Ethnobotanical studies and economic evaluation of medicinal plants in Belbei's Center, Sharkia Governorate, Egypt

S. E. EL-Shennawy [1,*], S. M. Ismaeal [1], A. B. Abdelazeez [3], and A. S. El-Saeid [2]

[1] *Botany and Microbiology Department, Faculty of Science (Girls Branch), Al –Azhar University, Cairo, Egypt.*
[2] *Botany and Microbiology Department, Faculty of Science, Al-Azhar University, Cairo, Egypt.*
[3] *National Authority for Remote Sensing and Space Sciences (NARSS), Cairo, Egypt.*

* Corresponding author E-mail: sahargomaa2031.el@azhar.edu.eg (S. EL-Shennawy)

ABSTRACT

The shortage of food and medicines in developing countries, in addition to their high cost, is considered one of the challenges in these countries. Traditional medicine, which relies mainly on medicinal plants, could be one of the solutions to overcome these challenges, so we should preserve these plants and their genetic origin. Egypt is one of the countries that contains many medically important plants. A total of 72 taxa were recorded as medicinal and economical purposes in Belbei's Centre, Al-Sharkia Governorate, Egypt. *Poaceae* and *Asteraceae*, were the most commonly families represented in this Governorate. The most commonly used plant parts are the whole plant, flowering branches, followed by the seeds, fruits, and rhizome. The most medicinal and economical uses of the recorded species include grazing, antimicrobial activity, diuretic, and antioxidant retreatments. Many of these species in the study area have multiple medicinal and economic benefits;, while \ few of them have limited benefits.

KeyWords: Medicinal plants; Belbei's Centre; Al-Sharkia Governorate.

INTRODUCTION

Medicinal plants have diversetypesof plants used as ethnobotany and have medicinal effects. They are considered as a rich resource of ingredients which can be used in drug synthesis and evolution. Plant essential oils and several plant extracts have a highly biological activity which in turn is useful on traditional medicine which has antimicrobial properties of these plants (Martínez *et al*., 1996). There are not enough studies concerned with the importance of medicinal and economic plants. Nearly, a half million plant species around the world have not been verified yet for their medicinal and economic importance, so medicinal plants have a promising future (Singh, 2015). Medicinal plants have several features such as; prophylactic, formal and synergistic medicine (Hassan *et al*., 2012). Medicinal plants may be classified according to the part used, habit, habitat, therapeutic value, besides the usual botanical classification (Joy *et al*., 1998). Recently, due to the beneficial effects of antioxidants, particularly natural antioxidants, in the treatment and prevention of diseases, there has been a considerable interest in finding natural antioxidants from plant sources. The studies on medicinal plants show that most of them possess significant antioxidant activity (Rafieian-Kopaie and Baradaran, 2013). They are considered as good sources of large variety of antioxidants (Rafieian-Kopaie and Baradaran, 2013), anticancer (Shirzad *et al*., 2012), anti-atherosclerosis (Khosravi-Boroujeni *et al*., 2012), anti-diabetic (Kazemi *et al*., 2010) and immunomodulatory (Shirzad *et al*., 2009) throughout the world. Täckholm, 1974 and Boulos, 2000 mentioned a large number of medicinal and aromatic plants in the Egyptian flora. In addition, numerous plants acclimatized to Egypt (Shams *et al*., 2009). The interaction between classical and modern medicine is to be confirmed for a new drug development (Aboul-Enein *et al*., 2012). The aim of this study is to identify the economic and medicinal plants and review traditional ethnomedicinal knowledge of the local people in present in El-Sharkia Governorate- Belbei's Centre. Several phytochemical prospective studies can be conducted on plants recorded in this area, to get benefits of these plants in the treatment of many diseases.

Study area

The survey of the present study 2020 and 2022, was during both winter and summer seasons to represent the flora of Belbei's agroecosystems. A total of 169 stands were selected to investigate the weed flora of the study area (85 stands in winter and another 84 in summer). Stands were chosen to represent different crops growing in the study area. Stands were distributed along Belbei's Centre according to the size of the cultivated area within the Center. Each stand encompassed four quadrates (5m x 5m). GPS coordinates of each stand were recorded. Presence and

absence of data have been recorded with for each species in each stand. Selected taxa founded in each stand were listed after complete identification according to Täckholm (1974) and Boulos (1999–2009). Voucher herbarium specimens were deposited in the herbarium of the Department of Botany, Faculty of Science (Boys) and Al-Azhar University.

RESULTS AND DISCUSSION

Floristic Survey

About 72 species obtained from 23 families with economic and medicinal importance were recorded. Asteraceae (10 species = 13.8 % of the total species). Fabaceae was represented by seven species (9.7%). Chenopodiscese and Brassicaceae were represented by five species each. In addition, 12 families, representing 16.6%, have only one treatment. From the results, the most medicinal and economical uses of the recorded species include, grazing, antimicrobial activity, antioxidant activity, stimulant, anti- inflammatory, diuretic, antitumor activity and anticancer activity.

The used parts of plant species

With regard to the used parts which have economical and medicinal importance in the study area, it is clear that the whole plants and flowering branches were the most important parts of the plant with 13 antimicrobial and antibacterial treatments (18 % of the total species), followed by seeds with attributes of 8 (11 % of the total species), leaves were 6, whereas fruits and rhizome shared with 3 treatments (Table 1, Fig. 3).

