Comparative data on the feeding ecology of Mopane worms and Elephants

1. FEED CONSUMPTION

Elephant calculation:

Data reflecting the relative percentage of browse in an elephant's diet, as determined seasonally from faecal samples is 26,6% – adapted from various published articles on elephant feeding.

On the farm Hagnewood (Messina district) about 85% of the plant composition is mopane *Colophospermum mopane*. Thus for academic purposes, assume that 85% of the mean browse percentage (26,6%) reflected above is mopane leaf material i.e. 0,85 of 26,6% = 22,6%.

According to the Kruger Park's elephant population density, the desired number of elephants per km² is between 0,35 and 0,39 elephants per km². Thus, an area of 4000ha or 40km², would theoretically be able to support 0,35 x 40 elephants = 14 elephants.

Thus on the farm Hagnewood, 14 elephants would consume the following amount of mopane leaf material annually:

365 (no. days) x 14 (no. elephants) x 13, 56kg (22,6% of 60kg – 60 kg being the dry mass of the material a mature bull of body weight 5000kg consumes daily – from Meissner 1990).
= 69291,6kg = 69,29 tonnes

Mopane worm calculation:

The mopane worm population into the fifth and final instar (larval development stage) on Hagnewood was estimated at around 18 937 500 individuals. A mopane worm consumes around 41 gram(g) of dry leaf material (mopane) during its development.

Thus the amount of mopane leaf material (dry mass) consumed by these caterpillars from late November 1993 through to early January 1994 (a six week period) amounts to:

18 937 500 x 0,041kg=776 437,5 kg = 776,4 tonnes

● **Thus over only a six week period, mopane worms processed 11,21 times the amount of mopane leaf material which 14 mature bull elephants are capable of processing annually** ●

2. DUNG PRODUCTION

Elephant calculation:

Data from Meissner (1990) reveals that an adult bull elephant voids around 35kg of dung daily (dry mass). Thus again assuming that the farm of 4000ha supports 14 elephants, then the amount of dung they would produce annually amounts to:

365 x 14 x 35kg = 178 850kg = 178,8 tonnes.

Mopane worm calculation:

Data collected by myself in feeding trials shows that on average a mopane worm voids 35g of frass/dung (dry mass). Thus over the six week period, the 18 937 500 mopane worms would have produced:

18 937 500 x 0.035kg
= 662 812.5kg = 662,8 tonnes

● **Thus over only a six week period, mopane worms produced 3,71 times the amount of dung which 14 mature bull elephants are capable of producing annually** ●

Food for thought!

Chris Styles.

Two young White Rhinos poached at the Kapama Game Reserve

An orphaned rhino calf, called Lahliwe (The Rejected One), was obtained by Kapama from Natal earlier this year to act as a companion for Ronnie, a three-and-a-half-year-old white rhino bull, brought to the reserve from the Longleat Lion park in England.

At the end of June, a poacher apparently climbed over a high game fence at the Kapama Lodge, shot the rhino calf and hacked off its tiny horn. Lahliwe was riddled with bullet wounds, and an AK-47 cartridge shell was found at the scene. Ronnie went into hiding but two days later he, too, sadly died. The post mortem revealed that he didn't escape the alleged poacher's bullets – his body was unable to withstand the wounds inflicted on him at the time of the attack.

Following this double tragedy, an anti rhino-poaching fund has been established in order to financially contribute towards the individuals or groups of people involved in anti-poaching operations.

Mrs Lente Roode, the owner of the Hoedspruit Cheetah Breeding and Research Centre (part of the Kapama Game Reserve), had been personally involved in the raising of these two rhinos and will do everything in her power to assist against poaching.