

REVIEW: EFFECTIVE MEDICAL PLANT EXTRACTS USED AGAINST PARASITES

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ABSTRACT

This review aimed to identify most important medical plants extract used to treat parasites human diseases, Parasitic infections can define as any illnesses or cases caused by parasites and reproducing in the body. The Parasites are living organisms that need another animal or living thing called (a host) to have nutrients need to survive, protozoa, trematodes, cestodes and nematodes are types of this parasite. Which can affect about 30% of the human population. the medicinal plant is any plant which contains in their organs or tissues substances can be used for therapeutics or became precursors for the synthesis medicinal drugs.

KEYWORDS: *Medical Plants, Parasite, Extracts, Infection, Protozoa*

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INTRODUCTION

Plant extracts natural compounds extracted from plant parts (leaves, flowers, fruits) and containing active substances and in the form of aqueous or alcoholic extracts, oils, or powders, and they have effective methods it is often multiple uses in combating pests and diseases (Al-umar & Al-abdaly ,2022).

Interest in medicinal plants and herbs has increased in recent years, using them as main sources of production medicinal drugs or as a source used in drug formulation. Also they are used as materials for producing chemical compounds and some pharmaceutical substances. Many studies have dealt with the effect of extracts on parasites (Al Delaimy, 1970), the Parasitism is a relationship in which one of the two animal is a harmful (parasite) and the other is called the host , parasite mean that an organism have the ability for living permanently or temporarily on or in another organism the (host) which is physiologically or physically dependent upon other. As well as parasites could be protozoa, worms or arthropods (Mekete & Awole ,2003) .

This study aims to know the most important medicinal plant extracts on parasitic organisms and the damage they cause to them, which may It contributes to finding alternatives to materials that inhibit microorganisms, which have become resistant to them due to widespread use for antibiotics.

Many medical plants extract were used to control parasites , the aqueous and alcoholic extract of *Zizyphus* leaves was used as an anti-leishmaniasis agent, and the ethanolic extract was the most effective in inhibiting the parasite, reaching 77.3 % (Mohamad , 2004).

Some medicinal plants which have antileishmanial activity from Morocco were tested, , ethanolic, methanolic and n-hexane plant extract was experimented against three species of Leishmania ,*L. tropica*, *L. major* ,and *L. infantum* . the extracts of plants completely resulted in decreasing in the stage promastigotes variability and viability (Bouyahya *etal.*,2018) .

Also the effect of garlic and pomegranate extract on infected rats experimentally with the parasite *Cryptosporidium parvum* and compare it with the drug Metranidazole was study by (Razzaq,2015) which concluded that the therapeutic importance of garlic for the parvum parasite. C because of its ability to control the parasite in its various stages ,and the effect of pomegranate peels on the parasite C. parvum is second only to the garlic plant.

As well as extract effect of *Albizia gummifera* leaf Ethanolic (EEAL) and aqueous (AEAL) were tested for detected their activity against *Trypanosoma (T. brucei)* in the laboratory ,both (EEAL) and (AEAL) extracts reduced the motility of parasites and discarded at all concentrations used in study (Oloruntola *etal.*,2021).

The methanol extract of *Suregada zanzibariensis* leaves was consider good anti-*Plasmodium falciparum* and *Leishmania major* activity, that similar with the *Albizia coriaria* and *Aspergillus racemosus* methanol extracts had moderate anti- Leishmanial and anti- plasmodial activity. *Albizia coriaria* and *Acacia tortilis* methanol extracts and the water extract of *Aloe nyeriensis* var *kedongensis* could exhibited anti- Leishmanial and anti- plasmodial activity (Elizabeth *etal.*, 2009).

Study about the effect of watery and ethanolic plants extracts toxicity include basil, garlic , bitter chaparro, ginger, papaya and onion against the stages (eggs, oncomiracidia and adults) of the flatworm *Neobenedenia spp.* , the study results demonstrates that watery and ethanolic extracts of bitter chaparro, basil and ginger are more toxic to all life stages of this flatworm (Moreno *etal.*,2017).

While the effect of aqueous extract of black wheat seeds *Trigonella foenum-graecum* and *Fenugreek esculentum* was also studied vitality in the protoscolex of *Echinococcus granulosus* of sheep origin, and the study showed that aqueous extract of both plant has an effective significantly in inhibiting the vitality of protoscolex of parasiteat (25, 50, and 75) mg/ml concentrations at time 15, 30 & 45 minutes (Abdulla *etal.*,2008).

Colocynth (Schrad colocynthis Citrullus) is one of the medicinal plants that it is called apple bitter, it is used to expel parasites from the intestines (Khalaf Allah, 1988) .

As for the pomegranate plant (*Punica granatum* L), it has been found that it has many medical benefits , it considered medicines to kill tapeworms and are also used in treating dysentery and others(Qudamah,2008). (Abu-Hawash*etal.*,2023) were Identified the effect of leaf extracts from Indian plant (*Azadirachta indica*) as anti-parasitic as well as anti-helminthic results showed that the plant extract was powerful anthelmintic and concluded that this extract must be experimented further for developing a new therapeutic drugs .

Clausena anisata, *Punica granatum* and *Zanthoxylum zanthoxyloides* Extracts were examined with LC50 74, 97 and 164 µg/mL against wine parasite (*Ascaris suum*) this species closely belong to *A. lumbricoides* that infected human were fixed as the most potent anti-Ascaris (Williams *etal.*, 2016). In addition (Zangueu *etal.*, 2023) study the effect of aqueous extract of *Ceiba pentandra* (L.) against parasite and evaluated anthelmintic activity of it , the study results showed that this plant extract possess anti-parasitic properties In vitro.

