists and nurserymen since 1945 have

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supported the development of a fairly comprehensive body of descriptive statistics. These are available in the form of a progress report, and recent publications of the United States Department of Commerce and the United States Department of Agriculture. Beginnings have likewise been made in developing cooperation between biological and social scientists, which will be of increasing importance as economic problems in farm management and marketing are examined.

Economic research for florists and nurserymen first faces the limitations caused by the lack of a universal language in terms of grades and standards. This may well be the common ground on which economists and biologists can meet. The combined techniques and know-how of both groups working with the industries bear promise of the establishment and use of grades and standards. When properly constituted grades and standards are established, accepted, and used, such services as market reporting, planting intentions, and crop estimating may be extended to these industries.

Several experiment stations—California, Florida, Hawaii, Indiana, Michigan, and New York—have already undertaken preliminary projects relating to problems in the economics of horticultural specialty farm management and marketing. Current projects and plans include added efforts of the Agricultural Marketing Service of the United States Department of Agriculture and the State agricultural experiment stations of Iowa and Pennsylvania.

Attention has been limited almost entirely to horticultural specialty commodities that move through wholesale markets—essentially, cut flowers. The economic problems concerned with these crops overshadowed equally important problems that face growers of other floricultural crops, nursery stock, sod, bulbs, and flower seed, to which practically no attention has been given.

Except for fruit stock and seeds, the commercial enterprises of these industries arose out of private estate and public park gardening. The results-at-any-cost endeavors of such horticultural pursuits resulted in trade in these commodities that gave great emphasis to services and accessories associated with goods. As a whole, little difficulty was experienced in selling annual output.

But in recent years production has increased substantially. The number and complexity of the economic problems facing the horticultural specialties industry have also increased. Owing to these developments, coupled with the absence of earlier economic research in this field, future expansion of research in the economic problems of the industry affords the prospect of productive results.

As most of the problems will need to be solved by those who manage the enterprises or organizations of the industry, this discussion is primarily focused on the economic aspects that will help management to make better decisions. Actions by the Government of course may aid in the solution of some problems, therefore mention is also made of some of the more important of these.

Problems in Business Records

The best tool of management is an adequate record system. But there is an almost universal absence of suitable, simplified records which furnish the basis for sound decisions. Workable but adequate methods for cost control and for valuing inventories are among the general problems of growers of the crops. Most of the systems so far proposed have proved so complicated as to defeat the purpose for which they were intended.

Adequate record-keeping is found mostly among wholesalers of cut flowers, greens, or foliage, and supplies for retailers and concerns that specialize in the sale of bulbs, plants, seeds, and supplies to growers. The major requirement among these establishments is for greater uniformity in the procedures employed.

Retailers of floriculture have had some guidance in bookkeeping from the clearing houses of

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3 Fossum, M. TRUMAN. FLORICULTURE AND ORNAMENTAL HORTICULTURAL ECONOMICS. Chicago, Society of American Florists. 150 pp., illus. 1950.
5 Trade in Horticultural Specialties, op. cit.
their telegraph delivery organizations. The fact that retailers and growers of floriculture are in business is often incidental to their primary interest in aesthetics of design and arrangement or cultivation of certain crops. They detest records and figures and consequently neglect them even though they recognize their importance. Nevertheless, the need for improved record-keeping methods and techniques is as important for them as for retailers of ornamental horticulture, including landscapers, sales yards, horticultural maintenance or service establishments, and garden supply stores.

The need for reporting certain types of business information to Governmental agencies is a clear reason for expanding and simplifying record-keeping methods. Improved accounts and records also will make possible the preparation of meaningful industry aggregates and averages concerning prices, volume of sales, and related information with which business firms are concerned. But the main purpose of improving records is to provide management with better information for determining changes that would be profitable. Some changes concern such selling considerations as geographic and seasonal price differentials, returns from different marketing channels and relative returns from various lines handled. Other changes relate to costs of marketing and ways of achieving greater efficiency.

Problems in Marketing

Several developments or conditions in the industry have increased the importance of various marketing problems. The specialized character of production originally resulted in highly specialized channels of trade. Many growers were also retailers and this situation has continued in considerable degree to the present time. In 1949 nearly 30 percent of the retail establishments handling horticultural specialties were also producers of these crops. As many establishments were engaged in retailing as in production.

