

RESEARCH HIGHLIGHTS

Malaria; A Devastating Disease

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Malaria is the most prevalent infectious disease which is responsible for the deaths of millions of people living in tropical and sub-tropical regions of the world like South America, Central Africa, Southeast Asia, Australia, and Oceania. The World Health Organization (WHO) reported that malaria parasites infected over 500 million people every year and it is the root cause of 100 million cases of acute illness all over the world¹.

In pregnant women, this disease amplifies the risk of low birth weight of infants, abortions, and in case of birth: newly born babies may develop anemia leading towards mortality². Moreover, malaria has been reported to cause acute renal failure among children³. It also affects the liver in severe cases which is usually a general cause of morbidity as well as mortality among humans⁴.

Due to the failure of chloroquine treatment, the use of other anti-malarial drugs has become common⁵. These drugs are not only expensive as compared to chloroquine but also possess certain toxic side effects on health as well.

Therefore, scientists are investigating the anti-malarial potential of orthodox drugs in combination with plants to get rid of the burden of resistant malaria. Mexican sunflower or tree marigold which is scientifically known as *Tithonia diversifolia* is a significant option in this regard.

This flowering plant has therapeutic potential against several diseases as an oral decoction of the leaves of this plant is effective to cure hepatitis, diabetes and malaria⁶. Scientists are focusing to exploit anti-malarial properties of this plant extracts in combination with chloroquine, which can improve drug efficiency to combat resistant malarial infection without cytotoxic effects.

Accordingly, a new experiment was designed to assess the impact of ethanol leaf extract and a bio-active fraction of *T. diversifolia* administered singly and in combination with chloroquine by using chloroquine-resistant *Plasmodium yoelii* infected mice. For this purpose, researchers selected 96 mice and divided them into twelve groups of eight mice each⁷.

Conclusively, this study exhibited satisfactory results as combined treatment of chloroquine and active fraction of *T. diversifolia* leaf extract were found to be effective to reverse organs' damage, which confirms the protective properties of this procedure.

In a nutshell, this study will help researchers to explore different ways to consume herbal therapy to combat this disease. However, a detailed investigation is needed to describe the bioactive compounds responsible for the therapeutic impact of *T. diversifolia*.

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