GUEST EDITORIAL

ORNAMENTAL HORTICULTURE MUST GROW TO MEET CHANGING NEEDS

by Robert T. Johnson
Horticulture Instructor
Dutchess County B.O.C.E.S.
Poughkeepsie, NY

In the past few years our depressed economy has reduced the job market considerably. This situation has put many people in the position of having to seek employment on a temporary basis. However, for those who are prepared, there are many opportunities available in the field of ornamental horticulture.

Meet the Needs of Students Who Plan Careers in Ornamental Horticulture Occupations — J. C. Simmons

There is a growing demand for trained professionals in this field, and with the right education and training, you can be one of them. The programs offered by community colleges and vocational schools provide excellent preparation for careers in ornamental horticulture.

PUBLICITY HELPS GREATLY

All methods of keeping the horticulture course's name in the public eye should be utilized. This includes advertising in local newspapers, distributing brochures at job fairs, and participating in community events.

COURSE MATERIAL MUST BE CURRENT

It is essential that the course material be up-to-date and relevant. Regular updates to textbooks and other course materials are necessary to keep students engaged and informed.

PROFESSIONAL ORGANIZATIONS ARE AN AID

Membership in professional organizations can provide networking opportunities and access to the latest industry news. It is important to stay connected with other professionals in the field.

As stated at the beginning of this article, ornamental horticulture occupations and the many diversified methods of obtaining them is certainly a growing field. —
The National Agricultural Education Advisory Council met March 3, 1977 in Washington, D.C. An annual report of the Council's accomplishments was presented.

1. The National Agricultural Education Advisory Council was officially chartered by the American Vocational Association.
2. Members of the Advisory Council participated in the project "Standards for Quality Vocational Programs for Agriculture/Agribusiness Education."
3. The Council's concern led to the development of a statement of philosophy for the National Agricultural Education Advisory Council, which was adopted at the 1976 national convention.
4. The Council's concern about the necessity of a student information system helped influence AVA to establish a task force on Teacher/Student/Parent (TSP) data by Gene Love, Chairman of the Agricultural Education Department, The Pennsylvania State University.

(please submit articles 2/3 months in advance of Theme to allow publication time.)
LEARNING BY DOING IN ORNAMENTAL HORTICULTURE

by Glen H. Patrick
Horticulture Department
Milwaukee Area Technical College

"Hands on Experience" and "Learning by Doing" have long been merits of Vocational Education. The Horticulture Department at Milwaukee Area Technical College is presently attempting to simulate occupational conditions by incorporating work experience in its courses. Employers of our graduates place great emphasis on employee experience. Therefore, our program has been set up to provide students with an opportunity to engage in all the activities involved in the operation of a horticultural endeavor.

THE CAMPUS

Our new campus gives students the opportunity to practice landscape design and construction skills. Greenhouses, buildings and plant materials are utilized in design and construction phases. Remaining walls, walkways, patios and trees are created with the aid of an instructor. Students' construction projects are kept for a time as examples and later dismantled to materials can be re-used by other students. Thus, a continuous cycle of landscape display areas exist for visitor and employer viewing. Machine operation classes use a complete line of school owned landscape equipment to maintain the campus and construct new projects. Students record time spent operating equipment in a log book. This enables them to show a potential employer their exact amount of experience on each type of machine. Horticultural equipment classes repair machinery and keep it in proper running condition. A three acre working nursery provides practical experience in growing trees, shrubs, groundcovers and vines. Cultivating, pruning, transplanting, chemical control, orchard practices and other related nursery processes are learned. Some of the plant materials from the nursery are used in students' construction projects around the campus. Greenhouses enable students to propagate vegetative material, practice in seedling transplanting and learn techniques in the control of pests and diseases. Bedding plants and seasonal potted plants are also grown.

Students are expected to conduct themselves as they would in their future jobs. They get their hands dirty and perform manual labor when required by the situation. This enables them to discover whether the tasks performed are, for them, gratifying and rewarding or maddening and degrading. At this point, some students are counselled out of the program. For those who remain, job placement is good. Local employers have helped us set up our program and endorse the practical experience we provide for our students.

Every effort is made to create an atmosphere that parallels that of the horticulture industry.

Students also learn to work beside and with others courses such as Horticultural Business Methods that place human relations abilities needed to make a successful in any field they enter. Students learn to rec- tivate those qualities that must be present to have a working relationship with employers and customers. Also development and a willingness to work are stressed. Classes are offered to help students with the mathematics skills needed to will need to merchandise products as well as all skills during job interviews.

INTERNSHIP

An internship program places students with private employers. The school has a good working relationship with many businesses and is often able to place students in these industries, which often employ our students. Students also help keep instructors up to date on current industry methods and techniques. Students returning from the internship bring a wealth of experience with them. The internship contributes as much to a structured class situation as does the teacher's knowledge.

PLACEMENT

Metropolitan Milwaukee is a rapidly expanding area and the opportunities in the field of ornamental horticulture. New construction brings with it a need for landscaping. The construction program was started by Milwaukee Area Technical College at the request of area landscape contractors who were unable to find enough qualified people to hire. Full courses, garden centers, park departments, landscape companies, greenhouse people and nurserymen all come to campus to interview. Most student placement with employers occurs long before graduation. Many students are offered positions prior to the completion of their course work. Students often start out with a full-time maintenance work and expand into construction work as their finances enable them to purchase tools of their trade.