For the most part, those retail establishments which have become completely divorced from production have continued to sell only horticultural specialties, and they usually handle only a limited number of the crops covered by the industry. Thus, the horticultural specialties industry continues to depend primarily on highly specialized retail outlets, whereas increasing proportions of the retail trade of a growing number of products are being handled by department stores and other diversified large retail outlets.

A condition pertinent to floricultural marketing is that a large proportion of the sales are in connection with funerals, illnesses, weddings, and other occasions for which the use of flowers is traditional. More than three-fourths of the retail business of the floricultural industry is accounted for by such sales. Consumer expenditures for such purchases no doubt are more directly related to custom than to disposable income or price, with the result that the demand of this group of purchasers probably is highly inelastic. It appears likely that retailers have been so preoccupied with this segment of the market that they have not attempted to develop, or to examine sufficiently, the nature of the demand of those who purchase for other purposes.

A somewhat similar situation prevails in the ornamental horticultural industry. A substantial proportion of its total sales has been made in connection with the development of land, landscaping of buildings for both public and private purposes, soil conservation, watershed protection, flood control, wildlife preserves, and other uses for which purchases frequently are not affected by price changes. Industry has recently discovered advantages in properly planted and maintained surroundings, for reasons ranging all the way from climate control to the psychological effect on employees, customers, and the general public. Commerce recognizes the economy and safety resulting from proper plantings, for example, good sod for air fields to reduce dust and silt which is harmful to air transportation equipment.

No doubt an examination of the above uses would indicate markets in which sales would be significantly affected by price changes. Furthermore, the volume of purchases of such commodities might be related directly to the available “free income” of prospective buyers.

The pricing process itself in the horticultural specialties industry appears to be based less on costs of the raw materials or goods than on
such intangibles as artistry. Through the medium of living materials the retail trade of floriculture and ornamental horticulture is to a large extent founded on creative effort, like music, painting, sculpture, or the theater. The combination of goods, services, and art results in economic problems unlike those usually found in trade.

Closely related to price-income relationships is the propensity for important segments of the industry to change the kinds and varieties of products as the result of findings by plant breeders or plant improvers, rather than because of demonstrated consumer preferences. Little has been done to measure the importance which consumers attach to such variables as shape, size, and color of flowers and plant materials, type of retail outlets, and amount of service incorporated with the product.

A further consideration of importance to marketing is found in the competitive interrelationships among firms in the industry. Among growers a small percentage of the establishments are large, and they account for high percentages of the crop production. A smaller proportion of the retail trade is conducted by large establishments. This situation is more like many kinds of manufacturing than other kinds of agriculture. The problem here is partly one of economic size or strength among grower establishments, as their size and strength are much greater than those of the highly specialized retailers of their goods and services.

Some horticultural specialty crops are sold through wholesale channels. The wholesalers who handle this trade help finance growers and retailers who, in effect, operate as "sharecroppers" for their financing agencies, the wholesalers. This situation at times has accentuated distribution problems.

Unlike most farmers and manufacturers, some growers supplement their own wholesale sales by handling the crops of other growers. Also some retailers are practically forced into crop production in order to supply their own trade with desired quantities or qualities of specified crops. This applies especially to crops suited for the artificial or controlled conditions of greenhouse culture and certain landscape items. Again this situation has increased the difficulty of improving the present system of distribution for the industry as a whole.

This industry has been prone to solve certain economic problems at the biological level by means of such measures as quarantines and other trade barriers. Unlike most other farm production, but more comparable to that of many manufacturers, some kinds of varietal improvement can be patented. This gives rise to particular advantages or disadvantages to given establishments. The restrictive effects on distribution lead to additional marketing problems from an industry viewpoint.

Thus it is clear that much fruitful marketing research should be developed around the problems of the horticultural specialties industry. Possibilities of increasing the number of retail outlets that attract large numbers of customers need careful appraisal, as do the demand and pricing concepts now held by many in the industry.

Problems in Transportation

Growers, wholesalers, and retailers of cut flowers, and to a limited extent of other horticultural specialty crops, are faced with an unusual combination of circumstances in moving their products to points of consumption. Many of these crops are highly perishable and must be transported rapidly under controlled conditions of temperature and humidity. Some crops are produced almost entirely in a few localities, which means that they must be transported considerable distances to reach some markets.

