



General Consideration of *Matricaria Chamomilla* L.

Ndriçim Zhuri and Alma Imeri*

Department of Agronomic Science, Faculty of Agriculture and Environment,
Agricultural University of Tirana

***Corresponding Author:** Alma Imeri, Department of Agronomic Science, Faculty
of Agriculture and Environment, Agricultural University of Tirana.

DOI: 10.31080/ASAG.2022.06.1129

Received: March 14, 2022

Published: May 03, 2022

© All rights are reserved by **Ndriçim Zhuri
and Alma Imeri.**

Abstract

Chamomile (*Matricaria chamomilla* L.) or German Chamomile as is known in Albania, is one of important medicinal plant species from the Asteraceae family, regarding Flora of Albania, Vol 4. Based on the flower of this specie, in Albania it has a strong aromatic and attractive to bees.

Nowadays it is much used as medicinal plant in the traditional medicine. It is used since ancient as sedative, cosmetic industry, and recently studying essential oils content and its life cycle can recommend it in international, European market, which is increasing day by day. My article briefly reviews the biology of *Matricaria chamomilla* L. with botany and study of its biological zero.

Since chamomile is a rich source of natural products, details on chemical constituents of essential oil and its plant parts growth will be on focus of the study aimed to increase not only productivity but using good practices on the near future for the cultivation of the plant.

Furthermore, particular emphasis is given to the study of *M. chamomilla* L, in different places in Albania, (based on Mediterranean climate and difference in relive as well as high sea level) focusing on the different temperatures to accomplish market demand, and trade of the plant. This is an attempt to compile and document information on different aspects of chamomile, we studied zero biologic by field trips survey in these sites and length analyses but the study must go on focused in biochemistry, stress influence and life cycle of this plant.

Keywords: *Matricaria Chamomilla* L; Asteraceae Family; Medicinal Plant; Climate Change; Good Practices; Life Cycle

Introduction

Chamomile (*Matricaria chamomilla* L.) is one of the important medicinal plant nor really native to Balkan and Europe, it was introduced to India during the Mughal period, now can be found almost all over the world [1].

Based on the pervious study, In India, this plant had been cultivated for about 200 years, was introduced in Punjab about 300 years ago during the Mughal period.

Chamomile has been used as herbal remedies for thousands of years, it has been known in ancient time in Greece, and Rome [2]. Essences of Chamomile can be used regarding the protocols assigned by different countries that are using the chamomile drug. There are 26 countries that allow by law such a practices [3]. It is an ingredient of several traditional and homeopathy medicinal preparations [4-7]. As a drug, its extracts like in the form of tea contain high level of apigenin that is antioxidant and anti-inflammatory.

It finds use in flatulence, colic, hysteria, and intermittent fever [8]. The flowers of *M. chamomilla* contain the blue essential oil

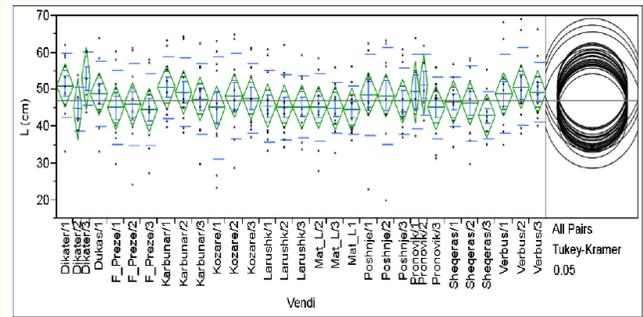
that derives from chamazulene by distillation of matricine, main component of *Matricaria chamomilla* L [9,10]. Newly, trend to use herbal remedies as safe and healthy highlights important aspects of medicinal plants to study and focused on. In this content, the international demand for chamomile oil has been steadily growing and this plant is widely cultivated in different areas in Albania. Based on literature the blue oil produced by *M. chamomilla* L., is used as sedative, [11,12-17] besides being antibacterial and fungicidal in action [11]. The dry flowers of chamomile are also use in herbal tea, baby massage oil, promoting the gastric flow of secretion, treatment of cough and cold [18]. The use of herbal tea preparations eliminated colic in 57% infants [19]. Because of its properties, the plant can be recommended and export in the European countries.

Botany of *Matricaria chamomilla* L.