SEASONAL SEMESTER

Landscaping is a seasonal work. "Therefore, a season school semester is offered to accommodate the upgrading of jobs by people already in the industry. This additional school term begins in November and ends in March. Many people use this to advantage and become students during the time they normally would be unemployed.

CONTRIBUTION

People successfully employed in the industry seem to feel that landscaping and horticulture have a certain dignity. Work, if it is to be fulfilling, should do more than provide support for a person. It should provide a method for the individual to make a contribution to society in his own unique way. Ornamental horticulture allows every per- son to use their own abilities to create a more pleasing environment while working in a highly competitive industry.

SUMMARY

The Vocational Horticulture Program at Milwaukee Area Technical College focuses on developing in students those horticultural skills and understandings they will need in the world of work. Practical "hands on" experience is used to make the program relevant and ease the transition from institutional training to full time employment. Efforts are made to give students the opportunity to apply and test their acquired knowledge under real conditions before they must enter the labor market.

THE ABC AND XYZ OF BEE CULTURE

by A. L. Root, Medina, Ohio

A. L. Root, 1975, 712 pp., $1.25

The ABC and XYZ of Bee Culture is a book standing by itself in the scientific and commercial bee-keeping of bees. The author has consulted learning authorities in respective lines of work and investigation. Several whole research articles are printed or paraphrased by the author. The practical side is not overlooked. There are many practical, tried and true, methods are included.

A varied glossary gives definitions of common beekeeping terms, to aid in understanding technical portions of the book. For finding terms in an instant, a detailed alphabetical index makes research easier.

John A. Root is the son of Ains J. Root and the great grandson of A. L. Root who founded Gladiolus in Bee Culture. This journal has been published since 1873. John A. Root, the fourth generation of Roots, graduated from Ohio Wesleyan University. He serves as Associate Editor of Gladiolus in Bee Culture. The 31st edition of this book was reviewed by Root. A. L. Root.

ABC is an excellent resource book for beginners in beekeeping. As library book or text, this book is excellent for all vocational courses or beekeeping. Young students should be able to use this as a text in setting up projects. Throughout the book there are numerous cases with excellent drawings, photos, charts. There are step-by-step procedures for breeding bees, keeping bees, honey extraction, and frames. Also, the alphabetical index makes it easy for individualized study by the student. If students know their alphabet, they can learn about bees. This book would make an excellent text for college, vocational, or technical schools in agriculture or related courses. Another appropriate title could have been "Everything You Always Wanted To Know About Bees but Didn't Know Where to Look."

Alfred Clark
Myrtle Beach, SC

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Horticulture in the Largest Inland Port

by Rodger E. Palmer

Teacher Education
University of Minnesota

Wayne Faiocield
Agribusiness Instructor
Duluth, Minnesota

Duluth Revisited

Located on the southwestern tip of Lake Superior, Duluth, Minnesota, has the largest inland port in the world. A population of 100,000 people is stretched over 35 miles of steep hills and rocks, with little visible evidence of agriculture or agribusiness except for the harbor. However, approximately 100 agribusiness firms have been identified in Duluth, with grain elevators, forest product firms and horticultural businesses representing the largest subgroups.

Prior to July of 1974, agricultural education in Duluth was identified in the position of an area vocational agriculture program coordinator. Rodger Palmer served in this position from 1968 to 1974 with a job responsibility covering the northeastern one-fourth of Minnesota for a little time for agricultural education in Duluth. There were no secondary programs in agriculture in Duluth, but several short-term adult courses were successfully offered.

During the summer of 1972, Palmer conducted a survey of agricultural business employment opportunities and training needs within the city. A total of 36 firms were approached and showed that 52 employment opportunities would become available over a two-year period following the survey. The results seemed to indicate opportunities and need.

In September of 1972, the Ohio Vocational Interest Survey (OVIS) was given to all 9th and 12th grade students in the Duluth Public School system. There were approximately 1,600 students in each of these grades. The results showed that 16 percent checked agriculture as their first or second choice in the occupational plan category. Twenty-two percent indicated they would enroll in a general agriculture, forestry, horticulture or horticulture program if offered.

At the time, a need was identified for a new type of program to offer agribusiness classes on a split schedule at different high schools in the city. The approval process bogged down in faculty and board hearings when interdepartmental jealousies and a lack of agricultural knowledge surfaced among senate members. Again, another school year started in Duluth without any agribusiness in the curriculum.

A decision was made early in 1974 to request approval for a comprehensive agribusiness program under a new concept. The request met with success, and on July 1, 1974, the program began to physically take shape under the direction of Wayne Faiocield, Duluth's first agribusiness instructor.

Economic Data

What did Faiocield have to work with as a horticultural industry? Prior proposals had outlined employment opportunities, educational needs and the economics of horticulture in Duluth, but none contained economic data in the industry.

In 1974, just prior to Palmer's departure from Duluth to the University of Minnesota, he concluded a study, "Significance of the Horticulture Industry in Duluth." The study was completed with economical data, and the first time added the economic dimension. Table 1, Economic Data, reports the findings.

Table 1: Economic Data

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**Horticultural Occupations**

The secondary agribusiness coop program is a one-year, on-the-job placement program with related classroom instruction. Over the past two years, this program has had the cooperation of 42 different businesses for training stations. A total of 80 students have been placed in a variety of businesses including several stations each in wholesale greenhouses, retail florists and garden centers. Other employment areas included a retail store, City Parks and Recreation Department, State Park, Department of Natural Resources, City Hall (grounds and flower beds), nurseries, landscapers, and major contractors (area around church, flower beds, etc.) and private homes or estates.