A total of 14 taxa representing 16 % of the total number used for grazing, and 11 species representing 13 % have antimicrobial activity and diuretic properties, also 8 species symbolizing 9% have antioxidant activities, Furthermore, 5 types representing 6 % applied as anti-inflammatory and rheumatism treatments. In the same sense, 5 species performed 4.3% can be used in stomachic treatments. 4 species representing 5% used as edible food. Also 3 taxa representing 4% of the total number of recorded species used for treatment of malaria. As well, 5 diseases of Vermifuge, Anti-nociceptive, Anti-spasmodic, Analgesic and Antihemorrhagic have two different treatments.

Economic and medicine uses.

The people of the different tribes may show affinities to use more than one recipe or treatment for a definite disease; this can be seen in figure 4. Diarrhea is the most common, and they have 14 different treatments. Antimicrobial, antioxidant, and anti-inflammatory followed with six different treatments. On the contrary, two diseases, namely rheumatism and wound treatments, have only four treatments each. The economical plants used for grazing and edibles are represented by 14% and 3 different treatments.

As a matter of fact, many worldwide authors have studied medicinal plants such as; Schauenberg and Paris, 1977; Ayensu, 1979; Dagmar, 2006; Marshall, 2011; Hassan, 2012; Rafieian-Kopaie and Baradaran, 2013 and Singh, 2015. A number of authors have studied medicinal plants in different countries. Fournier (1948) studied medicinal plants in France. In China, many people use traditional medicine. Keys (1976) recorded many Chinese herbs which were used in traditional medicine. In Iran, many reports mentioned the importance of using traditional medicine to treat many diseases with guidelines of World Health Organization (Naseri, 2004). Çakmakçi *et al.* (2009) referred to the medicinal and economic importance of many plants in Ispir region, Turkey. In Uganda local communities rely heavily on traditional medicine to treat many diseases (Namukobe *et al*., 2011). Aldhebiani and Mufarah (2017) carried out the phytochemical screening of some wild plants from wadi Yalmlam of Saudi Arabia. Boulos (1983) referred to medicinal plants in North Africa with an accurate explanation of how plant species are used to treat many diseases. Lemordant *et al.* (1977) recorded many useful and toxic plants in Tunisia. Fourment and Roques (1941) recorded medicinal and aromatic plants in Algeria. Boulos (1970) recorded medicinal herbs in Libya. Ducros, 1930; Abou El-Soud, 2010; Abdel-Azim *et al*., 2011 and Aboul-Enein *et al*., 2012 studied medicinal plants in Egypt. Furthermore, they recorded the medicinal plants in Siwa Oasis and their surrounding regions. In this context, this work recorded the medicinal and economic plant species in Belbie's Centre Al-Sharkia Governorate, Egypt. In Egypt, there is a considerably high biodiversity as well as a variety of medicinal and economic species. Although the export of raw materials derived from these plants' aids is for the improvement of national economic conditions, many pharmaceuticals must also be produced using these raw materials. Future integrated studies on medicinal plants should be conducted in order to increase their cultivation in vivo and in vitro. A number of future integrated studies

should be carried out on medicinal plants to expand its cultivation in vivo and in vitro. Medicinal plants should be maintained and expanded, if possible, and further studies should be conducted to identify their medical importance. The knowledge of traditional medicine was persisting for many centuries then transmitted orally between generation. Likewise, many people use the medicinal plants as an associate therapy to treat several illnesses which leads to high agreement values for these illnesses.

CONCLUSION

In current paper, about 72 species related to 23 families have economic and medicinal importance were recorded in Belbei's Centre, Al-Sharkia Governorate. Poaceae and Asteraceae, were the most common families represented in this Governorate. The whole plants and flowering branches were the most important used parts of the plant followed by seeds, leaves, fruits and rhizome. Diarrhea shows the most common diseases in this study followed by antimicrobial, antioxidant and anti-inflammatory. From the results, the most medicinal and economical uses of the recorded species include, grazing, antimicrobial activity, antioxidant activity, stimulant, anti-inflammatory, diuretic, antitumor activity and anticancer activity.

ACKNOWLEDGEMENT

Authors would like to express their deep appreciation for Prof. Dr. Adel Ibrahim Hamed EL-Gazzar, professor of plant taxonomy at Al-Ariesh University who helped with the plant identification. Also, thanks to staff members of the Department of Botany Herbarium, Faculty of Science (Boys), Al-Azhar University.

REFERENCES

Abou El-Soud, N. 2010: Herbal medicine in ancient Egypt. Journal of Medicinal Plants Research, 4: 82-86.

Aboul-Enein, A., El-Ela, F., Shalaby, E., El-Shemy, H. 2012: Traditional medicinal plants research in Egypt: Studies of antioxidant and anticancer activities. Journal of Medicinal Plants Research, 6 (5): 689-703.

Aderogba, M., McGaw, L., Bagla, V., Eloff, J., Abegaz, B. 2014: In vitro antifungal activity of the acetone extract and two isolated compounds from the weed, Pseudognaphalium luteoalbum. South African Journal of Botany, 94: 74-78.