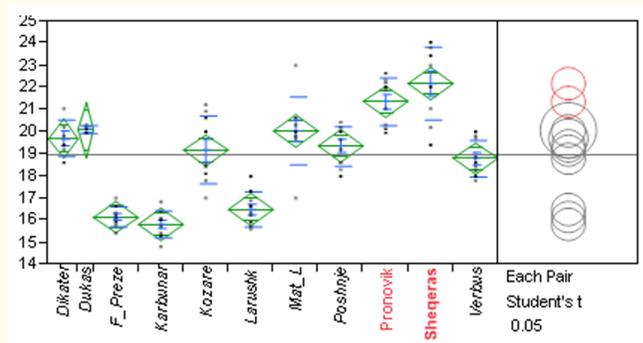
True chamomile, *M. chamomilla* L., is an annual plant with thin spindle-shaped roots in the soil. The branched stem is erect, heavily ramified, and grows to a height of 37–61 cm, (regarding my survey and reporting to graf 1 when is shown the length analyses in different sites in Albania). The long and narrow leaves are bi- to trip innate. Dry flowers are surveyed in order to recommend the best cultivar regarding the dry weight that is the weight of dry flowers. Graf 2 The fruit is a yellowish achene. Although the systematic status of this plant is not quite clear nowadays, there are a number of inaccuracies concerning the names. Apart from misdeterminations the synonymous use of the names *Anthemis*, *Chamomilla*, and *Matricaria* leads to uncertainty with regard to the botanical identification or the object of the future debates. Moreover, the nomenclature is complicated by the fact that Linnaeus made mistakes in the first edition of his “Species Plantarum” that he corrected later on, but the further studies based on the genome of the gene *Matricaria* explained the best-known botanical name for true chamomile is *Matricaria recutita* (syn. *Matricaria chamomilla*, *Chamomilla recutita* (L.) belonging to the genus *Chamomilla* and family *Asteraceae* [20]. *M. chamomilla* is a diploid species (2n = 18), allogamous in nature.

Material and Methods

Plants of *M. chamomilla* L. have been cultivated in different regions of Albania and have been surveyed during its life cycle under the different climate change. It can grow to weather with temperature ranging from 2°C to 20°C. The plant can be grown very suc-



Graf 1: Length analyses of *Matricaria chamomilla* L. in different places.



Graf 2: Dry flowers survey.

cessfully on the poor soils. In Albania, it grows on clayey lime soils, which are barren lands and considered to be too poor for any other crop. Temperature and light (sunshine hours) have greater effect on the *Chamomile* life cycle. Using some statistic methods, we can give a better idea about good practices in the cultivation of *Matricaria chamomilla* L. soon. Focused on temperature the measures have been related to average temperatures in different sites were the *M. chamomilla* L. have been grown.

The analysis of the vegetative growth index in length is reflected through test (F) and through comparison of the actual F-value with the theoretical F-values. The F-factorial values are derived from the ratio of the value of the dispersion of variants and iterations

and with the value of the dispersion of the error and in the case of length analysis has resulted greater than the value of F-theoretical which in this way is the truth of secure data. The F-factorial values and the corresponding F-theoretical values are reflected for the probability level of truth (P-0.01). 0.57/03648.

Results and Discussions

Plants growth and development especially the average length depends on the temperature in a meaning that varies from place to place. Referring to the vegetative zero (biological index), also called "base temperature", the growth rate was proportional to the difference between the average daily temperatures - zero vegetative or biological, up to a maximum threshold and the notion of day sums is formulated with t-t₀ increasing and amounts of effective or development temperatures. In strong correlation with temperatures has been the amount of light received each day and this has a significant impact, proportionally related. In the places (variants) of the vegetative length analysis the amount of vegetative development temperatures has fluctuated from 2700 to 38000 of the sums of t₀.

Based on the analysis of phenological development it is clearly shown that the optimal temperature for chamomile is between 20 ° C and 25 ° C in Albania. Vegetative growth in length has occurred from the successive accumulations of cells multiplying and proliferating them, processes that are going on. Vegetative zero is quite variable depending on the plant species. It depends on the geographical origin of the plants. Thus, plants of tropical origin have much higher vegetation zeros than plants growing in Albania. However, the selection of varieties makes it possible to adapt these boundaries.

Based on statistical analyses, Tukey-Kramer it is shown that length grown of *Matricaria chamomila* L., in different places where is cultivated this plant has not significant difference.

According to the Graf 1, the cm length analysis, the extension of the means of each variant on the variance platform is shown. The average curve corresponds to the representative line of the overall average 47.2 cm. The analysis sets contain within its walls the averages of the reliable and typical variables on which the analysis is based and considered.

Chamomile in 8 places of cultivation and observation had an average vegetative growth of 47.2 cm, which represents the differ-

ent respective values of each city. The table of individual variance shows the deviation of each value from the mean and the calculation of the standard deviation is performed on the differences of each value. This value is reliable and its limits below and above the average of each value constitute the maximum reliability $p = 0.05$, and the values outside them are excluded from the logic of the analysis.

The most qualitative cultivar results to be the *M.chamomilla* L. cultivated in Sheqeras Korce. This cultivar should be recommended for chamomile breeding purpose.