Employers have indicated to Faiocield that they are well pleased with the quality of student performance after they have taken some of the basic agribusiness courses. Most employers have sought students with some training or experience.

**Future Plans**

Faiocield and Palmer have kept close contact over the past three years while the Duluth program was developing. Both agree that the future is bright for the entire program, but especially in the horticulture area. A prominent greenhouse/nursery owner in Duluth once remarked: "Yes, we know that ornamental horticulture products are considered in the horticulture classification in terms of spendable dollars, and that our success is tied closely to the economy, but our industry will grow as more people become enlightened and aware of the aesthetic and therapeutic value of our product!"

It will continue to be difficult to inform the 5,000 eligible secondary students in the five high schools in Duluth about the program, and to achieve a fair student selection. But hopefully, future program expansion will accommodate more students and at the same time generate an expanded industry opportunity. It is believed that a continued high-quality training program will give students the necessary experience and skills to secure a position in the expanding horticulture industry.

**THE AGRICULTURAL EDUCATION MAGAZINE**

Rodger E. Palmer 
"The Significance of the Horticulture Industry in Duluth," Professional Papers, School of Agriculture, University of Minnesota.
Meeting the Needs of Students Who Plan Careers in Ornamental Horticulture Occupations

by

J. C. Simmons
Area Supervisor
Louisiana

Zachary High School is located twelve miles from the city limits of Baton Rouge, Louisiana, the capital of the state and a highly industrialized urban center. The school has had a very active vocational agriculture department for several years. Production agriculture was the major curriculum followed until it became obvious to the teacher and the school board that Zachary was becoming more and more urbanized as a result of the expanding population of nearby Baton Rouge.

ADMINISTRATIVE SUPPORT

Through cooperation and interest of the principal and school board personnel, the local teacher of agriculture initiated a curriculum designed to train students in ornamental horticulture. The vocational agriculture/agribusiness department now devotes about 75 percent of the instruction to training students in the area of ornamental horticulture.

The administration, seeing the need for changing the curriculum, has been quite cooperative in providing facilities required for instructional purposes in ornamental horticulture. The department has two greenhouses measuring 22' x 52' with a 60' x 60' shade house. There are also media bins for potting and mixing soil, sand, and other media. A cold frame was also constructed. Each greenhouse is equipped with an automatic mist system.

OPPORTUNITIES FOR EXPERIENCE

Additional training is received by the students as a result of their experiences in managing three golf greens. An interested citizen in the community became aware of the excellent program being conducted in the school and has donated the use of a three acre plot to be used as a laboratory.

One of the major responsibilities of the department is the upkeep of the campus relative to landscaping. A few years ago, a new school plant was constructed and the students were assigned the task of preparing the landscaping plan for the new facility and also assisted in the actual job of carrying out the landscaping plan.

The DEPARTMENT

This is a one teacher department with an enrollment of 105 students. The Vocational Agriculture Education Department at Louisiana State University uses the existing facility as a training center for student teachers.

A well-planned and effective classroom instructional program is conducted. The teacher has taken advantage of several in-service workshops from which he has gained additional knowledge and skills relative to teaching horticulture.

FACILITIES

The use of the several facilities at the school, including the two greenhouses, the laboratory plot, and the main campus, have greatly enhanced the learning situation of the students. After gaining a good basic knowledge through their classroom programs, these vocational agriculture students become more and more involved in the actual "hands on" phase of the program contained in the above "hands on" opportunities. Many of the students are from urban areas, but have become very interested and outstanding students in the program.

CONTINUED MEETING THE NEEDS...

The two greenhouses are used continuously by the students. They also take very seriously their responsibilities toward the upkeep of the plants and lawn of their campus. This results in many excellent opportunities related to learning situations. The campus of Zachary High School is a source of pride to the parish school system. The three acre laboratory plot offers unlimited opportunities for advanced training as well as opportunities for the beginning students.

STUDENTS AND THE COMMUNITY

Students from the department have the opportunity to participate in the Cooperative Agriculture Education (CAE) Program. Through this on-the-job training program, selected students may be placed in commercial nurseries in the surrounding school area. This results in additional knowledge of the work within the field of horticulture.

An open house is held each year making it possible for parents, school officials and others to visit the department and observe the results of the program. The Zachary High School FFA Chapter Ornamental Horticulture judging teams have consistently placed high in area and state competitions, indicating the effectiveness of the instruction they receive. Several graduates have been employed in this type work, while others are enrolled in horticulture on the college level.

A major newspaper in the state has devoted a full page to this educational program each of the past two years using color pictures of products raised by the students.

In summary, observation of this very successful program indicates that high school students having the opportunity to put into practice skills in which they receive basic instruction in the classroom by "doing."
SOMETHING NEW UNDER THE SUN—
EXPECTING THE UNEXPECTED

Michael Montavon Assistant Professor
SUNY Agricultural and Technical
College Cobleskill, NY

FROM THE PLANTS THEMSELVES

Great interest arises during vegetative propagation — at doos a number of new plants. In order to propagate new plants, students cut up snake plant leaves, discard begonia leaves (at the vein), cut the leaf, make terminal cuttings (at a 45 degree angle) to the stem) and plant all cuttings in peat moss moist by automatic misting systems.

