

# Analysis and Evaluation of Chilli Pepper to Reduce Fever

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## Abstract:

Traditional poultry farmers use chili pepper as natural herbal medicines to reduce chicken fever as they face a lot of difficulties in terms of cost especially in controlling diseases. This motivates us to determine the bioactive constituents from the spice extract and evaluate its efficacy so as to approve the claimed medicinal activity of the plant.

In this project, we used solvent extraction method and qualitative phytochemical analysis guide to investigate biochemical constituents present in chili pepper and determined the efficacy of the extract for reducing chicken fever.



## Method:

The project involved three basic methods.

### Solvent extraction

We brought the dried chili pepper at Darajani market in Zanzibar. The first procedure we did was doing the extraction using water, ethanol and diethyl ether solvents. We did that through grinding our dried chilli pepper, then soaking for 7 days in the ratio of 50g in 200mls solvent. The process followed by distillation to separate the extract from the solvents.

### Phytochemical analysis

The preliminary qualitative phytochemical analysis was done in our chemistry laboratory to identify bioactive constituents present; these are flavonoid, saponin, tannin, flobatanin, cardiac glycoside, terpenoid, steroid and alkaloid. The presence of these constituents in the extract signifies the medicinal activity of the plant.

The reagents used in this step were 10% ammonia solution, concentrated sulphuric acid, olive oil, 0.1% ferric chloride, glacial acetic acid, 1% hydrochloric acid, chloroform, acetic anhydride, and distilled water as per qualitative phytochemical analysis guide.



## Results:

### Evaluation of the extract:

This was done through taking 10 fevered chickens, measured their initial body temperature and recorded. The food was provided to them for making them thirst and need water then the powdered sample (100grams) was soaked in drinking water (2 litres) of chicken and allowed to drink twice a day for three days. The body temperature was recorded once a day after each 10 hours.

#### Part A

The three solvents used for extraction gave sufficient results. The phytochemical analysis was done stated above. The bioactive constituents were detected in three solvents as shown below:

The presence of these constituents in the plant parts plays an important role in showing medicinal activities such as antioxidant, antidiarrhoeal, antimicrobial and antiviral. The phytochemical constituents and their activities obtained from chilli pepper are summarized in table 2 below:

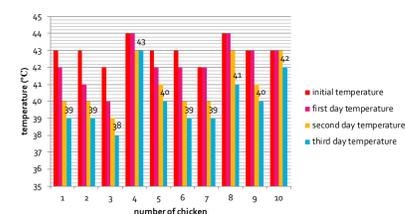
#### Part B

The evaluation of the extract was successfully done as described above. The body temperature of the most of fevered chicken was seen dropping gradually to their normal body temperature from the day one to the third day after being given the extract to drink. However the temperature of some chicken did not return to its normal temperature. The graph below shows the effectiveness of the extract in reducing chicken fever in three days.



Phytochemical Activities	Flavonoid	Saponin	Flobatanin	Cardiac Glycoside	Alkaloid	Terpenoid	Steroid	Tannin
Key:	● antioxidant	● antidiarrhoeal	● antimicrobial	● antiviral				

Phytochemicals	Water extract	Ethanoic extract	Diethyl ether extract
Flavonoid	---	---	---
Saponin	---	---	---
Tannin	---	---	---
Cardiac glycoside	---	---	---
Flobatanin	---	---	---
Terpenoid	---	---	---
Steroid	---	---	---
Alkaloid	---	---	---



## Conclusion:

From the experiment it was proved that, the chilli pepper contain bioactive constituents that can be used to reduce fever for the chicken and maintain the normal body temperature. The use of this spice as medicine for poultry farming will reduce cost for most local farmers and rationalize the use of traditional medicine for treating various health problems.

Apart from phytochemical analysis, we expected to determine the presence of many constituents concerning with fever reducing activities. But the absence of machines made it difficult to perform analysis. Therefore, further studies are needed to perform both qualitative and quantitative analysis of the constituents since the excess of some constituents is dangerous to body of living organism.