Aldhebiani, A., Mufarah, N. 2017: Phytochemical screening of some wild plants from wadi Yalmlam, Saudi Arabia. Journal of Pharmacy and Biological Sciences, 12 (4): 25-27.

Aldo, T. 2006: Chemical and biological activity of triterpene saponins from *Medicago* species. Natural Product Communications, 1: 1159-1180.

Al-Snafi, A. 2017a: The pharmacological potential of *Dactyloctenium aegyptium*-A review. Indo American Journal of Pharmaceutical Sciences, 4 (1): 153-159.

Al-Snafi, A. 2017b: Pharmacology of Echinochloa crus-galli-A review. Indo American Journal of Pharmaceutical Sciences, 4 (1): 117-122.

Amin, S., Barkatullah, H. 2016: Pharmacology of *Xanthium* species-A review.Journal of Phytopharmacy, 5: 126-127.

Ayensu, E.S. 1979: Plants for medicinal uses with special reference to arid zones. In: Goodin, J.R. Northington, D.K. (eds.). Arid land plant resources. Lubbock, Texas, International Centre for Arid and Semi-Arid Land Studies, 117-178.

Bajo, L., Lomonsod, K., Tan, R. 2017: Anti-mutagenic potential of the aqueous extract from *Digitaria sanguinalis*. Science International (Lahore), 29 (6): 1257-1260.

Bandeira, S., Massingue Manjate, A., Filipe, O. 2006: An ecological assessment of the health of the Chibuto wetland in the dry season Mozambique: Emphasis on resources assessment utilization and sustainability analysis. CPWF Project Report. Colombo, Sri Lanka: CGIAR Challenge Program on Water and Food, 26 p.

Baradaran, A., Rafieian-Kopaie, M. 2013: Histopathological study of the combination of metformin and garlic juice for the attenuation of gentamicin renal toxicity in rats. Journal of Renal Injury Prevention, 2: 15-21.

Bellakhdar, J. 1978: Médecine traditionnelle et toxicologie ouest–sahariennes: contribution à l'étude de la pharmacopée Marocaine. Rabat, Éditions Broché Techniques Nord–Africaines, p.357

Bidak, L., Kamal, S., Halmy, M., Heneidy, S. 2015: Goods and services provided by native plants in desert ecosystems: Examples from the northwestern coastal desert of Egypt. Global Ecology and Conservation, 3: 433-447.

Boulos, L. 1966: Flora of the Nile region in Egyptian Nubia. Feddes Repertorium, 73: 184-215.

Boulos, L. 1970: Medicinal herbs in Libya. Al-Hasad 16. Esso Standared Libya International Publisher, 93 p.

Boulos, L. 1983: Medicinal plants of North Africa. Reference Publications, Algonac, Michigan, United States of America, 286 p.

Boulos, L. 1999: Flora of Egypt. vol. I (Azollaceae– Oxalidaceae). A1-Hadara Publishing, Cairo, Egypt, 419 p.

Boulos, L. 2000: Flora of Egypt. vol. II (Geraniaceae–Boraginaceae). A1-Hadara Publishing, Cairo, Egypt, 352 p.

Boulos, L. 2002: Flora of Egypt. vol. III (Verbenaceae– Compositae). A1-Hadara Publishing, Cairo, Egypt, 373 p.

Boulos, L. 2005: Flora of Egypt. vol. IV Monocotyledons (Alismataceae– Orchidaceae). A1-Hadara Publishing, Cairo, Egypt, 617 p.

Boulos, L. 2009: Flora of Egypt Checklist (revised annotated ed.). Al-Hadara Publishing, Cairo, Egypt, 410 p.

Çakmakçi, R., Erdoğan, Ü., Erdoğan, Y. 2009: Economically important medicinal and aromatic and others plants of the Ispir region. International Rural Development Symposiu, 25-27 September, Ispir, Erzurum, Turkey, 21 p.

Dagmar, L. 2006: International trade in medicinal and aromatic plants. In: Medicinal and aromatic plants. Springer, New York, 155-170.

Doral, G., Wink, M. 2002: Chemical composition and biological activity of the essential oils of Senecio aegyptius var. discoideus Boiss. Zeitschrift für Naturforschung C., 57 (5-6): 434-439.

Ducros, A. 1930: Essai sur le droguier populaire arabe de l'inspectorat des pharmacies du Caire. l'Institut Français D'archéologie Orientale. Egypt, 15: i- viii, 1-162, pl. I-IX.

El-Anwer, R., Abdel-Rahim, S., Abo El-Seoud, K., Kabash, A. 2016: Phytochemical and biological studies on persicaria salicifolia brouss. ex willd growing in Egypt. International Research Journal of Pharmacy, 7 (8): 4-12.

El-Souda, S., Matloub, A., Nepveu, F., Valentin, A., Roques, C. 2015: Phenolic composition and prospective anti-infectious properties of Atriplex lindleyi. Asian Pacific Journal of Tropical Disease, 5 (10): 786-791.

Fatima, N., Rahman, M., Khan, M., Fu, J. 2014: A review on Ipomoea carnea pharmacology, toxicology and phytochemistry. Journal of Complementary and Integrative Medicine, 11 (2): 55-62.

Fourment, P., Roques, H. 1941: Repertoire des plants medicinales et aromatiques d'Algerie. Documents et Renseignements Agricoles. Vol., 61. Collection du Centenaire de l'Algerie, Alger, 159 p.