Air layering, another method of vegetative propagation, practiced by students, entails lightly cutting into the outer layer of the branch, placing a plastic bag filled with moist rooting media around the cut and enclosing it in place. Wait about eight weeks, separate the newly rooted stem from the mother plant, and then pot it up.

In the course of work and study, students unintentionally provide evidences of soil compaction, over-fertilizing, insect infestation, over-watering and otherwise-affected plant life. They learn to identify problems from the plants themselves.

Sometimes “aids” are used for demonstration, one being a blue-colored fertilizer. After fertilizing, students inspect soil, examine the roots, and note the extent of water penetration. Eyes usually open wide.

First seedlings placed under a cover of glass, inadvertently produced a student generated demonstration in the form of changing demonstration, insects, fungi, mold — and all by the very simple act of neglecting to remove the glass after germination, for ventilation purposes.

DIGGING DEEPER

Results of student projects are organized and discussed at the SUNY Agricultural and Technical College. Students are also encouraged to share their stories and findings with other students.

Application of too much growth retardant results in misshapen plants, flowers, or an undesirable flower color or size.

Soil media from a nearby lake, homemade potting soil, or a commercial soil mix. They may see plants grown on greenhouse floors or on benches. The greenhouse may be of glass or plastic. They may feature tropical plants or traditional cut flowers. Watering may be done by hand or with automatic watering systems. Work may be automated or entirely hand performed. High intensity discharge lamps (which increase production in the winter months up to 100%) may be used — or the sun may be used exclusively. Greenhouse crops may be grown for local consumption or for out-of-state production, in which case, plants will be shipped soult, transplanted, grown, harvested, and returned to the user in crates of cabbage, tomatoes, broccoli, etc. Organic or inorganic methods may be used.

Visits to research centers such as those at the College of Agricultural and Life Sciences at Cornell offer new methods, variables and controls. Students may see new plant colors, textures, and varieties with newly developed cultivars or developed cultivars. Also, students might watch a winter fly in a biological control experiment.

When visiting, students also observe repairs, renovation, innovations, and occasionally new installations, as when we visited Gary Arbonnet, the Brooklyn Botanical Garden's newest addition. Here we watched underground irrigation systems being installed. Also, we saw how outdoor microclimates (using hill, vole and swamp) were being created, using trees to protect plants from the wind; for shade, for moisture control, for their acidity, and their effect on temperature, etc.

Back in 1968, the Cobleskill students began to develop a college arboretum (under faculty supervision). Students did all of the work — clearing the land, planting, pruning, mulching, grafting, and identifying and classifying flora and fauna. A tree farm was established in 1971 to encourage students to plant trees. The newly planted trees are located on the college campus, and they are accessible to all students.

The novel becomes commonplace as terrariums, dish gardens, ground covers, and a variety of other plants and flowers are used to create a living environment. The students' projects are then evaluated and discussed in class, and the students are encouraged to share their findings with other students.

SO YOU WANT TO RUN A GREENHOUSE?

In the course of learning to run a greenhouse successfully, students learn to test soil, to test the plant leaf tissue, in order to spot soil deficiencies. All of these actions with house plants knew that too much or too little light can kill a plant. Students learn to judge light intensity requirements for a broad range of plants. Humidity and temperature are also crucial. In “hands on” courses, students learn to tend air circulation systems, automatic watering systems, and master spraying equipment.

Throughout the ages, man has been ingenious in developing labor-saving devices. His cunning quite naturally included the greenhouse. He invented the bell, the tropic, the louver, the pleather, the shading, the splicing, the piping, and the master sprayer and more.

Finally, a fast, efficient way to get the job done is to use a master spraying equipment. The novel becomes commonplace as a new generation of students and teachers take up the challenge of creating a living environment. The greenhouse is then evaluated and discussed in class, and the students are encouraged to share their findings with other students.
A CHANGING PROGRAM
IN GREENVILLE

by
J. T. Black
Vo-Ag Teacher
Greenville Senior High School
Greenville, SC

The shifting from agriculture production to ornamental horticulture and its related areas has ravaged the vocational agriculture department at Greenville High School. The change began developing shortly after 1950, the year the first greenhouse was constructed by the agriculture students. Since the school is located in a city of 60,000 people, production agriculture did not hold the interests of the students.

Classroom training in the vocational agriculture department centers around the ornamental horticulture program and jobs related to horticulture. Approximately 125 students from grades 9 through 12 are involved in the vocational agriculture classes, with a one teacher department.

The curriculum includes Agriculture Science & Mechanics, Ornamental Horticulture, Landscape Designing, and Small Engine, and FFA Program of Work. The program provides the non-academic and the academic student with a course offer in which he or she can reach a certain degree of success.

In the Greenville area, jobs are available for part-time and full-time employment in ornamental horticulture. The program has 22 students working part time, mostly with florists, greenhouses, and nursery. Several former students are majoring in ornamental horticulture in college. Eighteen are employed full time in horticulture work.

TEACHING METHODS

Some of the teaching methods used to keep the students interested are:

CLASSROOM DISCUSSION with visual aids, panel, individual study, group discussion, student assistance, creating interest in the horticulture in the local area is used.

LABORATORIES include the 11 acres of school grounds, 2 greenhouses, husk or shade house, school court, students' homes, and one or more park areas. The students observe plants in the greenhouses, such as bulbs, bedding plants, and perennials. Shrubbery cuttings are rooted and grown in containers in the last year. The school court is used as a teaching laboratory with practical instructions given in landscape designing and planting; lawn establishment and maintenance; rose culture; perennial flower bed care; and care and maintenance of shrubbery.

