

Research Article

Applying a Community Garden Model to Conserve the Medicinal Plants

An Nguyen Thi Ngoc*

University of Natural Science, Vietnam National University, Ho Chi Minh City, Vietnam

Abstract

On the occasion of Congress of the Communist Party, the local government delivers everyone, each community, make one work such as: an opposition of blooded water, an environmental hygiene, everyone canalizes, a baby garden, a flowers garden, a botanical garden, a garden of ornamental trees, local medical garden, the women produce something, women have animal husbandry. Here, the government wants to make one garden of medicinal trees and they deliver me who build the community garden in local area of the 2 downtown, ward 10 district 6, Ho Chi Minh City, I must find some trees that have a medical utility, plant to cure the diseases for the people and the students have a sample to learn. To make this work, I must go many places to prepare goodly. This is a necessary work. If we have a medical garden, that is to say we have an clear aim such as: a model garden for the 2 downtown of the ward 10, while the other ward does not have because the fund of soil is rare, and the people know the medical trees to cure the general diseases. Besides, we have the documents to teach, too. It is important that we keep the good race, protect the precious race. And everyone wants the climate which becomes goodly, it is agreeable, cool... Within a U figure garden of size 9mx6m, I collected about 73 medicinal species to plant. Most of these plants had use as a food plant to improve the health in local region. We collected and analyzed quality of water, soil, we have a choice to plant in garden. This is useful and necessary work to do. If everyone has soil, it will good to plant medicinal garden.

Keywords

Garden, Student, Sample, Race, Specie, Diseases

1. Introduction

Formerly to now, there are many kinds of garden such as: a vegetable garden, a garden of trees, a garden of orchid, a forest garden, an orchard, a flower garden, a pleasure garden, a garden and rice-field, a botanical garden, especially a local medical garden, that is a place, conserve many precious races [5]. A garden can improve a micro- climate [9]. A contribution one medicinal garden is very necessary and useful in order to use theses trees, it helped to the live of men [5, 10].

Everyone forms the particular garden. Example:" a college,

a hospital, a hotel... Everyone did not put the garden in the ward, therefore, it hasn't the author who studied about this issue. We think that we must have many medicinal plants, medicinal gardens [1, 2].

2. Materials and Methods

1) Materials: The soil sample in the downtown 2, ward 10,

*Corresponding author: ntnan9999@gmail.com (An Nguyen Thi Ngoc)

Received: 31 March 2025; **Accepted:** 19 June 2025; **Published:** 26 June 2025



Copyright: © The Author(s), 2025. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

district 6, Ho Chi Minh City; Seed:

- We did not buy, we found seeds and trees at the other places, households of men; Water; The organic fertilizers.
- Time of research: since October of 2020 to October of 2021.
- Place of research: The local medicinal garden is according to the local area of the downtown 2, ward 10, district 6, Ho Chi Minh City.

2) Methods:

+ In the nature: we saw and asked the people, the local area. We observed the households,

Researched for the model of trees. We went around, many places of districts. We classified. We prepared a medical garden weeded wild herbs and we barbed wire fence, planted and put name of trees, watered, took care of garden, manured a garden. At last, we made the lists of trees names.

About the fertilizer we use only the organic fertilizer such as: wild herbs, algae, biological fertilizer, powder lime, ash of husk [16]...

+ In the laboratory: we analyzed water and soil sample.

3) Process making:

We barbed wire fence, found the big stones, analyzed the soil, water samples to plant. We arranged, divided many parts according to the diseases such as: a headache, a hypotension, a hypertension, a cancer, a backache, an influenza, a belly – ache, a fever, a digestion, an aperient [3, 6]... Then, we put the fertilizers in order improve the soil, found the races, the precious trees, a good kind. Then, we planted who medical trees, we took care of them. At last, we made a list name with a popular name, a scientific name, family and stucked them [6-8].

