Technology Transfer

A Review of Certified Nursery Personnel Programs in the United States

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Summary. Nursery personnel certification programs are designed to advance professionalism throughout the nursery and garden center industry. Certified nursery personnel may be perceived more favorably by their employers, peers, and, most important, by the public they serve. Certification programs currently are conducted in 39 states. Many state nursery or related organizations also offer landscape certification programs; however, such programs are not addressed here.

Purpose. Many state nursery associations in the United States have developed a system of training, testing, and certifying nursery personnel. The purpose of certification is to recognize and upgrade the image of certified individuals. Certification indicates that a person has a higher level of horticultural knowledge and related practices than non-certified personnel. Programs of professional certification are endorsed by most state nursery associations, but are not enforceable by the state's nursery industry or its department of agriculture. The plurality of benefits to the individuals involved and the industry, however, provide strong incentives to become certified. Most states refer to the individual as either a certified or accredited nurseryman or certified nursery professional. However, some states designate titles, such as the Indiana Accredited Plantsman or North Carolina Plantsman.

Certification benefits. Nursery certification programs benefit the employee, employer, and the customer. Benefits to the employee include 1) employer recognition of moti-

vated employees, thus improving the employee's image and status in the company; 2) fellow employees recognize certified individuals as experts on a range of horticultural topics; 3) national recognition for newly certified individuals as their names are published in national nursery trade magazines; and 4) possible monetary rewards or promotion.

Benefits to the employer include 1) certified individuals possess the horticultural knowledge needed to work directly with consumers; 2) certified nursery personnel will usually seek advancement, and thus are productive employees; and 3) employers may advertise that employees are certified. This advertisement may create a marketing advantage.

Benefits to the consumer are evident in customer satisfaction derived from dealing with certified individuals as opposed to noncertified sales people.

Eligibility. Most nursery organizations require 1 to 2 years of work experience prior to certification; in some states college credits may substitute partially for work experience. Most states make no distinction among full- or part-time employees nor those who have only recently reentered the nursery industry. The main criterion for eligibility is a minimum number of hours in a nursery operation that is recognized by its state department of agriculture. Work experience, when required, ranges from 90 days to 3 years. One to 2 years of full-time attendance in a post-high school institution (horticultural curriculum) is generally equivalent to one-half of the total work experience required. In some states, such as Arkansas, New Mexico, and Pennsylvania, college education may be considered in lieu of on-the-job experience. Several of the New England states have the highest work experience requirements of 3 to 4 years. Most of these states, however, lower the requirement when at least 1 year of college credit has been completed. In 24 of the 39 states, practical work experience is required for eligibility regardless of college hours accrued, including an earned horticulture baccalaureate degree. Most states require verification of work experience from the employer of the individual seeking certification before or soon after the examination is taken. In some states, the individual must have gained experience from an employer who is a member in good standing with the state's nursery organization. In most states, out-of-state nursery employment is recognized at least in part towards the work experience requirement. Prior out-of-state certification, however, is not recognized by most state nursery organizations.

Reciprocal certification agreements exist among some states, including Virginia with North Carolina and South Carolina, and Washington with Oregon. Washington and Oregon co-sponsor a manual that is used by both states. Idaho and Montana use the manual and program designed by the Idaho Nursery Assn. Montana pays the Idaho Nursery Assn. for all of the rights and privileges an Idaho Certified Nurseryman obtains. In other states, nonmembers of the state nursery association are not allowed to proceed with certification. Some state certification committees do not require a minimum number of work hours for the individuals who are owners or officers of a nursery firm. Certification includes a code of ethics or contract that varies widely in content among states. Some states reserve the right to request individuals that recertify to sign again the code of ethics statement.