AN AGRICULTURAL SHOP for the purpose of instruction in plumbing, welding, carpentry, electricity, repair and maintenance of small engines, and surveying is available. The skills are important in ornamental horticulture work.

FIELD TRIPS are taken to local greenhouses, nurseries, and garden centers to study management and operational functions.

PROJECTS in local grounds improvements are done at the student's homes. Also complete landscaping of one or more homes each year is accomplished.

DEMONSTRATIONS, such as making display signs for garden centers and nurseries; selecting ideal shrubbery in structure, demonstratingsalem'; and others are conducted.

FFA PROGRAM OF WORK

The FFA chapter program works is the key to the agriculture department's success in holding students. A number of FFA activities that are developed around ornamental horticulture are utilized in the chapter.

1. In the BOAC program, in which a unit of ornamental development is taught, the students participate in a community beautification program. Over 100 students take part in this community activity. Landscaping projects are carried out in the chapter BOAC program. Plants and shrubs used in landscaping are grown by the students in the student nursery. Since the beginning of the BOAC program the chapter has received 2 Governor's Citations and a special award in Kansas City.

2. Ornamental horticulture judging of nursery and florist stock is carried out by the chapter. The chapter represented the state in the first national contest.

3. The chapter was state winner in the Cooperative Extension Contest in 1976. One of the cooperative projects was to set up a seed crop. Students were offered 50 shares for one dollar each. They then worked to grade the soil, planting the seeds and maintaining the area. At the season's end, the dividends were divided evenly among the seed holders. The students earned a profit and learned the workings of cooperatives.

4. Several proficiency awards in which students were state winners include: Agricultural Sales and Services, Nursery judging, Farm and Field Improvement, Soil and Water Management, Agricultural Processing, and Electrification.

CONTINUED SOMETHING NEW . . .

Some terrariums and succulents culture are based on indoor landscaping principles going into this year.

SOLID SKILLS

Student projects, no matter how small, are an example, bringing about transplanting skills, fining the correct techniques, the ability to prune, grade and size, and other skills to hybridize plants. Plant reproduction, preparing seed and soil manipulation, and environmental control obviously affect the quality of the final product and judgment. In addition, students become proficient in marketing, design, and arrangement.

EXHIBITS

The largest and most exciting student exhibits are the campus greenhouse. Here, according to the time of year, you will find students working on the various projects I've alluded to above. The greenhouses are open to visitors, faculty, staff and anyone else who shows an interest.

Other on-campus exhibits include special classrooms demonstrations, coolers; (cut flowers), special experimental projects and campus gardens. (Alumni Day, graduation, inaugurations, and dinners). Off campus, Colebrook has been praised for dramatic and colorful exhibits in Alabama's Coliseum Mall, at the Sunset Fair, at New York florist industry shows and the North East Nurserymen's Convention. Exhibits, covering many square feet, may duplicate Japanese tea gardens, or a fountain as a focal point or simply be mound upon mound of flowers and greenery.

In addition to creating exhibits, students also visit others in the form of estate such as Pennsylvania's Longwood Gardens or Washington, D.C.'s numerous beautiful gardens and parks. Other club and faculty excursions have led north into Canada and south into the Catskills.

Contact with the world of work is not confined to field trips. The flower growers, the associations and the representatives of the industry come to Colebrook and discuss innovation, product development, student work and the flower market in general. Visiting lecturers and exhibitors share much in common with our students. Their love of growing things seems to draw them together even over long distances.
The Challenge—To Meet The Needs of the Rapidly Expanding Horticulture Field

by Russell C. Bird
Horticulture Instructor
Suffolk County BOCES I
Riverhead, NY

The vocational horticulture instructor is confronted with many challenges. These challenges emerge as a result of the needs of the horticulture industry. In order to determine these needs, we must have input from all segments of our industry. After these needs have been determined, we must implement a well-planned program of instruction to fulfill these needs.

METHODS OF OBTAINING INPUT FROM THE HORTICULTURE INDUSTRY

There are many ways in which horticulture instructors may obtain and collect information from the horticulture industry. We can and should obtain input from our craft advisory committee, which is an excellent source of information. Craft committee members should be representative of all areas of the horticulture industry. As teachers, we can develop and distribute written surveys to members of the industry which can be channeled back to our craft advisory committee. A personal visit to those in the industry would also aid us in determining needs.

In my experience, a personal visit to a horticultural business is an effective means of obtaining information from personnel in the industry. One benefit as an instructor by on-site visits to a horticultural enterprise by soliciting both the personnel and the business to share their opinions as instructors.

In order to obtain maximum output, there must be constructive input. Therefore, it is necessary to read the current literature and information which is disseminated to us. This affords another opportunity to keep us informed about current trends occurring within our industry, and to keep abreast of the research and new sprout from private industry and our universities. Periodically, we should write a professional article to appear in a magazine such as The Agricultural Education Magazine so that we may contribute to the research and new information which our students can be an effective means of obtaining information. A concerted effort by members of the industry, local residents, students, and professional colleagues to provide input about the needs of the industry is necessary and valuable in fulfilling the horticulture program plan of instruction.

