

# Horticultural Training in the Federal Republic of Germany

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## HISTORY

When tracing the roots of horticultural training in Germany, one must go back to the Middle Ages with the founding in 1276 of the first gardener's guild on German-speaking territory in Basel (now Switzerland), where the institutionalized training of the rising generation of gardeners began. During the Middle Ages, guilds formed in all trades. Free craftsmen organized themselves into guilds to carry out their joint profession and to determine and regulate economic conditions. Guilds also determined and conducted training of apprentices for the first time. A gardener apprenticeship usually began at age 15 and lasted for 3 years, after which the trainee was deemed a "trained gardener".

In the 19th century, special schools for gardeners were established, with the first being opened in Berlin-Schöneberg in 1824. Shortly thereafter, additional horticultural schools were established in other German cities, such as Stuttgart-Hohenheim (1824), Erfurt (1852), Hamburg (1866), Braunschweig and Proskau (1868), Geisenheim (1872), Stettin (1877), Berlin, Breslau, Karlsruhe, and Nürnberg (1885–86).

In 1919, after World War I, the idea arose to choose especially well-run, well-equipped, and well-qualified nurseries for apprentice training. These nurseries, called "certified training sites", had to undergo inspections from time to time to assure maintenance of high standards.

In 1920, the "vocational school" system was developed, in which apprentices also were obliged to attend theoretical classes during their apprenticeships. Today, an apprentice must attend classes at a vocational school for at least 1 day per week. These schools were developed further until 1939. After World War II, a series of new laws served to reorganize this system and to fully establish it in the training program.

Parallel to the training of gardeners on a practical level, the pos-

sibility of a higher, i.e., "academic", training in the horticulture field was established in Germany for the first time in 1929–30. At this time, the first professorial chairs for the horticultural subjects of fruit and vegetable cultivation as well as for floriculture and general horticulture were established at the Agricultural Univ. of Berlin, thus enabling students to specialize in the horticulture field. At the same time, the first horticultural training and research centers were established in Germany, which trained horticultural technicians and, at the same time, carried out research. Thus, three levels of training had formed: the practical level, finishing with the title "certified gardener/horticulturist"; the intermediate, practical/theoretical training level, finishing with the title "horticultural technician"; and the academic level, ending with a diploma degree. After World War II, all three levels were further developed and amended as described below.

## PRESENT-DAY SITUATION

To evaluate fully the current practical and theoretical horticultural training in the Federal Republic of Germany, it seems necessary to provide a few statistics regarding our current horticultural production (Table 1).

Horticultural training possibilities currently offered in the Federal Republic of Germany are: a) apprenticeship ending with the title "trained gardener/horticulturist" (horticultural journeyman) and a further training level finishing with the title "master gardener/horticulturist", both concentrating solely on the practical aspects of the profession; b) an intermediate training level ending with the title "certified horticultural technician", which is composed of both practical and theoretical education; and c) academic training at engineering academies and universities, the former being theoretical with an emphasis aiming at practical application, and the latter being more theoretical-scientific, both ending with the degrees "certified

Table 1. Horticultural production in the Federal Republic of Germany 1984–85 (commercially managed areas).

Horticultural specialty	Cultivated area (ha)		Value of output (million DM) <sup>2</sup>
	Under glass	In the open	
Vegetable crops	1222 <sup>x</sup>	54,148 <sup>x</sup>	1248 <sup>y,w</sup>
Fruit crops	--	54,391	2581 <sup>y,w</sup>
Flower and foliage crops	2435 <sup>y</sup>	3,465 <sup>y</sup>	1808 <sup>y</sup>
Nursery produce	---	18,927 <sup>y</sup>	764 <sup>y</sup>

<sup>2</sup>1DM = approximately US \$0.56.

<sup>x</sup>1984.

<sup>y</sup>1985.

<sup>w</sup>Including the value of output in private gardens.

<sup>z</sup>Reference: AIPH 1985.

Table 2. Number of horticultural training sites in the Federal Republic of Germany as of 1986.

School form/ training site	Number	Title/degree after completing training
Vocational schools	100	Trained gardener/horticulturist <sup>z</sup> (certified horticulturist)
Master schools	12	Master gardener/horticulturist <sup>y</sup>
Technical schools	7	Certified horticultural technician <sup>x</sup>
Engineering academies	7	Certified horticultural engineer (EA) <sup>w</sup>
Universities	4	Certified agricultural engineer (U) <sup>v</sup>

<sup>z</sup>Together with practical training.

<sup>y</sup>After at least 3 years of experience as a trained horticulturist.

<sup>x</sup>Seven master schools are also technical schools.

<sup>w</sup>Some engineering academies do not have all horticultural branches.

<sup>v</sup>Some universities do not have all horticultural branches.

Table 3. Number of apprentices in the horticulture trade as well as the number of examinations for the titles of trained gardener/horticulturist and master gardener/horticulturist in the Federal Republic of Germany as of 31 Dec. 1984.