Fournier, P. 1948: Le livre des plantes médicinales et v én éneeuses de France. 3 vol. Lechevalier: Paris, 128 p.

Hassan, A., Roy, P., Bristy, N., Paul, S., Wahed, T., Alam, M. 2012: Evaluation of in vitro antioxidant and brine shrimp lethality bioassay of different extracts of Polygonum plebeium R. Br. International Journal of Advanced Research, 3 (12): 97-107.

Joy, P., Thomas, J., Mathew, S., Skaria, P. 1998: Medicinal plants. Kerala Agricultural University. Aromatic and Medicinal Plants Research Station Report, Odakkali, Asamannoor P.O., Ernakulam District, Kerala, India, 211 p.

Kazemi, S., Asgary, S., Moshtaghian, J., Rafieian, M., Adelnia, A., Shamsi, F. 2010: Liver-protective effects of hydroalcoholic extract of Allium hirtifolium Boiss. In rats with alloxan-induced diabetes mellitus. Arya Atheroscler, 6: 11-15.

Keys, J. 1976: Chinese herbs; their botany, chemistry, and pharmacodynamics. With special sections on: Mineral drugs, drugs of animal origin, 300 Chinese prescriptions, toxic herbs. Charles E. Tuttle Company: Rutland, Vermont, and Tokyo, 388 p.

Boroujeni, H., Mohammadifard, N., Sarrafzadegan, N., Sajjadi, F., Maghroun, M., Khosravi, A. 2012: Potato consumption and cardiovascular disease risk factors among Iranian population. International Journal of Food Sciences and Nutrition, 63: 913-920.

Lemordant, D., Boukef, K., Bensalem, M. 1977: Plantes utiles et toxiques de Tunisie. Fitoterapia, 48: 191-214.

Malobane, M., Nciizah, A., Wakindiki, I., Mudau, F. 2018: Sustainable production of sweet sorghum for biofuel production through conservation agriculture in South Africa. Food and Energy Security, 7 (3): e00129.

Martinez, M.J., Betancourt, J., Alonso-González, N., Jauregui, A. 1996: Screening of some Cuban medicinal plants for antimicrobial activity. Journal of Ethnopharmacology, 52: 171–174.

Marshall, E. 2011: Health and wealth from medicinal aromatic plants. FAO. 73 p.

Mughal, T., Mamona, A., Saddiuqe, Z., Qureshi, S., Ehboob, S. 2010: Phytochemical and pharmacognostical evaluation of Euphorbiaceae species from Lahore region. Pakistan. Journal of Applied Pharmaceutical, 3 (2): 79- 85.

Namukobe, J., Kasenene, J., Kiremire, B., Byamukama, R., Kamatenesi-Mugisha, M., Krief, S., Kabasa, J. 2011: Traditional plants used for medicinal purposes by local communities around the Northern sector of Kibale National Park, Uganda. Journal of Ethnopharmacology, 136 (1): 236-245.

Naseri, M. 2004: Traditional Iranian medicine and its promotion with guidelines of world health organization. Daneshvar Medicine, Scientific Research Journal of Shahed University, 52: 53-66.

Nauroy, J. 1954: Contribution a létude de la pharmacopee marocaine traditionnelle (drogues vegetales). Travaux du laboratoire de matière médicale de l'École supérieure de pharmacie de Paris, 2 (152): 119-125.

Nunn, J. 1996: Ancient Egyptian medicine. British Museum Press, London. 240 p.

Oladosu, I., Usman, L., Olawore, N., Atata, R. 2011: Antibacterial activity of rhizomes essential oils of two types of *Cyperus articulatus* growing in Nigeria. Advances in Biological Research, 5 (3): 179-183.

Perrot, É., Pâris, R. 1971: Les plantes médicinales. Presses Universities de France: Vendome, 80 p.

Prasad, P., Mantry, S., Reddy, G., Jaffer Sadik, M. 2012: Antinociceptive activity of *Ipomoea eriocarpa* whole plant extracts. International Journal of Pharmacology Research, 1 (1): 85-88.

Rafieian-Kopaie, M., Baradaran, A. 2013: Plants antioxidants: From laboratory to clinic. Journal of Nephropathology, 2 (2): 152-153.

Safa, O., Soltanipoor, M., Rastegar, S., Kazemi, M., Dehkordi, K., Ghannadi, A. 2013: An ethnobotanical survey on *hormozgan province*, Iran. Avicenna Journal of Phytomedicine, 3 (1): 64-81.

Sajjadi, S., Ghannadi, A. 2012: Analysis of the essential oil of *Lamium amplexicaule* L. from Northeastern Iran. Journal of Essential Oil Bearing Plants, 15 (4): 577-581.

Schauenberg, P., Paris, P. 1977: Guide to medicinal plants. Guildford, Lutterworth Press, 349 p.

Shahzad, A., Parveen, S., Fatema, M. 2011: Development of a regeneration system via nodal segment culture in *Veronica anagallis-aquatica* L. an amphibious medicinal plant. Journal of Plant Interactions, 6 (1): 61-68.