IMPLEMENTING THE PROGRAM

The craft advisory committee's expertise should be utilized at this stage of planning as well. After ideas are presented and compiled, the craft committee should be formed. Members of this committee may then develop a proposed plan of instruction. This may be accomplished by stating your objective, defining your criteria, and planning a method to meet this objective. After these have been determined, you must have a sense of measuring the students' readiness to progress to the next grade level. Once you have determined the student's readiness to progress to the next grade level, you must have a sense of measuring the students' readiness to progress to the next grade level.

The other day I met a former agricultural student who is now a successful farmer. Mark Blanchette graduated from the Essex Junior Agricultural High School thirty years ago. He is now a successful farmer. Mark Blanchette's experience is an excellent example of how students can be successful in the horticulture field. His experience is an excellent example of how students can be successful in the horticulture field.

The incorporation of a home food production curriculum in our horticulture programs would provide students with practical skills for lifelong use. These skills can be beneficial to students in their future careers. It is essential that horticulture students learn to use these skills in their future careers. It is essential that horticulture students learn to use these skills in their future careers.

The head writing is on the wall. Let's make fruit and vegetable production at home an integral part of our horticulture programs.

Then, perhaps our students may also follow in the footsteps of historical, Mark Blanchette, at their agricultural education as the most meaningful and vital part of their high school training. Let's not let them down.

CONTINUED THE CHALLENGE . . .

SUMMARY

It is my belief that this is a workable plan which will benefit both the student and the instructor as well as the horticulture industry. Of course, one should set criteria for a long-range plan which would cover two years of horticulture instruction. A well-planned learning packet could be developed to help the student and the instructor as well as the horticulture industry.
Integrating Horticulture into An Existing Ag Program

by Nancy Panada, Horticulture Instructor
South Central Area Vocational School
Hendricks, IN

"Some things never change." Hopefully that statement doesn't apply to many high school agriculture departments. At high school change is sometimes forced by the needs of the students, many agriculture departments have the opportunity to offer new courses. If they are receptive to change, that new course could be horticulture.

Horticulture is a popular subject that attracts students who wouldn't normally enroll in agriculture classes.

In areas that are becoming more urbanized, it offers an off-the-farm vocation. It is also a topic of great interest for adult classes. Horticulture is relatively easy to add to an agriculture program. Several topics covered in regular agriculture classes are also a part of horticulture. Soil types, fertilizers, and plant growth characteristics are similar for both subjects.

STEPS FOR STARTING

There are several steps to take when starting a horticulture program. First of all, the teacher must decide what course(s) to teach. The most popular courses are Greenhouse Management and General Horticulture. Other possibilities include Nursery and Garden Center Management, Landscaping, Turf Management, Vegetable and Fruiting Production, and Floral Design. The decision of what course to teach should be based on student interests, facilities and equipment available, and local opportunities for employment.

RESOURCES

After deciding which subject to teach, the agriculture teacher will need to look for resources with which to learn about that horticultural area. An excellent resource would be an advisory committee, just for horticulture. They can make suggestions on what topics to include in the course. They can also show the agriculture teacher some of the common practices used in growing or selling horticultural products. An advisory board is the best resource available when any questions arise with which the teacher is unfamiliar.

Another resource might be a horticulture teacher in a neighboring high school. That teacher can tell a new agriculture teacher about the things that did and didn't work in their department.

The State Department of Vocational Education and the Agricultural Education Staff at the state university often can be of assistance. They may have sources listing where to find texts, reference books, course guidelines, and equipment.

Textbooks and reference books may come from a variety of sources. Texts written especially for high school horticulture programs are published by several universities. Many of the sources that handle agricultural curriculum materials also have horticulture materials. Reference books may be found in bookstores, in college campuses, or ordered directly from a publisher. It might be helpful to review the chosen textbook with the advisory board for any suggestions they may have.

EXPERIENCE

In addition to the resources mentioned, a horticulture teacher should try to get some actual experience in the horticultural field. Classes in horticulture would profit from some hands-on experience. The best experience would be to work in a horticulture business. This could be arranged through a member of the advisory board on weekends or during the summer.

After a program is set up, it may be publicized throughout the community. In addition to being good advertisement for the department, it will inspire ample enrollment in the class.

EQUIPMENT

The equipment needed for a horticulture program depends on the type of course being taught. It can range from very little equipment to a completely automatic greenhouse. A greenhouse is an excellent teaching aid. Funds and space are available. The lighting set up in the back of a classroom could take the place of a greenhouse. Special drafting equipment would be needed for landscaping classes and landscape design.

A horticulture program can add new life to an existing agriculture program without much effort. Come see your agriculture program benefit from a horticulture class.

Leader in Agricultural Education:

JAMES P. CLOSE

by William B. Richardson

James P. Close has established himself as a leader in agricultural education. His service to agriculture has earned him two states. His work in developing the agricultural education program in Indiana was substantial. The quality of his vocational agricultural programs in Indiana is in large part directly attributable to his efforts. He is continuing that tradition now in Virginia.

Colleagues have described Jim as a warm and approachable instructor, a teacher, and a friend to his students. He is respected in his circle of friends and by his profession. His reputation is well known in the state and in the nation.

Jim's service began as a vocational agriculture instructor at Marksville, in February, 1947. During his first teaching experience he taught agriculture and general science in 1951. He was a graduate student at Purdue University and a graduate instructor in 1951-52. He returned to the high school as a vocational agriculture instructor in 1952-53 and served until 1955. He returned to Purdue in 1955 when he returned to Purdue as a graduate instructor, a position he held until 1956. From 1956-1962, Jim served as an assistant professor and associate chairman in the Department of Agricultural Education at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. For four years in the summer of 1967, Jim served as acting director of the Division of Vocational and Technical Education at VPI & SU. He has now returned to his present position.

