This experimental study investigated the psychological and physiological sequelae of marijuana intoxication. Ten Wistar rats (5 females and 5 males) were observed before and after varying dosages of marijuana extract were administered to them, based on their body weights and following $LD_{50.}$ Such psychological parameters as memory, anxiety, sleep/wake behaviour, eating behaviour, social interaction, and motor skills of the rats were observed and recorded. We hypothesised that marijuana would cause physiological, psychological and physical changes in the rats and that these would vary between female and male rats. Findings indicated that onset of intoxication occurred within 45minuts of ingesting the marijuana orally. Marijuana exerted important changes in all six psychophysiological parameters (memory, anxiety, sleep/wake behaviour, eating behaviour, social interaction, and motor skills). Among other recommendations, subsequent experimental studies should endeavour to account for specific proportions of cannabinoids present in the cannabis strain used.