

Study about the Environmental Factors, a Use of Wild Plants at the Home-Garden Planting Egg Plants

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Abstract: Vegetables are foods for the men, very nutritious and necessary for them in life; they can't be insufficient, especially, vegetables cure the diseases, too. Here, we want to speak to the egg plants. This is a kind agricultural produce which is planted generally in Vietnam country; the fruits are used to eat, too. Fruits of egg plants are not only eaten but also cure diseases such as: headache, tonic, and help a strong memory; there are reasonable foods for the pours. Besides, the wild plants here can be to cure diseases. In the report, we present food to plant, observe, analyze and study about heavy metals, insects, epidemics on the vegetables and the use of the wild plants in Ho Chi Minh City in order to sure the health and give the nutrient for the persons.

Key words: Vegetables, heavy metals, nutrient, food, persons.

1. Introduction—Reasons of Research

Eggplant has a source from India and Africa. Nowadays, in the Vietnam country, many egg plants are planted for foods, like vegetables.

- General name: Cà tím, cà dái dê, cà trứng;
- Scientific name: *Solanum melongena* L;
- Foreign name: Eggplant, Aubergine;
- Family: Solanaceae.

At Vietnam country, everyone plants many egg plants, mostly in the South of Vietnam.

Egg plants have values of high nutrient, delicious. According to the biochemical faculty, University Ado-Ekiti, Nigeria gives an information that in 100 g of egg plants, it has: Energy: 26 calo; H₂O: 92 g; Protein: 1 g; Lipid: 0.2 g; Glucose: 5.5 g; Fiber: 1 g; Magnesium: 0.12 mg; Calcium: 0.1 mg; Kalium: 220 mg; Natrium: 5 mg; Sulfur: 0.15 mg; Fe: 0.5 mg; Mangan: 0.2 mg; Zinc: 0.28 mg; Copper: 0.1 mg; Beta-carotene: 0.04 mg; Vitamin B₁: 0.04 mg; Vitamin B₂: 0.04 mg; Vitamin PP: 0.6 mg; Folic acid: 17.6 mg; Vitamin C: 1.6 mg [1].

Egg plants are foods that the persons prefer; they grill, boil, cook with other dishes or fry with cooking oil, or pickled cabbage. Egg plants are not only foods,

but also are used to cure diseases such as: egg plants can cure the ulcer or the swollen and boiler places by the method: Egg plants beans face down to cover wound; or grill, ground into powder, mix sesame oil, and cover the wound; fruits are cooked, drink something for a cough; leaves cooking to drink for hemorrhoids; everyone eats egg plants every day, several months in a row to cure liver swelling [2-6].

By COVID-19, the last time, 2021 it was rare vegetables in the Ho Chi Minh City, stagnated or vegetables did not transfer to the city, to the downtown; here, it has many sick people, difficulties with commuting; the house is far from the market, the downtown, the drugstore; therefore, for the common illness, everyone can use the medicinal plants, and plants were in the home-garden. The other authors did not take care about this issue. Thus, we must to study to plant in order to save the health for men [7-9].

2. Materials and Methods

2.1 Materials

+ The experiment was implemented in Xuan Thoi Thuong Village, Hoc Mon District, Ho Chi Minh City.

+ Vegetable samples were collected from vegetable growing households surrounding areas.

2.2 Methods

Egg plants were planted by using with normal fertilizer, the soil samples, heavy metals of egg plants, are analyzed in the laboratory and seeds are kept for races

3. Results and Discussion

- Model of soil:

In Table 1: pH: low; Ca^{2+} and Mg^{2+} : low; N total, SO_4^{2-} : average; P_2O_5 : high; K_2O : low. The soil was poor

and sour, we planted difficultly; therefore, everyone had to add powder lime. ash of husk...

- Model of egg plants:

In Table 2: We see that: Cu, Pb, Cd: high; specially As, Zn: very high; they are on prescribed level (comparing with a regulation); therefore, it must improve the environment, neutral, and use the organic fertilizer.

Thus, in the home-garden, we observed and found total 30 wild species according to 13 families; these wild herbs are used like vegetables, and the wild herbs which everyone used the medicinal in the folk. We have the uses of the following plants.

Table 1 Result analyzed of soil samples.