Certification manual. All states offer a certification manual as the primary educational material for preparation

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Table 1. *Typical topics included in a certified nursery personnel manual.*

Instructions, plant list, and sample questions
The nursery industry
Plant parts, functions, growth and development
Introduction to nomenclature
Landscape plant materials
Plant hardiness zones
Interior plants
Fruit and nut trees
Vegetables and herbs
Annuals, perennials, and bulbs
Poisonous plants
Product display marketing
Outdoor container gardening
Landscape design
Xeriscaping
Landscape construction
Landscape contracting
Turfgrasses and their management
Weeds and weed control
Mulches
Soils
Plant nutrition
Plant propagation
Pruning
Plant pests and diseases
Applying pesticides correctly
Diagnostic key to plant problems
Planting procedures
Landscape crew efficiency and relationships
Maintenance of the newly installed landscape
Nursery and garden center maintenance
Receiving commercial shipments
Handling and overwintering nursery stock
Professionalism in the nursery industry
Selected laws and regulations
Nursery publications
Mathematical formulas and conversions
Grades and standards

in becoming certified. Certification study manuals vary widely in length, depth, and number of topics addressed. Manuals may discuss topics beyond those related to ornamental horticulture, such as fruits, vegetables, and herbs. Similarly, testing generally covers all topics that could be encountered in a retail nursery.

Certification manuals usually are written or edited by a committee of the state association. In most states, industry leaders are selected to author chapters based on the topics in which they have expertise. Varying amounts of assistance are provided by land-grant university professors of horticulture. In other states, such as South Carolina, the state extension specialists are the principal editors and authors and may also be involved in writing the tests. Universities often provide supplemental literature in the form of fact sheets, pesticide updates, etc. A typical table of contents from a training manual is shown in Table 1. Some organizations relay to the candidates for certification that what is not covered in the examination will be acquired from practical experience. This is part of the rationale behind many state organizations not waiving the practical experience requirement.

In addition to the study manual, 31 of the 39 states offer short courses or study sessions to aid individuals in preparation for the examination. These may be offered during annual conferences or other meetings related to the association membership. They may be offered through regional technical colleges as well. Some states, such as Arizona, offer extensive preparation in addition to the manual (3. 5-h lectures, once a week for 4 weeks before the test), while Connecticut has initiated a 13-week program of 90-min lectures once a week before the examination. In place of intensive personalized training, some states substitute additional study materials such as slide sets, videotapes, or sample examinations to complement the manual.

Examination. Testing methods vary widely among state associations, with some administering relatively short examinations and others giving multiple-part tests with an average of 4 h allowed for completion. In most states, the examination is divided into three parts: 1) general information, 2) woody plant identification, and 3) a hypothetical landscape design.

Most general information tests are prepared directly from a manual provided by the state's nursery association. Nearly all of these tests include true/false and multiple choice questions, with few or no essay questions. Plant identification consists of visual recognition of several commonly used landscape plants to be identified by their scientific and common names, or selection of the species that best fits the written descriptions. In states such as Arizona, both types of identification examinations are administered. Last, a landscape plan must be prepared according to selected criteria of that association. This may include drawing a plan to scale, complete with a legend. Delaware requires, in addition to the general examination, that all candidates pass at least one of six specialty examinations that build upon the general examination. The individual is then recognized as having expertise in that specialty. This program of obtaining a specialty is mandatory, and differs from advanced certification programs in other states. Advanced certification programs are optional once the standard examination is passed and standard certification is awarded. Some state nursery organizations have identified a need for advanced certification. California, Texas, Maryland, Michigan, Indiana, Delaware, and Georgia all offer such programs. California offers specialty programs such as irrigation, turfgrass management, and insects, diseases, and weeds. The advanced personnel are recognized by a separate certificate for each examination passed. The remaining states offer advanced training, all of which usually is distinguished from the basic certification program by at least a higher acceptable minimum score and other means of recognizing such individuals from the normal training offered by the state.

All states require a minimum score for each part of the examination or for the average of all test sections. Required scores for most states range from 60% to 90%. Scores normally are not adjusted relative to other students' performance (curve not used). When multiple-part tests are conducted, normally a minimum score must be achieved in each section rather than an overall average. This prevents an individual from passing the examination without a working knowledge of any given subject area. Most state organizations require the student to only retake failed sections; however, some states expect the entire test to be retaken if any section is not passed.