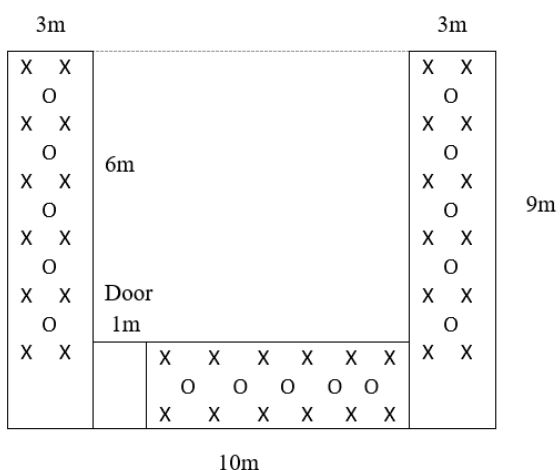


Figure 1. A diagram of local medical garden X, O: Medical trees.



Figure 2. A photo of the local medical garden.

At the door, everyone planted the paper flower, Champax (*Ochna integerrima* (Lour) Merr)

A garden: figure of U, it is 10 meters for a length, 9 meters for a width. In a space of a garden, included 3 stages:

Stage A: 0 – 20cm: stage was near the soil: including Chili pepper, Ginger, Lemon grass, Turmeric...

Stage B: 20cm – 1m: including: Indian mallow, Acid lime, white Mulberry.

Stage C: 1 – 3m: including Guava, Indian Mulberry, Paper flowers, water apple [4]...



Figure 3. Water Spinach.



Figure 4. Chili pepper.

3. Results and Discussion

Table 1. Result analyzed of water in the local medical garden

N ^o	Place	Kind of water	pH	Color (Cobalt)	Degree dirty (F.T.U)	D.O (mg/l)	Organic (mg/l)	NH ₄ ⁺ (mg/l)	Fe (mg/l)	NO ₂ ⁻ (mg/l)	NO ₃ ⁻ (mg/l)	SO ₄ ²⁻ 4 (mg/l)	PO ₄ ³⁻ (mg/l)
1	Downtown 2	Machine water	6.42	< 5	0	3.46	0.90	0	0.15	0	0	12.0	0
2	Downtown 2	Well water	5.93	< 5	0	3.34	0.50	0	0.20	0	0	24.0	0
3	Downtown 2	Pond water	6.11	15	62.0	2.7	2.4	1.2	12	0.04	5.0	16.0	0
4	Limitation values *		6.5-8.5	1.0	2.0	2.0 – 6.0	1.0	0.3	0.5	0.05	0.05	≤ 0.5	≤ 0.1

Note: *According to Vietnam standard/ National Technical Regulation on the limits of heavy metals contamination in food (Vietnamese Technical Regulation 8-2:2011/Medicinal Ministry) [15].

In Table 1: 3 columns of water were low, sour, water of dirty was by garbage.

- 1) Machine water: pH was low, color, D.O, organic substance, SO₄²⁻ were high.
- 2) Well water: pH was low, sour, the parameters can accept

- 3) Pond water: degree of color, of dirty, NO₃⁻, SO₄²⁻ were high, therefore we did not drink, use because it was bad, unclean.

Table 2. Result analyzed of soil sample

Symbol	pH _{KCl} (1:5)	pH _{H2O} (1:5)	EC(1:5) (μS/cm)	N total (%)	K ₂ O (%)	P ₂ O ₅ (%)	Humus (%)	Fe (mg/100g)	Al ³⁺ (mg/100g)	Ca ²⁺ (mg/100g)	Mg ²⁺ (mg/100g)	SO ₄ ²⁻ (mg/100g)	Sand	Clay	Flesh
1A (0-25 cm)	5.31	4.42	44	0.206	0.037	0.146	6.01	121.40	27.01	5.35	2.19	1.32	10	48	42
1B (25-50 cm)	5.10	4.29	50	0.173	0.045	0.084	4.59	151.51	63.21	3.17	1.69	1.35	8	50	42
1C (50-80 cm)	3.98	3.94	795	0.170	0.052	0.105	6.29	151.90	10.66	2.63	1.97	223.8	18	48	34
Limitation values *	6.0	6.5-8.5	10-20	0.1-0.15	0.3-1.5	0.06-0.08	2.0-4.0	0.5	800	4.0-6.0	2.0-3.0	1.0 – 2.0	-	-	-

