

# THE CHEMISTRY OF THE SMELL OF DECOMPOSITION

## THE STAGES OF DECOMPOSITION

1

*Fresh*

2

*Bloated*

3

*Active Decay*

4

*Advanced Decay*

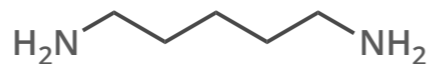
**1. Fresh Stage:** begins almost immediately; enzymatic breakdown of cells & tissue (autolysis) begins. Visible signs limited. **2. Bloated Stage:** metabolic activity of bacteria produces gases, causing the carcass to inflate & swell. Pressure forces fluids from natural orifices, producing strong odours. **3. Active Decay:** liquefaction and disintegration of tissues observed. Odours persist. **4. Advanced Decay:** decomposition rate decreases due to loss of mass. Eventually, dry remains are all that remain.

## *A Selection of Odour-Causing Chemicals in the Decay Process*



### 400+ VOLATILE COMPOUNDS

Decomposition is a complicated process, and varies depending on conditions. A wide range of chemical compounds are produced, many more than can be shown here, though not all of them will contribute to odour.



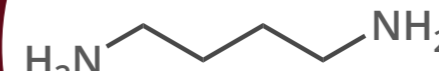
### *Cadaverine*

(pentane-1,5-diamine)

SMELL

**FOUL, ROTTING FLESH**

*Also partly responsible for the distinctive odours of urine & semen.*



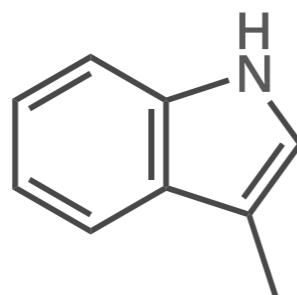
### *Putrescine*

(butane-1,4-diamine)

SMELL

**PUTRIFIED FLESH, GARBAGE**

*Along with cadaverine, putrescine also contributes to bad breath.*



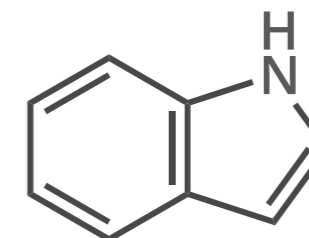
### *Skatole*

(3-methylindole)

SMELL

**STRONG FAECAL ODOUR**

*Also found in human faeces. Has a flowery smell at low concentrations.*



### *Indole*

(indole)

SMELL

**PUNGENT, MUSTY, STALE**

*Like skatole, occurs in faeces, but used in low concentrations in flower scents & perfumes.*