Table 2. *Organizations administering a certified nursery personnel program.*

Alabama Nurserymen's Assn. P.O. Box 9 Auburn, AL 36831 phone 205/821-5148 fax 205/821-5148	Louisiana Assn. of Nurserymen, Inc. Burden Research Plantation 4560 Essen Lane Baton Rouge, LA 70809 phone 504/766-3471 fax 504/766-3664	Ohio Nurserymen's Assn., Inc. 2021 E. Dublin Granville Rd., Suite 185 Columbus, OH 43229 phone 614/431-2452 fax 614/431-8032
Arizona Nursery Assn. 1430 W. Broadway, Suite A-125 Tempe, AZ 85282 phone 602/966-1610 fax 602/966-0923	Maine Nurserymen's Assn. PST/SMTC South Portland, ME 04106 phone 207/799-7303 fax 207/767-2731	Oklahoma State Nurserymen's Assn. 400 North Portland Oklahoma City, OK 73107 phone 405/942-5276 fax 405/942-5276
Arkansas Nurserymen's Assn. P.O. Box 250763 Little Rock, AR 72225 phone 501/225-0029	Maryland Nurserymen's Assn. P.O. Box 432 Perry Hall, MD 21128 phone 410/256-1799 fax 410/256-2208	Oregon Assn. of Nurserymen 2780 South East Harrison, Suite 102 Milwaukie, OR 97222 phone 503/653-8733 fax 503/653-1528
California Assn. of Nurserymen 4620 Northgate Blvd., Suite 155 Sacramento, CA 95834 phone 916/567-0200 fax 916/567-0505	Massachusetts Nurserymen's Assn. P.O. Box 706 Leominster, MA 01453 phone 508/534-1775 fax 508/534-1777	Pennsylvania Nurserymen's Assn. 1924 North Second St. Harrisburg, PA 17102 phone 717/238-1673 fax 717/238-1675
Colorado Nurserymen's Assn. 9101 E. Kenyon Avenue, Suite 3000 Denver, CO 80237 phone 303/770-3343 fax 303/770-1812	Michigan Nursery and Landscape Assn. 819 North Washington Ave., Suite 2 Lansing, MI 48906 phone 517/487-1282 fax 517/487-0969	Rhode Island Nurserymen's Assn. 64 Bittersweet Dr. Seekonk, MA 02771 phone 508/761-9260 fax 508/761-9620
Connecticut Nurserymen's Assn. 24 West Road, Suite #53 Vernon, CT 06066 phone 203/872-2095 fax 203/872-6596	Minnesota Nursery and Landscape Assn. P.O. Box 130307 St. Paul, MN 55113 phone 612/633-4987 fax 612/633-4986	South Carolina Nurserymen's Assn. 809 Sunset Dr. Greenwood, SC 29646 phone 803/223-7278 fax 803/223-5785
Delaware Assn. of Nurserymen 331 Merrill Way Smyrna, DE 19977 302/653-1021	Mississippi Nurserymen's Assn., Inc. P.O. Box 5385 Mississippi State Univ. Mississippi State, MS 39762 phone 601/325-3935 fax 601/325-8379	Tennessee Nurserymen's Assn., Inc. P.O. Box 57 McMinnville, TN 37110 phone 615/473-3951 fax 615/473-5883
Florida Nurserymen and Growers Assn. 5401 Kirkman Rd., Suite 650 Orlando, FL 32819 phone 407/345-8137 fax 407/351-2610	Missouri Assn. of Nurserymen Route 1, Box 175 Clarksdale, MO 064430 phone 816/369-2005	Texas Assn. of Nurserymen 7730 South IH-35 Austin, TX 78745 phone 512/280-5182 fax 512/280-3012
Georgia Nurserymen's Assn. 190 Spring Tree Rd. Athens, GA 30605-2418 phone 706/548-1257	Montana Assn. of Nurserymen P.O. Box 1871 Bozeman, MT 59771 phone 406/586-6042	Utah Assn. of Nurserymen 3500 South 900 East Salt Lake City, UT 84106 phone 801/487-4131 fax 801/487-2030
Illinois Nurserymen's Assn. 1717 south Fifth St. Springfield, IL 67203 phone 217/525-6222 fax 217/525-6257	New Jersey Nursery and Landscape Assn., Inc. 65 South Main St. Building A, Suite 3 Pennington, NJ 08534 phone 609/737-0890 fax 609/737-7794	Vermont Plantsmen's Assn. P.O. Box 1433 Blush Hill Rd. Waterbury, VT 05676 phone 802/244-7048
Indiana Assn. of Nurserymen, Inc. 716 Elberta Dr. Vincennes, IN 47591 phone 812/882-8284 fax 812/885-4266	New Mexico Assn. of Nursery Industries 3820 Midway Place N.E. Albuquerque, NM 87109 phone 505/345-7799 fax 505/345-8989	Virginia Nurserymen's Assn. 383 Coal Hollow Rd. Christiansburg, VA 24073 phone 703/382-0943 fax 703/382-2716
Iowa Nurserymen's Assn. 7261 N.W. 21st St. Ankeny, IA 50021 phone 515/289-1790	New York State Nursery/Landscape Assn. P.O. Box 657 Baldwinsville, NY 13027 phone 315/638-8589 fax 315/638-8569	Washington State Nursery and Landscape Assn., Inc. P.O. Box 670 Sumner, WA 98022 phone 206/863-4482 fax 206/863-6723
Kansas Assn. of Nurserymen 411 Poplar Wamego, KS 66547 phone 913/494-2418 fax 913/452-2066	North Carolina Assn. of Nurserymen P.O. Box 400 Krightdale, NC 27545 phone 919/266-3322 fax 919/266-2137	

