

## Haematological Effect of *Telfaria occidentalis* in Rats

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**Abstract:** This study evaluated the effect of *Telfaria occidentalis* diet on haematological indices in rats. 14 male rats were used, they were divided into two groups; control and test. The control group was fed with normal rat feeds while the test group was fed with feeds containing 25% by weight of *Telfaria occidentalis* for 30 days. The Packed Cell Volume (PCV) and total White Blood Cell count (WBC) were determined. The result shows a significant increase in WBC.

**Key words:** PCV, rat, *Telfaria occidentalis*, WBC

### INTRODUCTION

It has been reported that in the tropical environment animals reared under extensive system of animal management seem to thrive better and are usually able to resist some of the endemic diseases to which intensively managed animals continually remain susceptible (Arowolo and Awoyele, 1982). This apparent resistance has been attributed, at least in part to adequate exercise and the possibility of selective and unrestricted grazing whereby a wide variety of edible forages are available to the animals. Some of such plants have been shown to provide not only nutritional but also medicinal benefits (Brander *et al.*, 1982). Man is also known to consume a wide variety of local crops and vegetables which are believed to contribute significantly to the improvement of human health in terms of disease prevention and therapy (Breazile, 1971; Burkill, 1985).

*Telfaria occidentalis* (family *cucurbitacea*) is believed to be one of such plant. A tropical vine grown in West Africa and highly reputed in traditional medicine (Badifu *et al.*, 1995). It is particularly cultivated mostly in the West African sub-region (Burkett, 1968). The fruits of the plant are large and inedible but the seeds contain up to 30% protein and can be boiled and eaten, or ground into powder for soup. The seeds of the plant can also be fermented for several days and eaten as a slurry (Badifu

and Ogunsina, 1991). The root and leaves have been shown to contain highly toxic alkaloids and saponins (Akube, 1980). The leaves are also rich in essential and non-essential amino acids, vitamins and minerals (Tindal, 1968; Fasuyi, 2006).

The herbal preparation of the plant has been employed in the treatment of sudden attack of convulsion, malaria and anaemia (Gbile, 1986). Among the native of Africa, regular consumption of leafy diet of *Telfaria occidentalis* is usually encouraged among pregnant women and sick people with believe that the plant has the potential to improve their blood qualities. In view of this, this study was carried out to investigate the haematological potential of *Telfaria occidentalis* in rats.

### MATERIALS AND METHODS

**Location and duration of study:** This study was carried out at the animal house of the Department of Physiology, Ambrose Alli University, Ekpoma, Nigeria. Preliminary studies, animal acclimatization, feed preparation, actual animal experiment and evaluation of results, lasted for a period of six months.

**Plant material:** Fresh leaves of *Telfaria occidentalis* were obtained from Ekpoma main market after which the

leaves were taken to the Botany Department of Ambrose Alli University, Ekpoma for authentication. The leaves were grounded; sun dried and then mixed with the animal feeds in such a way that the mixture is composed of 25% by weight of the leaves.

**Experimental animals:** A total of 14 male rats were weighing between 150 to 200 g were used for this study. The rats were divided into two groups; control and test groups housed in cages at room temperature (23°-27°C) and left in the animal house for two weeks prior to the commencement of the study. This was done to enable the animals get adjusted to their new environment. The control group was fed with rat feeds while the test group was fed with rat feeds mixed with *Telfaria occidentalis* for 30 days. Fresh water was made available to the two groups *ad libitum*.

**Blood sample collection/haematological test:** At the end of the 30 days of treatment, the rats were sacrificed through cervical dislocation and blood samples collected by cardiac puncture from the two groups of rats. The collected blood samples were kept in heparinised tubes to prevent blood clotting while the following blood parameters were investigated: Packed Cell Volume (PCV) and White Blood Cell count (WBC count). Packed cell volume (PCV) was measured by the microhaematocrit centrifuge and spinning for 5 min. At 12,000×g before reading with the haematocrit reader. The white blood cell counts were done using the haemocytometer method.

**Statistical analysis:** Results were expressed as mean ± S.E.M. The significance of difference between means were determined by the students t-test and results were regarded as significant at p<0.05.

## RESULTS AND DISCUSSION

The results of this study are as shown in Table 1. There is no statistically significant difference between the PCV of the test and control group. However there is a statistically significant increase (p<0.05) in the WBC of the test group compared with control group.

The result of this study shows no significant difference in Packed Cell Volume (PCV) but a significant increase in the White Blood Cell count (WBC) of the group fed with *Telfaria occidentalis* diet.

The PCV result of this study is contrary to the findings of Alada (2000), where it was reported that *Telfaria occidentalis* diet significantly increased the PCV in rats. Dina *et al.* (2000) also reported the haematocrit property of the extract of *Telfaria occidentalis* in experimentally induced domestic rabbits. However our

Table 1: Effect of *Telfaria occidentalis* on some haematological parameters in rats (n = 14)

	Control	Test
PCV (%)	41.25±0.3	41.75±0.12
WBC (× 10 <sup>3</sup> /mm <sup>3</sup> )	9.887±0.52	21.6±0.85*

\*: p<0.05

result on WBC is in conformity with the findings of Alada (2000) and Dina *et al.* (2000) where *Telfaria occidentalis* was reported to have caused significant increase in the WBC.

*Telfaria occidentalis* has been reported to contain haemopoietic factors such as iron, vitamin B6 and B12 (Tindal, 1968) and somehow this has been attributed to its haematological effect. However the mechanism behind the haematological effect of the plant was not investigated in this study.

The findings of this study therefore support the claim that *Telfaria occidentalis* is a medicinal plant and its consumption should be recommended for sick people.

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