
SUGGESTIONS FOR PRIMARY AND INTERMEDIATE GARDENING TEACHERS.

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Gardening teachers should possess an absorbing interest in the subject, successful experience in growing vegetables and in caring for school grounds; also a thorough knowledge of the fundamental principles of agriculture and of teaching. This preparation may be secured through practical work in gardens and school grounds, observation of model training classes, practice teaching, and classroom instruction.

The model gardens for pupils in the grades are important because they tend to fix in the minds of students standards which they will afterwards try to maintain in their own schools. Working in these gardens and observing the methods in use impresses upon students the requirements of the Bureau of Education in the most convincing way possible. For practical work there must be an area containing space sufficient for each student to have a garden of his own. There must also be space for model primary and intermediate gardens to be cultivated by the pupils in the training classes.

The primary garden should, of course, be laid out in accordance with the requirements of the Bureau of Education as outlined in General Instructions No. 22, s. 1916, and in Bulletin No. 31 (revised). In addition there should be a few model home gardens, as it is impracticable in Manila for all pupils and students to maintain gardens at their own homes. Experience has shown that in the vegetable garden the most convenient width of the plot is one meter. The paths should be from 20 to 30 centimeters wide. The handwheel, hoe cultivator should be used for cultivating field crops unless animals are available. The use of this implement should be encouraged.

The students, teachers in training, should cultivate vegetables and field crops in plots not less than 100 square meters in size. All crops grown in the Islands should be raised by the students and utilized in so far as possible. Experience has shown that a considerable number of useful vegetables are quite unknown to some students and in certain localities. Vegetables worthy of introduction, such as roselle, endive, okra, basella rubra, native improved lima beans, Lyon beans, and Indian cucumber should be grown. The intermediate garden should contain plots of pineapples, papayas, legumes, yams, corn, and vegetables. There should be a seed house, a sanitary closet, and a compost heap.

The corn should be in one large field and the vegetables in another. The larger the fields the more the garden will suggest a small farm. Everything possible should be done to give the students the idea of cultivating a large area rather than small units.

One of the worst agricultural practices in the Philippines is the waste of vegetable matter. Never burn or throw away any vegetable matter except diseased plants and weeds bearing seeds. The compost heap is always useful, first as a convenient place to throw refuse vegetable matter, and later as a deposit from which may be obtained the best possible soil for seed boxes and potted plants.

A nursery is an important part of the garden and in it should be propagated several kinds of shrubs and trees for use and ornament. In this way the student will become familiar with their names and characteristics, with the propagation and planting of fruit and shade trees, and also with the more easily grown ornamental plants such as *acalypha tricolor*, *pisonia alba*, *duranta*, *odontenema*, *grapto phyllum*, *bougainvillea*, *allamanda*, *violetas*, *panax*, palms, ferns, and Japan ivy.

Practical work and classroom instruction can be combined advantageously. At the opening of school in June, the garden should be green with a leguminous cover crop which should be turned under, thus affording an object lesson in green manuring. Further instruction can be given in the classroom after the rush of work in the garden is over. The work of spading and raking the garden offers an opportunity for teaching correct methods of preparing the ground for planting, a very important matter. The greater part of every school garden should be planted to legumes in June in order that they may get a good start for the rainy season. If local conditions warrant, corn may also be planted. Other crops suitable for the rainy season may be planted in smaller areas, and thus the student can learn how best to utilize the garden, and what vegetables to grow. In the same manner he can be taught what vegetables are most suitable for the remainder of the year. Emphasis should be placed on the fact that the garden must be planted with a cover crop, preferably Lyon beans or patani, early in February in order that it can get well started before the ground becomes too dry. If desired, corn may be planted with the legumes. After the harder work is finished, necessary classroom instruction may be given on these matters.

Work on school grounds is a necessary part of the training of a gardening teacher. Here he learns more about the char-

acteristics and the care of the ornamental plants which he has propagated in the nursery, and he also learns how to group them effectively. Training in the planting and care of school grounds should result eventually in beautiful public and private grounds throughout the Philippines.

The student should study the civico-educational lectures. Everything possible should be done to bring about a realization of the value of this means of reaching the people of the community: The reports required by the Bureau of Education are necessary and must be submitted promptly, neatly, and accurately. The student should realize this fact and should learn how to make them. Undoubtedly agricultural clubs can be used very effectively to further the interests of gardening and of agriculture. The student should become familiar with the organization of at least one such club.

During the school year the student enters into many activities which are properly a part of his training for teaching gardening. One of the most important of these is the proper celebration of arbor day. The student learns that the program of the day, in addition to the planting of trees and shrubs, should consist of athletics, a literary and musical program, and whenever possible, refreshments prepared by the domestic-science classes. The entertainment should be made both interesting and instructive. The best speaker obtainable should always be secured to talk on some subject related to the occasion. The student should become familiar with literature issued by the Bureau of Education bearing upon tree planting and arbor day. It is exceedingly important that he come to realize the necessity of conserving and also of planting forests in the Philippines.

Although practical work is of most importance, nevertheless attention should be given to classroom work. The texts prescribed by the Bureau of Education and also the various circulars, and other publications of the Bureau that bear upon gardening should be studied. The students ought to become interested in farm literature. For this purpose as much use as possible should be made of the publications of the Bureau of Agriculture, of "The Tropical Agriculturist," "The Country Gentleman," and of any clippings from other current periodicals. The students should learn to refer as often as need may arise to such valuable books as Soule and Turpin's "Agriculture" and MacMillan's "Handbook of Tropical Planting and Gardening." It is believed that these and similar publications will always afford inspiration. The teacher of gardening needs not only instruction and experience but also interest, enthusiasm, and inspiration.