Major field of training	No. of apprentices			No. of examinations for the title	
	Male	Female	Total	Trained gardener/hort.	Master gardener/hort.
Floriculture	5,621	5269	10,890	3891	310
Vegetable production	614	379	993	352	66
Tree and shrub production	2,201	940	3,141	1235	128
Fruit production	203	46	276	95	41
Plant breeding and seed production	62	28	90	48	---
Landscape architecture	4,266	866	5,132	1829	193
Cemetery management	479	327	806	290	28
Total:	13,473	7855	21,328	7740	766

Table 4. Number of horticulture and landscape architecture students in the Federal Republic of Germany at engineering academies and universities in 1985.

Total no. of students			No. of final examinations		
Horticulture	Landscaping	Total	Horticulture	Landscaping	Total
<i>Engineering academies<sup>2</sup></i>					
1128	2717	3845	206	433	639
<i>Universities<sup>3</sup></i>					
1254	2286	3540	94	161	255

<sup>2</sup>Berlin, Essen, Geisenheim, Höxter, Nürtingen, Osnabrück, Weißenstephan.<sup>3</sup>Berlin, Hannover, Weißenstephan, Kassel.

horticultural engineer" or "certified landscaping engineer".

The current system of training horticulturists is diagrammed (Fig. 1) and described as follows. The first portion of the pathway involves grade school and secondary school (9 school years), followed by horticultural apprenticeship, with 1 year of basic training (4 days of school and 1 day of practical work per week), and 2 years practical apprenticeship (4 days of practical work and 1 day of vocational school per week). This is followed by examination for the title "trained gardener/horticulturist"; practical experience for 3 or more years as a trained horticulturist; a 1-year master course; and an examination for the title "master gardener/horticulturist".

Alternatively, after finishing the 10th school year in secondary school and practical training as an apprentice, and then 2 years of technical school, the candidate finishes as a "certified horticultural technician". It is also possible to change over to this training pathway after finishing a master course.

The third path begins after completion of the 10th grade in high school, by transferring to a 2-year vocational high school, ending with a vocational qualification to attend an engineering academy; or, after finishing the 13th grade in high school, which qualifies the student for attendance at an engineering academy or university, and completing a 12-month practical term or a 2-year apprenticeship, then at least six, usually seven to eight, semesters at an engineering academy, ending as a "certified engineer (EA)".

In the last pathway, after finishing high school, the candidate is qualified to attend a university, with at least a 6-month practical term in a nursery (currently often replaced by a 2-year apprenticeship); and courses for at least eight, usually nine to 10, semesters finishing as a "certified engineer" (U). It is then possible to become a candidate for a doctorate degree, finishing off with a PhD in agriculture/horticulture.

Various occupations after finishing training in each of the different training levels are possible: The "trained gardener/horticulturist" would be eligible for specific, more or less professionally exacting tasks, which may arise in a nursery, with special responsibility for the care and cultivation of the cultures entrusted to him or her. When especially trustworthy, the responsibility for part of a nursery may be assigned.

"Master gardener/horticulturists" obtain employment as a foreman or head gardener of an entire production or service nursery, or as an independent entrepreneur. In certified training nurseries, he or she can assume the responsibilities of training apprentices.

A "certified horticultural technician" could be hired by nurseries as a foreman or head gardener; or by garden and cemetery bureaus of cities and townships; by horticultural marketing establishments

such as central markets, auctions, or garden centers; by pesticide and fertilizer industries as a consumer consultant; by technical industry producing for the horticultural trade; by government as a consultant; or by institutes and research centers as a technical employee.

A "certified horticultural engineer" (EA) might have a career as an independent assessor or consultant in the public service or in extension services; as a participant in industry or in third-world development projects; or as an administrator in marketing establishments, cooperative societies, or associations. They are also employed by horticultural publishing companies, by large production and service nurseries, or in research activities as a technical assistant, often in highly responsible and independent positions.

A "certified landscaping engineer" (EA) would perform plan-

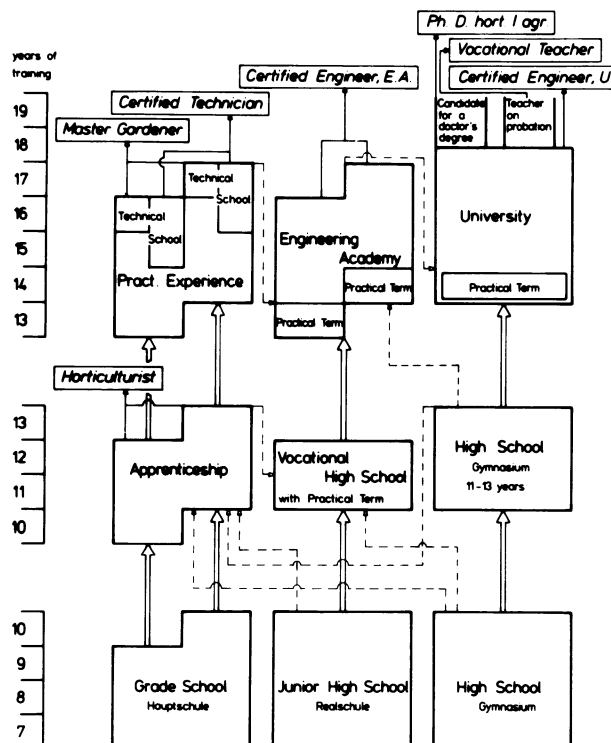


Fig. 1. Horticultural education and training in the Federal Republic of Germany (Ref. AID-Broschüre No. 389 Ausbildung im Gartenbau).