No.	Parameters	Concentrations	Methods	Limitation values*
1	pH (H_2O) 1:5	5.85	Standard of VN 5979:1995	6.5-8.5
2	pH (KCl) 1:5	5.14		6.0
3	EC ($\mu\text{S}/\text{cm}$) 1:5	52.20	Standard of VN 6650:2000	10-20
4	Ca^{2+} (mg/100 g)	2.97	AOAC 2000	4.0-6.0
5	Mg^{2+} (mg/100 g)	2.24		2.0-3.0
6	N total (%)	2.12	Standard of VN 6445-2000	0.1-0.15
7	SO_4^{2-} (mg/100 g)	1.24	Standard of VN 6456-2000	1.0-2.0
8	P_2O_5 (%)	0.08	AOAC 2000	0.06-0.08
9	K_2O (%)	0.03	AOAC 2000	0.3-1.5
10	Al^{3+} exchange (mg/100 g)	5.88	AOAC 2000	0.1-0.15
11	Sand (%)	44	AOAC 2000	-
	Emery Clay (%)	16		
	Flesh (%)	40		

*According to Vietnam standard/national technical regulation on the limits of heavy metals contamination in food (Vietnam Technical Regulation 8-2: 2011/Medicinal Ministry) [10].

Table 2 Result analyzed of heavy metals in the egg plants.

No.	Parameters	Concentrations	Methods	Limitation values*
(1)	(2)	(3)	(4)	(5)
1	As ($\mu\text{g}/\text{kg}$)	7.41	ACIAR-AAS 001-2007	0.20
2	Cu (mg/kg)	0.577	ACIAR-AAS 015-2007	0.03
3	Pb (mg/kg)	0.087	ACIAR-AAS 015-2007	0.01
4	Zn (mg/kg)	4.91	ACIAR-AAS 019-2007	0.01
5	Cd (mg/kg)	0.040	ACIAR-AAS 004-2007	0.02

*According to Vietnam standard/national technical regulation on the limits of heavy metals contamination in food (Vietnam Technical Regulation 8-2: 2011/Medicinal Ministry) [10].

Table 3 Names and uses of the herbs [8, 9, 11-14].

No.	Quantity	Vietnamese names	Scientific names	Foreign names	Families	Uses
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	+	Cỏ xước	Achyranthes aspera L	Prickly, Chafflower	Amaranthaceae	Seeds help cough, treat rheumatism. Seeds and roots: diuretic
2	+	Nở ngày	Gomphrena globata L	Glob Amarante, Bachelors Button; Marguerite blanche	Amaranthaceae	Flowers make like tea, treat a headache, a fever in children; leaves treat cough, diabetes
3	++	Dền gai	Amaranthus spinosus L	Pigweed; Amarante elpineuse, Epinard cochon	Amaranthaceae	Diuretic, roots and leaves make purge
4	+	Mướp xác vàng	Cerbera odollam Gaertn	Yellow eyed Cerbera	Apocynaceae	Use for cardio-vascular purpose barks makes an ejaculation; fruits make sleep
5	+	Cỏ cú heo	Ageratum conyzoides L	White weed, Goal weed; Ageratum	Asteraceae	Treat the flu. A gonorrhea, shoulder block, to heal a wound
6	+	Cỏ mực	Eclipta prostrata L	Kongolala	Asteraceae	Black hair dying. Treat a disease of kidney, a liver, an asthma, a hemoptysis, a hemorrhoids, stop bleeding
7	+	Chân voi nhám	Elephantopus scaber L	Blephant's foot; Pied elephant, Herbe de la jouissance	Asteraceae	Roots and leaves make cool down, a diuretic, anti-tumor, anti-cancer
8	+	Cỏ chua lè	Emilia sonchifolia (L) DC	Cupid's Shaving Brush; Salade à sapin	Asteraceae	Leaves are used like vegetable. Treat an asthma, a fever, a diarrhea, a fever, an eye disease
9	*	Cỏ hôi = cỏ Lào	Eupatorium odoratum L	Jack in the buds, Siam weed; Langue de chat	Asteraceae	Leaves treat flu; essential oil is antibacterial. Flowers are used like tea, treat diabetes, cough.
10	++	Lúc	Pluchea indica Lees	-	Asteraceae	Treat a back-ache, make cool down. Roots treat a difficulty urinating, a diuretic, an anti-ulcer
11	++	Cúc hoang	Tridax procumbens L	Mexican Daisy	Asteraceae	Leaves are anti-insects, treat a bladder having flaws
12	+	Vòi voi	Heliotropium indicum L	Indian Turnsol; Crête à coq	Boraginaceae	Treat ulcer of neck, urinate, slip of the tongue, swelling
13	++	Màng màng tím	Cleome viscosa L	Seeds are eaten to cure Ascaris	Capparaceae	Trees treat a disease of skin, seeds are chewed to treat Ascaris
14	++	Cứt quạ	Gymnopetalum cochinchinensis Lour Kurz	-	Cucurbitaceae	Treat rash, treat lost menstrual cramps at women
15	+	Cỏ cú	C. rotundus L	Nut grass, yellow nutsedge	Cyperaceae	Treat a diarrhea, regulate menstruation, feel full
16	+	Cỏ chác	Fimbristylis miliacea (L) Vahl	-	Cyperaceae	Treat a fever, get snake known
17	+	Cỏ sữa lông	Euphorbia hirta L	Hairy Spurge, Pill bearing Spure Asthma; Herbe à pilules	Euphorbiaceae	Treat diarrheas pimples, back-ache bronchitis tonic
18	+	Cỏ sữa lá nhỏ	E. thymifolia L	Wart weed, Malome	Euphorbiaceae	Treat the ascaris, diabetes, help have milk, a dysentery, high blood pressure
19	+	Chó đẻ	Phyllanthus urinaria L	-	Euphorbiaceae	Treat a liver, a fever, a kidney, diabetes, anti-biotic, tonic
20	+	Thầu dầu	Ricinus communis L	Castor oil plant; Ricin	Euphorbiaceae	Roots treat back pain, treating rheumatism, sciatica treatment
21	++	Trinh nữ, mắc cỡ	Mimosa pudica L	Sensitive plant, Shame weed; Sensitive	Sub family Mimosoideae	Trees treat the difficulty sleeping, joint pain. Roots treat a diarrhea
22	+	Sục sục lồm	Crotalaria retusa L	Rattle pea; Sonnette jaune, Pois Rombi	Sub family Mimosoideae	Leaves apply medication for scabies
23	++	Cóc kèn	Derris trifolia Lour	-	Sub family Mimosoideae	Bark trees cure back a during menstruation