Note: *According to Vietnam standard/ National Technical Regulation on the limits of heavy metals contamination in food (Vietnamese Technical Regulation 8-2: 2011/Medicinal Ministry) [15].

In Table 2: The soil had pH low, sour soil, the nutrient at the deep area was low, Fe, Al: high.

There are many stone and big stone, trees developed difficultly.

Contents making: A choice of some reasonable trees in

permitting space, medicinal

trees, we planted trees was according to the curing area that we stucked (popular name, scientific name, family), we found 73 names of medicinal trees such as [7, 13]:

Table 3. Trees having in the garden, downtown 2, ward 10, district 6 [8, 11, 12, 14].

N ^o	Vietnamese names	Scientific names	Families
(1)	(2)	(3)	(4)
1	Kiến cò = Bạch hạc	Rhinacanthus nasatus (L) Kurf	Acanthaceae
2	Na = Mãng cầu ta	Annona squamosa L.	Annonaceae
3	Huyết dụ	Cordyline fruticosa var tricolor Hort	Agavaceae
4	Nanh heo	Sansevieria cylindrica Bojer	Agavaceae
5	Lưỡi còp (hồ)	Sansevieria trifasciata Praik	Agavaceae
6	Dền gai	Amaranthus spinosus L	Amaranthaceae
7	Rau m á Nhật	Centella asiatica (L) Urb	Apiaceae
8	Bạch chi	Angenia damunca honmdenth & Hook	Apiaceae = Umbelliferae
9	Đại = Sứ	Plumeria rubra L.	Apocynaceae
10	Huỳnh anh	Allamanda cathartica L	Apocynaceae
11	Ngũ gia bì	Acanthopanax aculeatus Seem	Araliaceae
12	Đinh lăng	Polyscias fruticosa (L.) Harms	Araliaceae
13	Vạn niên thanh = Trầu bà	Aglaonema cochinchinensis Engler	Araceae
14	Thuốc cứu = Ngã cứu	Artemisia vulgaris L	Asteraceae
15	Từ bi = Đại bi	Blumea balsamifera (L.) DC	Asteraceae
16	Cỏ mực = Cỏ lợ nổi	Eclipta prostrata L	Asteraceae
17	Lúc	Pluchea indica (L) Lees	Asteraceae
18	Cỏ h ố = Y ên bạch	Eupatorium odoratum L	Asteraceae
19	Mồng tơi	Basella rubra L	Basellaceae
20	Thanh long (ruột đỏ)	Hylocereus undatus (Haw) Britt & Brown	Cactaceae
21	Trường sinh = Sống đời	Kalanchoe pinnata Pers	Crassulaceae
22	Đu đủ	Carica papaya L	Caricaceae
23	Dây giung = Sứ qu ân tử	Quisqualis indica L	Combretaceae
24	Khoai lang	Ipomoea batatas (L.) Poir	Convolvulaceae
25	Rau muống	Ipomoea aquatica Forssk	Convolvulaceae
26	Lê bân	Tradescantia discolor L'H érit	Commelinaceae
27	Rau trai	Commelina diffusa Burm. f	Commelinaceae
28	B ố đò = B í rợ	Cucurbita pepo L	Cucurbitaceae
29	Cỏ cú	Cyperus rotundus L	Cyperaceae
30	Khoai ngót	Dioscorea alata L	Dioscoreaceae
31	Bồ ng ố = rau ng ố	Sauropus androgynus (L) Merr	Euphorbiaceae
32	Cỏ sữa l áto	Euphorbia hirta L	Euphorbiaceae
33	Chó đẻ = diệp hạ ch âu	Phyllanthus urinaria L	Euphorbiaceae
34	Muồng tr âu	Cassia alata L	Fabaceae
35	Biếc c ây	Clitoria laurifolia Poir	Fabaceae
36	Húng quế	Ocimum basilicum L	Lamiaceae = Labiatae