The character of demand for floricultural products is such that sales may fluctuate over a wide range even within the same season, and much of this fluctuation cannot be foreseen. More so than with many other agricultural products, special facilities are needed for the rapid handling of products both while awaiting shipment and after shipment has been completed. For these reasons the adequacy of transportation services is a more important consideration to many producers than is the cost of these services.

Railway express has been a major means of transportation from grower to wholesaler or retailer, and from wholesaler to retailer. Recent reductions in the schedules and services provided
by this agency, however, have created problems for growers and wholesalers. Bus lines have been used in many areas, but establishing regular service has been difficult, for many of these companies are chartered primarily to care for passenger trade.

Air express and air freight are more recent innovations. Despite its advantages for cross country or long-distance shipments, the system has decided limitations for local deliveries in wholesale quantities and to more distant points that do not have airfields.

There are also differences in the suitability of cut-flower crops for air transport. Nearly all of the crops require packaging, which results in space requirements that are great in relation to weight. Only commodities of relatively light weight and high value, such as orchids, roses, and gardenias, can be economically transported by air. Gladioli have so much bulk and weight in relation to value that air transport is still uneconomical.

Airlines are interested in research pertaining to these problems. To quote the president of the National Air Freight Forwarders Association, “Flowers will continue to constitute the most important item of air freight within this country for some time to come.”

Most flowering potted plants are finished and sold for specific holidays such as Christmas, Easter, Mothers’ Day, and Decoration Day. Transportation equipment is required to provide temperature protection, the same as for cut flowers. Because of their bulk and weight in relation to value they cannot be shipped in wholesale quantities economically by air. The disadvantages of express services have been partly overcome by truck hauling. But trucking presents problems of investment depreciation, licensing, labor unions, and related factors, which make it too costly for all except large establishments. Finished or unfinished “green plants” and related items may be moved in wholesale quantities by express, bus, truck, air, water, and parcel post, depending upon the circumstances.

Rail freight has been the primary means for quantity shipments of bareroot and balled and burlapped nursery stock as well as that grown in cans. But recent rate and service changes, especially for less than carload shipments, have forced the industry to resort to trucking. The advantages of this method of shipment to date have been offset by such disadvantages as cost of investment, depreciation, seasonal use, licensing, high cost of labor, and laws which exclude nursery products from classifications for agricultural products. Nursery stock that is balled and burlapped, or in cans, presents problems of bulk and weight in relation to value that are difficult to overcome. Some items, particularly perennial herbaceous plants and newly propagated stock, have been moved in wholesale quantities by parcel post. But recent changes in limiting package weights and dimensions have created problems equal to those respecting rates and classification.

Bulbs are usually shipped while dormant. A major problem in their transportation has to do with those intended for the production of greenhouse flowers. To obtain the desired crop at the right time, bulbs for forcing are often subjected to postharvest temperature treatments. This creates special problems of refrigeration, heating, storage, and speed in transit. Transit and terminal services and facilities for such shipping were developed with railway express, in keeping with the findings of biological research. Recent reductions in schedules and services have made difficult the seasonal movement of bulb crops. Importers and shippers of bulbs are faced with similar problems, together with those of quarantine and inspection, which make trucking an alternative with decided limitations.

Owned motor vehicles are the major means of transportation at the retail level for both floriculture and ornamental horticulture. Consumer-carrying or transport, pooled deliveries, and hired vehicles are the chief alternatives for retailers. But legislation covering licensing, drivers, jumpers, and related factors, as well as the requirements of organized labor, mean prohibitive costs, delays, and inefficiencies, for even the most effective methods of routing and loading. Rail or air express of retail shipments suffers even greater limitations than those of wholesale quantities. Least perishable items—such as dormant nursery stock, bulbs, and flower seeds—can be shipped in retail quantities by parcel post.
From the foregoing discussion it may be concluded that research on selected transportation problems promises findings of considerable value to management in its determination of adjustments which should be made. The increasing costs of transportation no doubt will force a reconsideration of the question of where production should be located, with particular attention to growers who produce highly perishable items in areas far removed from major markets. Some firms might justifiably consider the purchase of their own transportation equipment, and cost studies of this practice would be relevant. In some cases, changing transportation methods also will mean changes in marketing channels, and these must be examined before decisions can be reached concerning transportation methods to be used.