Conclusions

Based on the chamomile values and today is a great demand for this plant in the world market. Also, using natural substances instead of synthetic chemicals in order to avoid side effects and considered healthy we should increase awareness not only to protect the wild plants grown spontaneous but also cultivate such these plants. We should be sensitive for these plants that usually are threatened by unregulated harvesting of natural populations and expansion of urban centers. So it is recommended to cultivate chamomile, to protect and to know the best cultivars for the short future. A strong need is felt to screen the different chemotypes of chamomile growing at different phyto-geographical locations (such as experiment growing them in different cities in Albania), as is shown above. Thinking for these kinds of experiments in order to improve studies at morphologic, biochemical, will enable the research community to realize the extent of variability within the existing germplasm of chamomile, and hence help in the conservation of the plant. However, there is still for exploring different aspects of chamomile.

In Albania, it is a good potential for chamomile cultivation as a commercial medicinal and industrial crop. Because of the high international market price of chamomile, it is necessary to promote this valuable crop as a commercial crop mainly for export of chamomile oil from Albania.

Bibliography

1. Academy of Sciences of the Republic of Albania, Flora of Albania, Familja Compositae 4 23-61.
2. Ivens GM. "Stinking mayweed". *New Zealand Journal of Agricultural Research* 138 (1979): 21-23.

3. Issac O. 1st edition. Czecho-Slovakia: Prague press. Recent progress in chamomile research- medicines of plant origin in modern therapy (1989).
4. Pamukov D and Achtardziev CH. 1st edition. Priroda: Bratislava. Natural pharmacy (in Slova) (1986).
5. Das M., et al. "Chamomile (*Chamomilla recutita*): Economic botany, biology, chemistry, domestication, and cultivation". *Journal of Medicinal and Aromatic Plant Sciences* 20 (1998): 1074-1109.
6. Kumar S., et al. *Journal of Medicinal and Aromatic Plant Sciences* 23 (2001): 617-623.
7. Lawrence BM. "Progress in Essential Oils". *Perfume Flavorist* 12 (1987): 35-52.
8. Mann C and Staba EJ. "The chemistry, pharmacology and commercial formulations of chamomile. In: Craker LE, Simon JE, editors. Herbs, Spices and Medicinal Plants- Recent Advances in Botany, Horticulture and Pharmacology. Phoenix: Oryx Pres (1986): 235-280.
9. Tyihak E., et al. "Phytochemical investigation of apigenin glycosides of *Matricaria chamomilla*". *Pharmazie* 17 (1962): 301-304.
10. Bradley P. "The British herbal compendium". In: Bradley P, editor. 1st editon. London: British Herbal Medicine Association (1992).
11. Mann C and Staba EJ. "The chemistry, pharmacology and commercial formulations of chamomile". In: Craker LE, Simon JE, editors. Herbs, spices and medicinal plants- recent advances in botany, horticulture and pharmacology. USA: Haworth Press Inc (2002): 235-280.
12. Gould L., et al. "Cardiac effect of chamomile tea". *The Journal of Clinical Pharmacology* 13 (1973): 475-479.
13. Das M., et al. "Isolation of a genotype bearing fascinated capitula in chamomile (*Chamomilla recutita*)". *Journal of Medicinal and Aromatic Plant Sciences* 21 (1999): 17-22.
14. Gasic O., et al. "Variability of content and composition of essential oil in various chamomile cultivators (*Matricaria chamomilla* L.)". *Herba Hungarica* 28 (1989): 21-28.
15. Lal RK., et al. "An improved variety of German chamomile". *PAFAI Journal* 18 (1996): 17-20.
16. Lal RK., et al. "Induced floral mutants and their productivity in German chamomile (*Matricaria recutita*)". *The Indian Journal of Agricultural Sciences* 63 (1993): 27-33.
17. Shahi NC. "Traditional cultivation of Babunah *Chamomilla recutita* (L.) Rauschert syn. *Matricaria chamomilla* L. Luc-know". *Bulletin of Medico-Ethno-Botanical Research* 1 (1980): 471-477.
18. Sharma A., et al. "Cultivations of German chamomile - a review". *Curr Res Med Aromat Plants* 5 (1983): 269-278.
19. Anonymous. "Azulene in pharmacy and cosmetics". *Dragoco-Report* 16 (1969): 23-25
20. Weizman ZVI., et al. "Efficacy of herbal tea preparation in infantile colic". *The Journal of Pediatrics* 122 (1993): 650-652.
21. Franz Ch., et al. "Study on the assessments of plants/herbs, plant/herb extracts and their naturally or synthetically produced components as additives for use in animal production". *CFT/EFSA/FEEDAP* (2005): 155-169.

Assets from publication with us

- Prompt Acknowledgement after receiving the article
- Thorough Double blinded peer review
- Rapid Publication
- Issue of Publication Certificate
- High visibility of your Published work

Website: www.actascientific.com/

Submit Article: www.actascientific.com/submission.php

Email us: editor@actascientific.com

Contact us: +91 9182824667