Table 3. A comparison of nursery personnel certification standards across the United States.

State	Eligibility requirements	Study materials and support	Examination structure	Minimum score (%)	Administering institution	Recertification requirements
Alabama	1 year ^z	Manual, classes	General ID	70 ^y	ANA	5 years ^x
Arizona	1 year	Manual, classes	General ID, land. design	70	ANA	3 years
Arkansas	1 year or hort. deg.	Manual, classes	General ID, land. design	75	ANA	3 years
California	18 months or 3120 h	Manual, classes	General ID, land. design	70	CAN	2 years
Colorado	2 years or 4000 h	Manual	General ID, land. design	75	CNA	3 years
Connecticut	Employed by nursery	Manual, classes	General	70	CNA	Lifetime
Delaware	3 years or 2 years + 2-year hort. deg. or 1 year + 4-year hort. deg.	Manual, classes	Core exam, one to six specialty exams	75	DAN	3 years
Florida	90 days	Manual, classes, ID	General ID	70	FNGA	3 years
Georgia	6 months (negot.)	Manual, classes	General ID	70	GNA	Lifetime
Illinois	4000 h or 2000 h + 2 years college	Manual	General ID	70	INA	3 years
Indiana	None	Manual, classes	General	80	INA	Lifetime
Iowa	1 year	Manual, classes	General ID, land. design	75	INA	Annually
Kansas	6 months or 1 year part	Manual, classes	General ID, land. design	80	KAN	Annually
Kentucky	6 months or 500 h part	Manual	General ID, land. design	70	KNA	Lifetime
Louisiana	None	Manual, classes	General ID	70	LAN	Lifetime
Maine	2 years or 1 work year + 1 year of college	Manual, classes	General	70	MNA	3 years
Maryland	3 years or 2 years + 2 years of college	Manual	General ID	70	MNA	3 years
Massachusetts	3 years or 2 years + 2 years of college	Manual, classes	General ID	70	MNA	3 years
Michigan	1 year	Manual, classes	General ID, land. design	70	MNLA	Annually
Minnesota	2000 h or 1 year of college with internship	Manual	General ID, land. design	75	MNLA, U of M	3 years
Mississippi	6 months	Manual, classes	General ID	80	MNA, MSU	Lifetime
Missouri	1 year or 1000 h part	Manual, classes	General ID, land. design	60	MAN	Annually
Montana (uses Idaho's system)						
New Jersey	2080 h	Manual, classes	General ID	70	NJN&LA	Annually
New Mexico	2 years or hort. deg.	Manual, classes	General ID, land. design	70	NMANI, NMSU	3 years
New York	1 year	Manual, classes	General ID	75	NYNLA	5 years
North Carolina	1 year	Manual, classes	General ID	70	NCAN	Lifetime
Ohio	6 months or 5000 h part	Manual, classes	General ID	72	ONA	3 years
Oklahoma	1 year	Manual	General ID, land. design	70	OSNA	3 years
Oregon	1 year	Manual	General ID, land. design	70	OAN	3 years
Pennsylvania	2 years or 2-year hort. deg.	Manual, exam syllabus sample exam	General, land. design	80	PNA	Lifetime
Rhode Island	3 years or 2 years work + 2 years college	Manual, classes	General ID, land. design	80	RINA	3 years
South Carolina	None	Manual, classes	General ID	80	SCNA, CU	Lifetime
Tennessee	90 days	Manual, classes	General ID	70	TAN	3 years
Texas	6 months or 500 h part	Manual, classes	General ID	70	TAN	Annually
Utah	1 year or 1 year of college	Manual, classes	General ID, land. design	90	UANLC	5 years