As stated in the introductory section, Jim has become nationally known due to his service to agriculture, his open and friendly approach to students and his ability to establish rapport with the practicing teacher of agriculture. As with many of the recognized leaders, a review of their resumes reveal many activities that explain their rise to prominence as a leader. . . Jim is no exception. The following sections will highlight some of Jim's more notable career activities.

Jim has served the profession in many capacities, namely: Secretary-Treasurer of the Agricultural Division, American Vocational Association; Chairman of the Teacher Education Committee, Agricultural Division, American Vocational Association; Vice-President and Chairman of several committees of the American Association of Teachers Education in Agriculture (AATEA); Vice-President of the American Association of Vocational Instructional Materials (AAVIM); National Vice-President and President of the National Future Farmers of America Alumni Association; and member of the National Future Farmers of America Board of Trustees.

In both Virginia and Indiana, Jim has worked closely with the Vocational Agriculture Teachers Association of both states. Jim has appeared on the annual conference program many times and was the keynote speaker for the Indiana Vocational Agriculture Teacher Association Conference in 1976. In Virginia Jim meets regularly with the VAATA officers and served as the keynote speaker at their annual conference in 1975.

Jim was also instrumental in the activities of the Indiana Vocational Association (IVA). He chaired and served as a member of key committees and in 1969 the IVA honored Jim with its Award of Merit Citation.

Jim has been active in the National Vocational Agriculture Teacher's Association (NVATA). Due to his work for NVATA he was awarded the Outstanding Service Award in 1972.

(Concluded on page 141)
Horticultural Occupations Still Growing!

by Elga L. Easter, Horticulture Instructor
Virginia Beach Vocational-Technical Education Center
Virginia Beach, Virginia

Horticultural Occupations
...continued

CONTINUED... by...Elga L. Easter

Horticultural Occupations

By Elga L. Easter, Horticulture Instructor, Virginia Beach Vocational-Technical Education Center, Virginia Beach, Virginia

As the pace of our times increases, more and more people are turning to gardening as a relief. Many people have more leisure time as the four day work week becomes a part of the business world. There is a general feeling that people are turning back to nature itself, and thereby developing a new awareness for the basic needs of life. Horticulture is this renewed interest in working with live plants, especially among the younger generation of our population. Furthermore, the population increases daily, demanding that even more goods and services be provided to fulfill the ever growing needs.

**Horticultural Goods and Services Needed**

Among these goods and services that are needed to fulfill the needs of our expanding population are many that lie in the horticulture industry. The challenge is being met thus far. In 1959, there were only approximately 819 greenhouse vegetable producers, but in 1970, this number had grown to approximately 2,500 producers nationwide. Field grown vegetable producers have also increased, as well as the market for flowers and cut plants.

The population has found that not only do they enjoy gardening, but there is a need for more goods and services. Thus, as the population grows, the state, and national parks take on an important role. Parks must not only be well taken care of, but must be well maintained. These tasks are being done properly, as well as fertilized and trimmed. Forest control, as well as insect and disease control, must be considered as well.

There are the trees, shrubs, and the flowers that must be cared for in the proper manner. Thus, parks management requires someone with training to make it a place that can be put to use and enjoyed by all.

Let us look at just a few other situations that require goods and services of a horticultural nature. Business establishments require that their grounds have a neat appearance at all times. Many business houses have large grounds, so they are located in an industrial park with large grounds. Construction of homes, businesses, and offices is again on the upswing. Many (probably most) of these buildings must be landscaped and the lawns established, which they must be maintained. Plants must be produced for use inside these buildings. The number of commercial establishments has increased, as has the number of plants needed to maintain the buildings.

**Horticultural Occupations**

Occupations for those trained in horticulture are many and varied. Some occupations require a college degree, while many require only some training or apprenticeship. Most employers prefer to have a person who has some actual work experiences to supplement his education or training.

Then, one can see that the population continues to increase, as do the needs for goods and services in all aspects of our economy. Horticultural occupations will increase, as will the number of students interested in the industry. New programs are being initiated, and the agricultural education program is growing.

As noted above, the horticultural industry has been growing rapidly, and the need for goods and services continues to increase. The demand for horticultural services is increasing, and the need for trained personnel continues to grow. The demand for horticultural goods and services is increasing, and the need for trained personnel continues to grow.

**Degree in Horticulture**

A degree in horticulture can be earned through a university or in a community college. It may be a two-year associate degree or a four-year bachelor's degree. A degree in horticulture is a good preparation for a career in agriculture.

On the national level, the U.S. Department of Agriculture reports that the number of degrees awarded in horticulture has increased significantly over the past decade. This increase is due in part to the growing demand for horticultural professionals.

In addition, increases in the number of students enrolling in horticulture programs is also seen as a result of the increased demand for horticultural professionals. As the demand for horticultural professionals grows, the number of programs offering these degrees is also increasing.

**Vocational and Career Education**

The U.S. Department of Agriculture, through its extension programs, offers a variety of resources to help individuals interested in horticulture.

The American Society for Horticultural Science, through its extension programs, offers a variety of resources to help individuals interested in horticulture.

In conclusion, the need for horticultural professionals continues to grow, and the demand for horticultural goods and services continues to increase. The demand for horticultural professionals continues to grow, and the demand for horticultural goods and services continues to increase.