Shams, K., Nazif, N., Abdel-Azim, N., Abdel-Shafeek, K., El-Missiry, M. 2009: Isolation and characterization of antineoplastic alkaloids from *Catharanthus roseus* L. Don. cultivated in Egypt. African Journal of Traditional, Complementary and Alternative Medicines, 6: 118-122.

Sharafati, R., Sherafati, F., Rafieian-kopaei, M. 2011: Biological characterization of Iranian walnut (*Juglans regia*) leaves. Turkish Journal of Biology, 35: 635-639.

Sharma, R., Singh, R. 2013: A review on Phyla nodiflora Linn. a wild wetland medicinal herb. International Journal of Pharmaceutical Sciences Review and Research, 20 (1): 57-63.

Shirzad, H., Shahrani, M., Rafieian-Kopaei, M. 2009: Comparison of morphine and tramadol effects on phagocytic activity of mice peritoneal phagocytes in vivo. International Immunopharmacology, 9: 968-970.

Shirzad, H., Taji, F., Pourgheysari, B., Raisi, S., Rafieian-Kopaei, M. 2012: Comparison of antitumor activities of heated and raw garlic extracts on fibrosarcoma in mice. Journal of Babol University of Medical Sciences, 14: 77-83.

Shivakoti, C., Ramesh, K. 2015: Preliminary phytochemical screening of *Setaria verticillata*. Indo American Journal of Pharma Research, 5 (6): 2425- 2429.

Steven, M., Joseph, H. 1988: The ethnobotany of the Egyptian Eastern Desert: A comparison of Plant common usage between two culturally distinct bedouin groups. J. of ethnopharrnacology, 23.73 - 89

Singh, R. 2015: Medicinal plants: A review. Journal of Plant Sciences, 3 (1): 50-55.

Sumitra, S., Parul, S. 2018: Medicinal potential of weed *Echinochloa colona* (l.) Link: A review. International Journal of Pharmacognosy and Phytochemical Research, 10 (3): 98-102.

Täckholm, V. 1974: Students' Flora of Egypt. Cairo University, Printed by Cooperative Printing Company Beirut, 888 p.

Uddin, G., Ali, J., SaniaFeroz, S., Abdur Rauf, T. 2014: Phytochemical and pharmacological study of *Coronopus didymus* L. Journal of Herbal Medicine, 3 (1): 1-4

Table 1: Economic and medicinal uses of 72 recorded species.

Family	Species	Part used	Economic and medicinal uses	References
Apiaceae	*Ammi majus* L.	Seed	Diuretic, carminative, tonic, digestive, stomachic and for angina pectoris and asthma	(Joy *et al*., 1998)
	Foeniculum vulgare Mill.	Fruit	Stimulant, carminative, stomachic, galactagogue and antispasmodic	(Fourment and Roques, 1941)
Asteraceae	*Anthemis retusa* Delile	Flowering branches	Grazing, aromatic source	(Bidak *et al*., 2015)
	Bidens pilosa L.	Flowering branches	Cuts, wounds	(Marshall, 2011)
	Cichorium endivia L.	Leaves	Stimulates bile secretion, tonic and digestive troubles	(Bellakhdar, 1978)
	Conyza bonariensis (L.) Cronquist	Flowering branches	Diuretic	(Fourment and Roques, 1941)
	Launaea nudicaulis (L.) Hook. f.	Flowering branches	Grazing	(Bidak *et al*., 2015)
	Pseudognaphalium luteo-album (L.) *Hilliard &* B. L.	Leaves	Antimicrobial activity	(Aderogba *et al*., 2014)
	Senecio vulgaris L.	Flowering branches	Vemifuge	(Fourment and Roques, 1941)
	Silybum marianum (L.) Gaertn.	Seed	Liver disorders, jaundice, gall stones, peritonitis, coughs, bronchitis, congestion of uterus and varicose veins	(Schauenberg and Paris, 1977)
	Sonchus oleraceus L.	Leaves	Malaria	(Namukobe *et al*., 2011)
	Xanthium spinosum L.	Fruit	Analgesic, anti-inflammatory, antiarthritic, cytotoxic, anti-angiogenesis and antimicrobial activity	(Amin and Barkatullah, 2016)
Brassicaceae	*Capsella bursa- pastoris* (L.) Medik.	Whole plant	Vaso-constrictor, uterine problems and astringent	(Lemordant *et al*., 1977)
	Coronopus didymus (L.) Sm.	Whole plant	Antimicrobial and antioxidant activities	(Uddin *et al*., 2014)
	Eruca sativa Mill.	Leaves	Stimulant, antiscorbutic and rubefacient	(Fourment and Roques, 1941)
	Sisymbrium irio L.	Flowering branches	Grazing	(Bidak *et al*., 2015)
	Moricandia sinaica (Boiss.)	aerial parts	anti-inflammatory and antipyretic activities	Sahar El-mekkawy *et al*., 2020
Caryophyllaceae	*Silene aegyptiaca (L.) L.f.*	Flowering branches	Grazing	(Bidak *et al*., 2015)
	Spergularia marina (L.) Griseb.	Flowering branches	Grazing	(Bidak *et al*., 2015)
	Stellaria pallida (Dumort.) Murb.	Flowering branches	Diuretic, wounds, astringent and Psoriasis	(Schauenberg and Paris, 1977)
	Vaccaria pyramidata Medik.	Roots	Lymphangitis, wounds, ulcers and paralysis of muscles	(Keys, 1976)
Chenopodiaceae	*Atriplex lindleyi* Moq.	Whole plant	Antiplasmodial, antimicrobial and antioxidant activities	(El-Souda *et al*., 2015)
	Beta vulgaris L.	Flowering branches	Edible and grazing	(Bidak *et al*., 2015)
	Chenopodium album L.	Whole plant	Gastrointestinal disorders	(Marshall, 2011)
	Chenopodium ambrosioides L.	Fruit	Diuretic, stimulant, anthelmintic and stomachic	(Fournier, 1948)
	Chenopodium murale L.	Flowering branches	Aromatic source and edible	(Bidak *et al*., 2015)
Convolvulaceae	*Convolvulus arvensis* L.	Roots	Antihemorrhagic	(Bellakhdar, 1978)
	Ipomoea carnea Jacq.	Whole plant	Antimicrobial, anti-oxidant, anti-cancer, anticonvulsant, immunomodulatory, antidiabetic, hepatoprotective, anti-inflammatory,	(Fatima *et al*., 2014)