Tbale 3 to be continued

24	+	Muồng trâu	Cassia alata L	Seven Golden Canlesticks, Wild Senna; Dartrier	Sub family Caesalpinoideae	Treat a perforation disease laxative, a detoxification, cure a ring-worm
25	+	Muồng hôi (thảo quyết minh)	C. tora L	Foetid Cassia, Sickie Senna; Cassia foétide	Sub family Caesalpinoideae	Leaves cure headache, ascariis, scabies, laxative, diuretic, swollen eyes, a liver tonic, a glaucoma...
26	+	Cối xay	Abutilon indicum (L) Sweet	Flowering Maple, Country Mallow, Moon flower	Malvaceae	An Antibiotic, a uterine excitement. Roots cure a dysentery, a fever, cough. Leaves cure laxative, apply a poultice...
27	+++	Chối đực	Sida aucuta Burm. f	-	Malvaceae	Headache treatment, treat low blood pressure, constrict blood vessels
28	+++	Ké hoa đào	Urena lobata L	Indian Mallow; Cousin rouge	Malvaceae	Leaves drink like tea, cure a flu, diuretic, a stomachache...
29	++	Muôi	Melastoma normal D. Don	-	Melastomaceae	An antibacterial, treat the chicken disease
30	*	Cỏ màn châu = màn trâu	Eleusine indica (L) Gaertn	Crab grass, Goose grass; Pied poule	Poaceae	Treat a fever, make a cool liver, low blood pressure

Classifying according to Professor Pham Hoang Ho, book: *Trees of Vietnam country* (2006), Montreal Publishing.

The list of names according to order: A, B, C, D.

Symbol: +: little, ++: average, +++: much, ☆: very much.

4. Conclusion

At the heavy metals, soil samples that we analyzed were poor, sour; in the plantation if the farmers use the chemical fertilizers, it is certain that heavy metals are high; therefore, they must use the organic fertilizer; they will have a good result; the heavy metals were little or no appear.

Egg plants are valuable, foods, many nutrients, and can cure diseases when it is strict; it is precious and here, there are many wild herbs [11]; formerly, everyone does not know them, and throws trash in the trash or no use. Nowadays, everyone takes to make the organic fertilizers or make medicinal to cure for the patients when theirs houses [14]. In these home-gardens, we saw worms, rats..., farmers must kill these insects and animals by hand work, no use insecticides, herbicides [15].

Benefit Conflict

The author agrees that it has not one benefit conflict which is relative with the publishing result.

Contribution of the Author

An Nguyen Thi Ngoc: The author observed, investigated, searched everywhere about the trees,

made the experiments, studies, wrote and prepared, presented a report. We guarantee to talk exactly.

*Abbreviations: pH = Potential of Hydrogen; N = Nitrogen; Cl⁻ = Chlor; P₂O₅ = Phosphor pentoxide; K₂O = Kali oxide; Al³⁺ = Aluminum; SO₄²⁻ = Sulfate; Cu = Copper; Pb = Lead; Cd = Cadmium; As = Arsenic; Zn = Zinc.

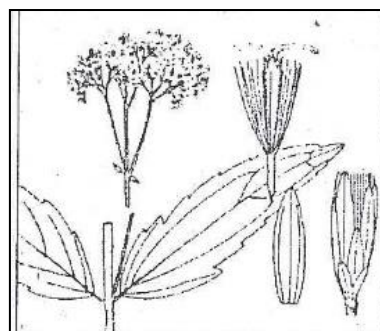


Fig. 1 Siam weed.



Fig. 2 Crab grass.



Fig. 3 *Fimbristylis miliacea* (L) Vahl.



Fig. 4 Nut grass.

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