CONCLUSION

From this review can concluded that the medical plants extracts which used to treat parasitic infections of humans and animal are study and many of parasites have become resistant to chemical drugs, so alternatives are become required. Since vaccination has failed in many cases, the search for alternatives is still an option and the plants extracts is safety for use with little side effects and it consider a friend of the environment. Many of these extracts should be tested by experiments in lab animals, when they efficient , can be used in clinical cases.

REFERENCES

1. Abdulla, I. A.; Al-Badrani, I. I. and Azhar Misbah, A. M. (2008). *Effect of aqueous extract of Fagopyrum black wheat seeds vitality in Trigonella foenum-graecum and Fenugreek esculentum the protoscolex of Echinococcusgranulosus From sheep in glass. Magazine of Education and Science - Volume (21) Issue (3).*
2. Abu- Hawash , M. ; AL-Otaibi, T.; ALOjayri ,G. ; AL-Shaebi ,E.M. ; DKHIL , M.A.; ELKhadragi , M.F. ; AL-Quraishi,S. ; Abdel-Gaber, R. (2023).*In vitro studies for the antiparasitic activities of Azadirachta indica extract. ISSN 0101-2061 (Print) ISSN 1678-457X(Online).*
3. Al-Delaimy, K. S. and Ali, S. H. "Antibacterial action of vegetable extracts on the growth of pathogenic bacteria" (1970). *J. Sci. Fd. Agric. 21:pp110-112.*
4. Al-umar, Ali,K. & AL-abdaly ,Bjad, A. (2022). *Plant extracts and their role in combating agricultural pests, Ministry of Environment, Water and Agriculture.National Center for Organic Agriculture.*
5. Bouyahya, A.; Et-Touys ,A. ; Dakka,N. ; Fellah, H.; Abrini, J. & Bakri,Y. (2018). *Antileishmanial potential of medicinal plant extracts from the North-West of Morocco. Beni-Suef University Journal of Basic and Applied Sciences,Volume 7, Issue 1, Pages 50-54.*
6. Elizabeth ,V.M. ; Kigonda a b, ; Geoffrey M. ; Rukunga b ; Joseph M.; Keriko c.; Willy K. ; Tonui d.; Jeremiah W. ; Gathirwa b. ; Peter G. ; Kirira b. ; Beatrice Irungu b. ; Johnstone M. ; Ingonga d. ; Isaiah O. and Ndiege e. (2009). *Anti-parasitic activity and cytotoxicity of selected medicinal plants from Kenya. Journal of Ethnopharmacology, Volume 123, Issue 3, 25 June 2009, Pages 504-509.*
7. Khalaf Allah, Abdul Aziz Muhammad (1988). *Medicinal, aromatic and poisonous plants in the Arab world, League of Nations Arabic, Arab Organization for Agricultural Development, Khartoum, Misr Printing House, 2015.*
8. Mahdi, M. S., Ali, M. B., & AL-abedy, A. N. (2020). *Genetic variability of the Mite Varroa destructor Isolated from Honey Bees in Iraq and Some Middle Eastern Countries. Indian Journal of Forensic Medicine & Toxicology, 14(1), 1-7.*
9. Majeed, Sami Hashem and Muhannad Jamil Mahmoud (1988). *Iraqi plants and herbs between folk medicine and scientific research. First edition. Dar Al-Thawra for Printing and Publishing, Baghdad. 1988.*
10. Mekete ,G. & Awole, A. (2003). *Parasitology. Jimma University, the Ethiopia Public Health Training Initiative, the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education.*

11. Mohammad, A. (2004). *Studies on two kinds of Ziziphus plants and their effects on some microorganisms*. King Abdulaziz University, Master Thesis.
12. Moreno, A.G.; Ascencio, F.; Angulo, C.; Hutson, K.A. & Pérez-Urbiola, J. C. (2017). *Plant extracts as a natural treatment against the fish ectoparasite Neobenedenia sp. (Monogenea: Capsalidae)*. *Journal of Helminthology*, 93(1):1-9.
13. Oloruntola, D.A. ; Dada, E.O. & Oladunmoye, M.K. (2021). *The in vitro antitrypanosomal activity of Albizia gummifera leaf extracts*. *Deborah Adebukola Olorunto*, 2: 33–39.
14. Qudamah, Ahmed. *Dictionary of food and herbal medicine* (2008). Fifth edition, Dar Al-Nafais Publications, Beirut, 2008.
15. Razzaq, S. (2015). *Effect extract Allium sativum and Punica grantium on white rat Experimental infection Cryptosporidium parvum and Comper with Metranidazole*. University of Al-Qadisiya, College of Science, athesis.
16. Williams, A. R. ; Soelberg, J. and Jäger, A. K. (2016). *Anthelmintic properties of traditional African and Caribbean medicinal plants: identification of extracts with potent activity against Ascaris suum in vitro*. *National library of medicine*. vol. 23,24.
17. Zangueu Calvin, B.; Géorcelin, A. G.; Phillipe, B.E.; Pascal, O.A. ; Annie Laure, M.F. ; Joyce, K.W. ; Laure, N.A.; Blaise, A.A.; Bertrand D.A. & Sylvie, H.M. (2023). *The Anti-parasitic Effect of Extract of Ceiba pentandra (L.) Gaertn Is Related to Its Anti-inflammatory, Analgesic and Anthelmintic Activities on Haemonchus contortus*. *Clinical Complementary Medicine and Pharmacology*, Volume 3, Issue 2.