			anxiolytic, sedative and wound healing activities.	
	Ipomoea eriocarpa R. Br.	Whole plant	Antinociceptive activity	(Prasad *et al*., 2012)
Cucurbitaceae	*Citrullus colocynthis* (L.) Schrad.	Seeds or pulp	Anthelmintic properties. A black tar-like substance extracted from the seeds is used to treat skin disease	Steven and Hobbs (1988)
Cyperaceae	*Cyperus articulatus*L.	Rhizomes	Antimicrobial activity	(Oladosu *et al*., 2011)
	Cyperus rotundus L.	Tubercles	Diuretic, analgesic, scorpion stings, analeptic, anthelmintic, carminative, stomachic, stimulant and sedative	(Boulos, 1966)
Euphorbiaceae	*Euphorbia helioscopia* L.	Latex	Vesicatory, laxative and purgative	(Fourment and Roques, 1941)
	Euphorbia heterophylla L.	Whole plant	Used as remedies against several diseases and complaints such as cancer, diabetes, diarrhoea, heart diseases, hemorrhages, hepatitis, jaundice, malaria, ophthalmic diseases, rheumatism and scabies	(Mughal *et al*., 2010)
	Euphorbia prostrate Aiton	Whole plant	Diabetes, diarrhoea, heart diseases, hemorrhages, hepatitis, jaundice, malaria, ophthalmic diseases, rheumatism and scabies	(Mughal *et al*., 2010)
	Euphorbia peplus L.	Latex	Diuretic and treatment of some pulmonary diseases	(Fournier, 1948)
	*Ricinus communis*L.	Roots	Rheumatism, inflammatory affections, chronic, toothache, lumbago, sciatica and jaundice	(Nauroy, 1954)
Fabaceae	*Alhagi graecorum*Boiss.	Flowering branches	Vermifuge, laxative, used to care rheumatic pains and purgative	(Boulos, 1970)
	Medicago intertexta (L.) Mill.	Flowering branches	Antimicrobial, insecticidal, allelopathic and cytotoxic effects	(Aldo, 2006)
	Melilotus indicus (L.) All.	Seed	For diseases of genital organs of both seves	(Nauroy, 1954)
	Sesbania sesban (L.) Merr.	Leaves	Antimicrobial activity	(Doral and Wink, 2002)
	Trifolium resupinatum L.	Flowering branches	Grazing	(Bidak *et al*., 2015)
	Vicia monantha Retz.	Flowering branches	Grazing and fuel	(Bidak *et al*., 2015)
	Vicia sativa L.	Whole plant	Rheumatism	(Fournier, 1948)
Fumariaceae	*Fumaria densiflora* DC.	Flowering branches	Grazing	(Bidak *et al*., 2015)
Lamiaceae	*Lamium amplexicaule* L.	Flowering branches	Antioxidant, free radical scavenging, antiproliferative, anti-inflammatory, antinociceptive, bacteriostatic, cytotoxic, antispasmodic and tyrosine inhibitory activities	(Sajjadi and Ghannadi, 2012)
Loranthaceae	*Emex spinosa* (L.) Campd.	Flowering branches	Edible food and grazing	(Bidak *et al*., 2015)
Malvaceae	*Malva parviflora* L.	Seed	As a cataplasm, rectal injection or gragle according to the case	(Bellakhdar, 1978)
Oxalidaceae	*Oxalis corniculata* L.	Leaves	Gastrointestinal disorders	(Marshall, 2011)
Plantaginaceae	*Plantago major* L.	Seed	Diuretic and expectorant	(Fourment and Roques, 1941)
Poaceae	*Avena sativa* L.	Flowering branches	Rheumatism	(Schauenberg and Paris, 1977)
	Cynodon dactylon (L.) Pers.	Rhizomes	For renal and urinary troubles, depurative, diuretic, refreshing agent, sudorific and emollient	(Fourment and Roques, 1941)
	Dactyloctenium aegyptium (L.) Willd.	Whole plant	Antimicrobial, antioxidant, reproductive, cytooxic, antidiabetic and gastointestinal effects.	(Al-Snafi, 2017a)
	Digitaria sanguinalis (L.) Scop.	Whole plant	Anti-mutagenic potential	(Bajo *et al*., 2017)