**References**


**Discussion Questions**

1. How is horticulture education changing to meet the increasing demand for horticultural professionals?

2. What resources are available to those interested in horticulture education?

3. How can horticultural education be improved to better prepare students for careers in the horticulture industry?

**Conclusion**

In conclusion, the need for horticultural professionals continues to grow, and the demand for horticultural goods and services continues to increase. The demand for horticultural professionals continues to grow, and the demand for horticultural goods and services continues to increase.
ANALYSIS OF THE BATH COUNTY HORTICULTURE PROGRAM

by Jimmie Walton

Agriculture Instructor
Bath County High School
Owingsville, Kentucky

The Bath County High School Vocational Agriculture Department, located in a non-industrial and rural farming community of Kentucky, involves one hundred and twenty students and two instructors. Instruction is provided in three areas: agriculture, agriculture mechanics, and horticulture. The Bath County Horticulture Program is presently in its tenth year of existence, with one hundred and twenty-seven individuals having graduated. The program is a two years in length, with the first year devoted to basic horticulture theory and greenhouse management, and the second year consisting of landscaping, flower arranging, and advanced greenhouse operation.

The horticulture program has six principles of philosophy:

1. Developing skills necessary to enter the field of employment as a greenhouse worker
2. Learning safety and displaying such knowledge by not having any accidents on the job with tools
3. Developing skills to become a gardener, a greenhouse worker, a cemetery caretaker, etc.
4. Being able to name each tool on the job and demonstrate its use, if such tool is related to basic horticulture
5. Preparing for higher education and advanced vocational training as those who are capable
6. Developing the ability to get along with others.

When these principles are carried out, individuals should be more capable of functioning within society.

To have a more complete follow-up of graduates of the horticulture program, the need for an analysis of the former students was strongly felt, since only the graduates of the program could give an accurate criticism of the program. They have experienced the philosophy of the Bath County Horticulture Program, and are more able than anyone else to say if it has fulfilled their needs.

PURPOSE

The primary purpose of the study was to determine if the horticulture program was giving the graduates a quality education, relevant to their agriculture education and their ability to function and make a living in society.

To accomplish the stated purpose, twenty specific objectives were set forth. Some of these were:

1. To determine the number of ex-students who are or have been employed in the field of horticulture
2. To determine the benefits of studying horticulture for the student
3. To determine if the horticulture program prepares students for advanced training in horticulture
4. To determine if the horticulture program should be extended beyond two years
5. To determine if belonging to the FFA helps develop leadership abilities

RESULTS

Objective 1 — The largest number of ex-students have been employed in the field of horticulture. One third of the graduates seemed to study horticulture as a part time pursuit, and not as a major factor in their personal development, and not as a source of livelihood.

Objective 2 — The horticulture graduate felt that the greatest benefit of the program was being able to landscape and substitute for better judgment in buying plants and fertilizers.

Objective 3 — The majority felt the program would prepare an individual for advanced training even though a large percent did not take advanced training.

Objective 4 — This is one question about which the individual who returned the questionnaire felt very strongly. They definitely believed the program should be more than two years in length. They recommended it for four years. They recommended it for four years.

Objective 5 — The FFA is definitely a leadership source for students. Practically all students, who were members, genuinely enjoyed their experiences and believed it helped their leadership abilities.

CONCLUSIONS AND RECOMMENDATIONS

These conclusions were drawn from the analysis:

1. The horticulture program has been a success since it has enriched individuals' lives.
2. The six principles of the philosophy of the horticulture program are being met.
3. The FFA is a strong organization of men and women which helps develop their leadership abilities.

The following recommendations were made concerning the analysis, based on the research data collected and the judgment and experience of the writer.

1. The horticulture program should be extended beyond two years, preferably to four years, but at least to three years.

2. The FFA should continue to be a vital part of the horticulture program, as it is now.

3. The horticulture program should be continued to prepare men and women for the world of work and to develop in them an appreciation for their environment.

Starting in the next school year, plans are being made to broaden the horticulture program to three years. The analysis has been extremely helpful in evaluating the horticulture program and constantly striving to give the students a quality education.
STORIES IN PICTURES

by
Paul W. Newlin

[Images of various agricultural activities and students in a greenhouse setting.]

A student in the landscaping course at the Coastal Co., NY, Bowen Center of Occupational Education operates irrigation equipment. The course instructor is Gordon White. (Photo courtesy Art Boley, Cornell)

Students at Bath County High School, Owingsville, KY, serve a gathering of plastic for use with greenhouses in the upland. (Photo courtesy Jeanie LePage, Bath Co. High School. Related story on p. 147)

This student practices pruning skills as part of the instruction in landscape maintenance at the Milwaukee Area Technical College, WI. (Photo courtesy Glenn Patrick, Instructor. Related story p. 128)

Out-of-school youth and adults learn related market skills during an Orientation to Vocational Agriculture (OVA) program at the Nassau Co., NY, Board of Educational Services and Interpretive Center. (Photos courtesy Art Boley, Cornell)

Floyd Yerby, Vocational Agriculture/Agribusiness Teacher at Zachary High School, Zachary, LA, instructs students in the identification of Citrus' most common pests and diseases. The instructional program in horticulture is expanded to open up many opportunities to learn by doing. (Photo courtesy J. C. Stengel, Supervisor, LA. Related story p. 130)

AGRICULTURAL EDUCATION

Volume 50 Number 7 January 1978