N ^o	Vietnamese names	Scientific names	Families
(1)	(2)	(3)	(4)
37	Húng lủi	<i>Mentha aquatica</i> L	Lamiaceae = Labiatae
38	Húng cây	<i>Mentha arvensis</i> L var. <i>javanica</i> (Bl) Hook.f	Lamiaceae = Labiatae
39	Nha đam = lô hội	<i>Aloe vera</i> (L) Burm.f	Liliaceae
40	Chi giấp hoa = nhuộm móng tay	<i>Lawsonia inermis</i> L	Lythraceae
41	Bơ	<i>Persea americana</i> Mill	Lauraceae
42	Rau cần (tần) dầy lá	<i>Coleus amboinicus</i> Lour	Lamiaceae = Labiatae
43	Đậu bắp	<i>Abelmoschus esculentus</i> (L.) Moench	Malvaceae
44	Ké hoa đào	<i>Urena lobata</i> L	Malvaceae
45	Đâm bụt = bông bụt	<i>Hibiscus rosa-sinensis</i> L	Malvaceae
46	Mắc cỡ = xấu hổ	<i>Mimosa pudica</i> L	Mimosaceae
47	Đâu tằm = tằm tang	<i>Morus alba</i> L	Moraceae
48	Huỳnh tinh	<i>Maranta arundinacea</i> L	Marantaceae
49	Mận	<i>Eugenia javanica</i> Lam p.p.	Myrtaceae
50	Ổi	<i>Psidium guajava</i> L	Myrtaceae
51	Vối	<i>Cleistocalyx nervosum</i> DC Pham hoang	Myrtaceae
52	Sung	<i>Ficus racemosa</i> L	Moraceae
53	Lan	<i>Dendrobium</i> sp	Orchidaceae
54	Mai	<i>Ochna integerima</i> (Lour) Mess	Ochnaceae
55	Me đất nhỏ	<i>Oxalis corniculata</i> L	Oxalidaceae
56	Cần cua	<i>Peperomia pellucida</i> (L.) Kunth	Piperaceae
57	Bạch hoa xà	<i>Plumbago zeylanica</i> L	Plumbaginaceae
58	Rau sam = Sam	<i>Portulaca oleracea</i> L	Portulacaceae
59	Cau kiểng vàng	<i>Chrysalidocarpus lutescens</i> (Bory) Wendl	Palmae
60	Lá lốt = Lốt	<i>Piper sarmentosum</i> Roxb	Poaceae = Gramineae
61	Sả	<i>Cymbopogon citratus</i> (DC) Stapf	Poaceae = Gramineae
62	Cỏ màn châu	<i>Eleusine indica</i> (L.) Gaertn	Poaceae = Gramineae
63	Nhãn lồng = Chùm bao	<i>Passiflora foetida</i> L	Passifloraceae
65	Đàn dảnh	<i>Gardenia augusta</i> (L.) Merr	Rubiaceae
66	Nhàu	<i>Morinda citrifolia</i> L	Rubiaceae
64	Quýt, cam, chanh	<i>Citrus</i> sp	Rutaceae
67	Nguyệt quới (quýt)	<i>Murraya paniculata</i> (L) Jack	Rutaceae
68	Ớt	<i>Capsicum frutescens</i> L	Solanaceae
69	Nhãn	<i>Dimocarpus longan</i> Lour	Sapindaceae
70	Chôm chôm	<i>Nephelium lappaceum</i> L	Sapindaceae
71	Cách	<i>Premna latifolia</i> L	Verbenaceae
72	Gừng	<i>Zingiber officinale</i> Roscoe	Zingiberaceae
73	Nghệ	<i>Curcuma domestica</i> Valetton	Zingiberaceae

4. Conclusion

Generally, parameters of soil and water were average, we can adapt them in order to make the garden.