	Dinebra retroflexa (Vahl) Panz.	Flowering branches	Grazing	(Bandeira *et al*., 2006)
	Echinochloa colona (L.) Link	Seed	Used in spleen and hemorrhage problems. Recently found that it has wound healing, antioxidant and antimicrobial property	(Sumitra and Parul, 2018)
	Pennisetum divisum (J.F.Gmel.) Henrard	Leaves	Antioxidant activity	(Aldhebiani and Mufarah, 2017)
	Phalaris paradoxa L.	Flowering branches	Grazing	(Bidak *et al*., 2015)
	Phragmites australis (Cav.) Trin. ex Steud.	Rhizomes	Diuretic, stomachic, antipyretic, treatment of some pulmonary diseases and treatment of jaundice	(Keys, 1976)
	Polypogon monspeliensis (L.) Desf.	Flowering branches	Grazing	(Hassan, 2012)
	Polypogon viridis (Gouan) Breistr.	Flowering branches	Grazing	(Bidak *et al*., 2015)
	Setaria verticillata (L.) P. Beauv.	Whole plant	Anti-inflammatory, anti- thrombotic, anti-oxidant, hepatoprotective and anticarcinogenic activities.	(Shivakoti and Ramesh, 2015)
	Sorghum bicolor (L.) Moench	Whole plant	Biofuel crop production	(Malobane *et al*., 2018)
Polygonaceae	*Persicaria salicifolia* (Brouss. ex Willd.) Assenov	Flowering branches	Antioxidant activity and antitumor	(El-Anwer *et al*., 2016)
	Polygonum maritimum L.	Roots	Astringent and antidiarrhoeic	(Nauroy, 1954)
	Polygonum plebeium R. Br.	Flowering branches	Antioxidant	(Hasan *et al*., 2015)
	Rumex dentatus L.	Seed	Menstruation regulator and stops bleeding during menstruation	(Safa *et al*., 2013)
Portulacaceae	*Portulaca oleracea* L.	Whole plant	Diuretic, abscesses, anaphrodisiac, vermifuge, refreshing agent and antidiabetic	(Nauroy, 1954)
Primulacae	*Anagallis arvensis* L.	Flowering branches	Nephritis, insect bites, jaundices, diuretic, painful wounds, bile wound healing, expectorant, chest and urination disease	(Safa *et al*., 2013)
Scrophulariaceae	*Veronica anagallis-aquatica* L.	Leaves	Antimicrobial and anti-inflammatory activities	(Shahzad *et al*., 2011)
Solanaceae	*Solanum nigrum* L.	Flowering branches	Vaginal diseases	(Bellakhdar, 1978)
Urticaceae	*Urtica urens* L.	Leaves	Antihemorrhagic	(Fourment and Roques, 1941)

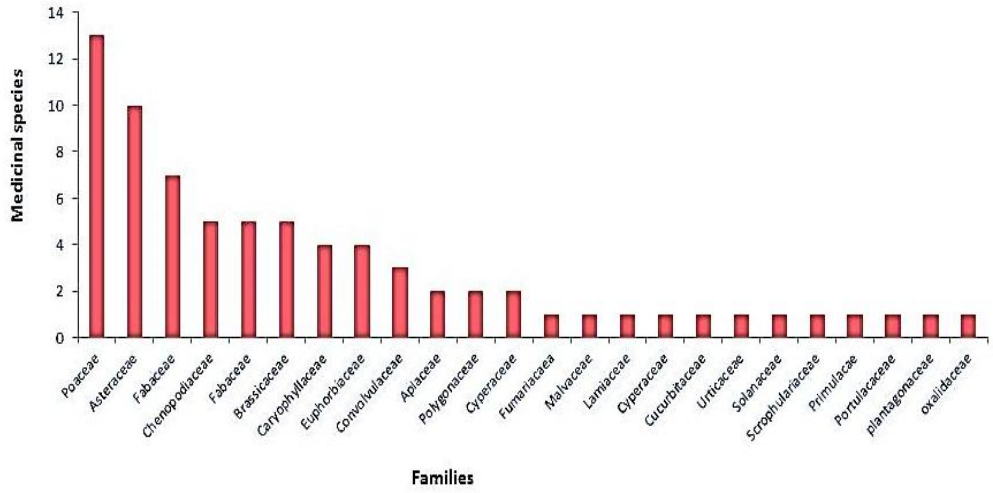

Figure 2: Graphical representation of 23 families recorded in Belbei's Centre Al-Sharkia Governorate, Egypt.

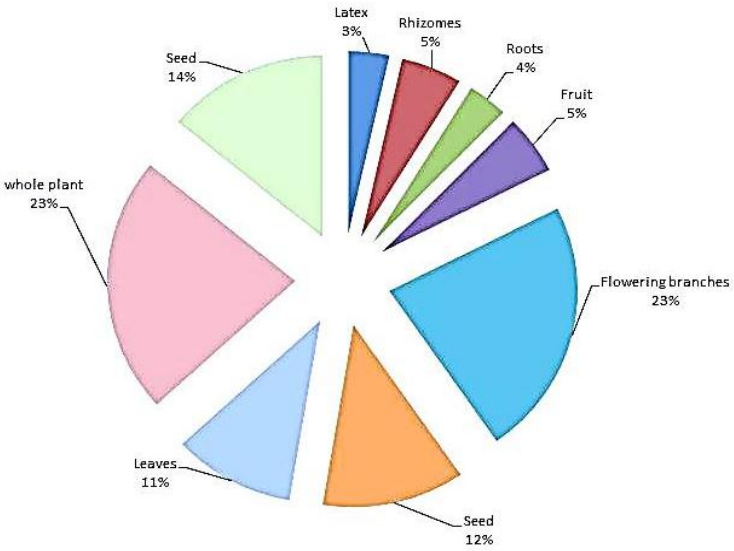

Figure 3: Used parts of plant species recorded in Belbei's Centre Al-Sharkia Governorate, Egypt.