Vermont	3 years	Manual, classes	General ID	70	VPA	Lifetime
Virginia	None	Manual, classes	General	75	VNA	Lifetime
Washington	1 year	Manual, classes	General ID, land. design	70	WSNLA	3 years, then life-time

^yHours, months, and years listed denote actual work experience required unless otherwise indicated by part-time work substitution and/or partial or full waiver with years of college or degree.

^xThe average score necessary to pass each section of the certification examination. A higher overall average may be required by some states.

^zThe time before recertification is required. Fees, however, may be required at more regular intervals for some state associations.

Note: The majority of nursery organizations allow for flexibility or deviation from the above standards on a case-by-case basis.

Maintaining eligibility. Most states do not grant lifetime certification status. Many states that currently offer lifetime status plan to eventually implement a recertification policy. To encourage ongoing education of a certified individual, most states require recertification every 3 to 4 years. Ongoing certification fees, however, often are re-

quired yearly before recertification is required. Recertification classes are offered by both industry leaders and university personnel in most states. Examinations rarely are retaken if the employee attends the required number of continuing education units (CEUs), short courses, or obtains points that often are offered at trade shows or annual

nursery conventions. In addition, a recertification fee must be paid. In most cases, if the individual fails to recertify by the deadline, the original process, including the full examination, must be repeated.

Certification administration. State certification programs are administered by a variety of methods. The nursery association's executive director normally supervises a certification committee that includes key industry members and university representatives. A list of organizations administering certification programs is given in Table 2.

Future of certification programs. All state organizations that have pursued the initiation of certified nursery personnel programs have found them to be beneficial to all involved. Although time-consuming to the certification

committee, manuals and overall certification programs are updated constantly to help the nursery employee stay abreast of new developments in ornamental horticulture and its allied fields. A comparison of the states' certification programs is outlined in Table 3. Many states have modified neighboring states' certification programs to satisfy unique situations in their area. In future programs, it may be advantageous for state nursery organizations to coalesce, and perhaps standardize, certification procedures across geographical regions within the United States. The infrastructure to implement this already exists with regional organizations such as the Southern Nurserymen's Assn., Eastern Regional Nurserymen's Assn., Western Assn. of Nurserymen, and the New England Nurserymen's Assn.