Biological research no doubt will uncover improved handling methods, and economic appraisals of these may indicate other ways in which the impact of increasing transportation costs can be lessened. In addition, other subjects in the field of transportation require further examination if marketing is to be performed efficiently. Governmental agencies play an important part in transportation, including such phases as carrier and rate regulation. Studies of the impact of such regulations on both carriers and shippers may prove useful in the continuing process of modifying and amending regulations imposed by Government.

Other Economic Problems

Growers of horticultural specialty crops have many farm management problems that are similar to those of other farmers. Major differences as they apply to horticultural specialty farmers are the intensiveness of production and frequent use of controls over such climatic conditions as light, temperature, and moisture.

Production in the horticultural specialties is characterized by a considerable investment in specialized types of equipment and facilities. Growers of these crops are more restricted in alternative uses and relative mobility of their capital investment—selected land, greenhouses, cloth houses, lath houses, and other equipment—than most farmers and manufacturers. A compensating factor is that they have a wide range of alternative activities or combinations of the various lines of horticultural specialty production and distribution, although they seldom have occasion to use them. Industry or establishment location is a major problem, particularly when shifts in transportation methods, production costs, and cultural techniques change as greatly as they have done in recent years.

Because of the intensity of production and other peculiarities already mentioned, horticultural specialty crops represent the last type of agriculture to move from urban and semiurban areas. This gives rise to special problems of legislation, regulation, taxation, and related issues. Under conditions, or in locations, more often identified with industry, commerce, and housing, producers of horticultural specialties are faced with a complexity of economic problems more urban than rural.

As with most other kinds of farm or industrial production there is a tendency for horticultural specialty crop production to be concentrated in certain localities or areas. Reasons for this vary from climate and weather to nationality, specialized labor, and nearness to market. The difference from most other kinds of agriculture and manufacturing is that the concentrations of horticultural specialty production are in metropolitan economic areas where the greatest proportion of the retail trade is conducted.

Nevertheless, conditions associated with the location of this industry are constantly changing. Greater attention in research needs to be directed to the relative importance of changes in such factors as location of markets and transportation costs, along with such stable elements as climate, in ascertaining the feasibility of changing the location of some of the units in the industry.

At the farm management level as well as in the various channels of trade these industries have been slow to examine methods by which productive efficiency could be increased. Mechanization is a very recent innovation but it is largely limited to certain kinds of nursery production and bulb and flower seed farms. Whereas most farmers, manufacturers, and businessmen in this country long ago divorced themselves
from the European practice of apprenticeships, horticultural specialty establishments still show evidence of its influence. To a large extent, horticultural specialty operators at all levels still think of cost of labor in terms of cost per man rather than relationship to output.

Adherence to historic methods and practices, along with the psychological and philosophical attitude toward labor, has resulted in general disregard for improved layout and equipment, job evaluation, and other kinds of research related to operating efficiency. The retail trade in horticultural specialties has emphasized service, and this has caused a wasteful approach to the use of labor, space, supplies, and equipment. Reduced immigration of skilled labor, high employment, and increasing wage scales, accompanied by increased production, have made the industry feel the impact of these factors, although as yet no consistent and concentrated effort has been made toward solutions. Most of the problems that need attention in this area of research are similar to those faced by other farmers and businessmen except that they are magnified as a result of the time lag which by now is most evident.

Conclusion

Many of the economic problems of the horticultural specialties industry are similar to those in other kinds of agriculture, industry, and commerce. A few are unique to the horticultural specialties. In either event economic examination of many of the problems of the industry can prove useful to both individual operators and public agencies. Need for such investigations has been expressed by the industry, allied industries, consumers, experiment stations, other research agencies, and the Congress of the United States.

The lack of research attention to the economic problems of the industry in the past accentuates the present need for greater emphasis on economic investigations concerning all phases of the industry. Much of the research would be suited to the work of individuals or agencies that operate at State or regional levels. Some of the problems would best be dealt with at the national level and others by the industries themselves. Nearly all of the investigations bear promise of being suitable for, and strengthened by, cooperation among States, the Federal Government, and organizations of the industries concerned.