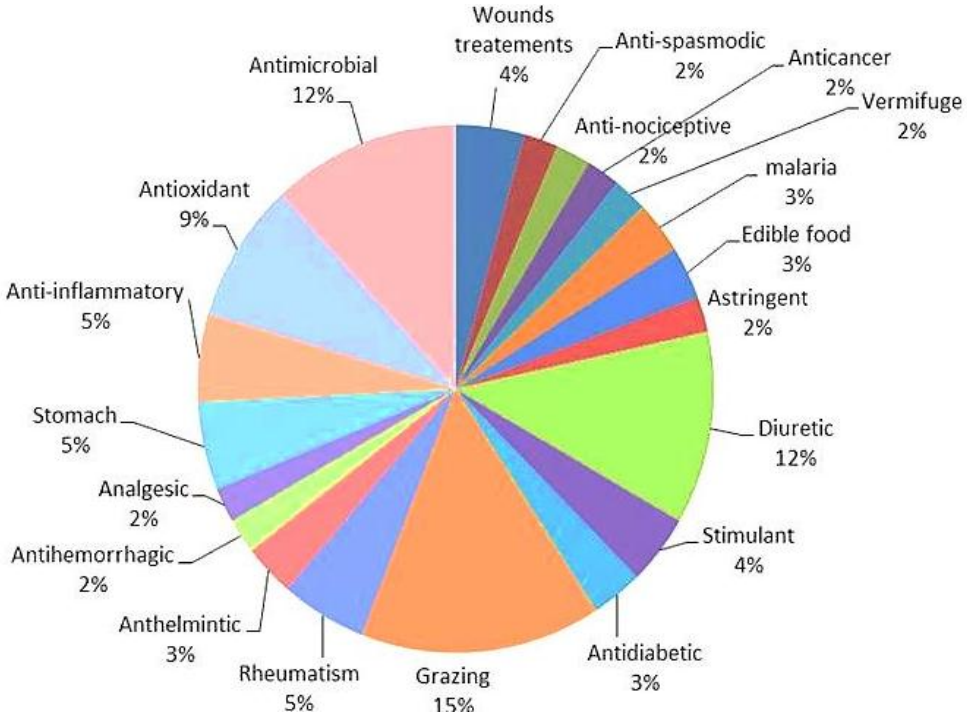

Figure 4: Shows the number of treatments for each of the 21 common diseases used in Belbie's Centre, Al-Sharkia Governorate, Egypt.

دراسه ميدانيه للنباتات الاقتصاديه والطبيه بمركز بلبيس -محافظه الشرقيه –مصر

سحر ابراهيم الشناوى [1,*], صفاء محمد اسماعيل مرعى [1], عبد العزيز بلال عبد العزيز [3], البراء صلاح الدين محمود السعيد [2].

[1] *قسم النبات والميكروبيولوجى, كلية العلوم (بنات), جامعة الأزهر, القاهرة, مصر.*

[2] *قسم النبات والميكروبيولوجى, كلية العلوم (بنين), جامعة الأزهر, القاهرة, مصر.*

[3] *قسم الاراضى والاستشعار من البعد , شعبه التطبيقات الزراعيه والتربه وعلوم البحار بالهيئه القوميه للاستشعار*

* البريد الإلكتروني للباحث الرئيسي: sahargomaa2031.el@azhar.edu.eg

الملخص العربى

مشكلة النقص الكبير في الغذاء والدواء من أكبر القضايا التي تواجه العديد من البلدان لذا أحدى الخيارات الرئيسيه لحل هذه المشكلة هو الطب التقليدي القائم على النباتات الطبية والعشبية. فقد اجريت هذه الدراسه في مركز بلبيس بمحافظه الشرقيه التابعه لجمهوريه مصر العربيه تم تسجيل **72** نوع نباتي هذه الأنواع لها فوائد طبية واقتصادية محدودة. الفصيله النجيليه والفصيله المركبه هما االلتان احتوتا علي اكبر الانواع النباتيه ذات الاهميه الطبيه والاقتصاديه . تستخدم هذه النباتات في علاج العديد من الأمراض مثل مدرات البول وعلاج أمراض المسالك البولية وعلاج الم المعدة و البطن وعلاج الجروح وعلاج الأمراض الجلديه والنشاط الميكروبي والبكتيري و مضادات الأكسده و لها أيضا أهمية اقتصادية كبيرة مثل الرعي وحطب الوقود ومستحضرات التجميل.

الكلمات الاسترشادية: النباتات الطبية, مركز بلبيس, محافظة الشرقية.