When we make this subject, although we did not have expenditures, it was costly, but it had value of big mind, and practical value, it raised a beautiful form, it is the environmental pollution of the air, the climate was cool [9], and having many botanical models for the schoolboy, students learned, it was a source of vegetables, it make many medicinal trees to cure the popular diseases [13], served the people while a source of soil was narrow in the center of city.

Abbreviations

pH	Potential of Hydrogen
N	Nitrogen
Fe	Ferrum, Iron
Al	Aluminum
Ca	Calcium
Mg	Magnesium
SO ₄	Sulfate
P ₂ O ₅	Phosphor Pentoxide
K ₂ O	Kali Oxide

Author Contributions

An Nguyen Thi Ngoc is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

We declare no conflicts of interest.

References

- [1] National Library Medicine “*Medicinal plants*”, Available from: <https://tudien.dolenglish.vn> (Accessed 6 December 2022).
- [2] National Library Medicine “*Medicinal plants*”, Available from: <https://medlatec.vn> (Accessed 10 January 2020).
- [3] National Library Medicine “*Medicinal plants*”, Available from: <https://luongynguyenthithai.vn> (Accessed 2 March 2022).
- [4] An Nguyen Thi Ngoc (1996), Book: “*The necessities trees on garden in the South of Vietnam*”, Agricultural Publishing, Ho Chi Minh City, pages 18 – 20.
- [5] An Nguyen Thi Ngoc (2004), Book: “*Biodiversity- A natural conservation*”, Agricultural Publishing, Ho Chi Minh City, pages 6-10.
- [6] An Nguyen Thi Ngoc (2010), Book: “*The trees to cure the diseases and an environment*”, Agricultural Publishing, Ho Chi Minh City, pages 30, 31.
- [7] An Nguyen Thi Ngoc (2020), Book: “*Biological resources and environment*”, Agricultural Publishing, Ho Chi Minh City, ISBN 978-604-60-3249, pages 22-25.
- [8] An Nguyen Thi Ngoc (2020), Book: “*The trees have oils, essential oils in Vietnam country*”, Agricultural Publishing, Ho Chi Minh City, ISBN 978-604-60-3250, pages 64-67.
- [9] An Nguyen thi Ngoc (2021), Book: “*Plant trees- A conservation of health and environment*”, Agricultural Publishing, Ho Chi Minh City, ISBN 978-604-60-3295, pages 15-22.
- [10] Binh Nguyen Thanh (1963), “*Document of medicament*”, pages 19, 20, 21, 22.
- [11] Ho Pham Hoang (1991 – 1993), Book: “*The trees of Vietnam country*”, Montreal Publishing, pages 22, 25, 31, 33, 45, 46, 48, 50.
- [12] Ho Pham Hoang (2006), Book: “*The medicinal trees at Vietnam*”, Tre Publishing, pages 105, 117.
- [13] Journal “Popular science” (2007), name of title “*Miracle drug*”, Ho Chi Minh City, number 87(825), pages 2,3.
- [14] Loi Do Tat (1997), Book: “*The medicinal trees of Vietnam*”, Publishing of Science and Technology, pages 15, 18, 27, 41, 45, 46, 51, 52, 55.
- [15] Medicinal Ministry (2011), Book: “*National Technical regulation on the limits of metals contamination in food*”, pages 4, 6,8.
- [16] Mui Nguyen Thi Quy (2000), Book “*Fertilizer and uses*”, Agricultural Publishing, Ho Chi Minh, page 1.