



The Formula For Success
Die Formule Vir Sukses

DIOXINS

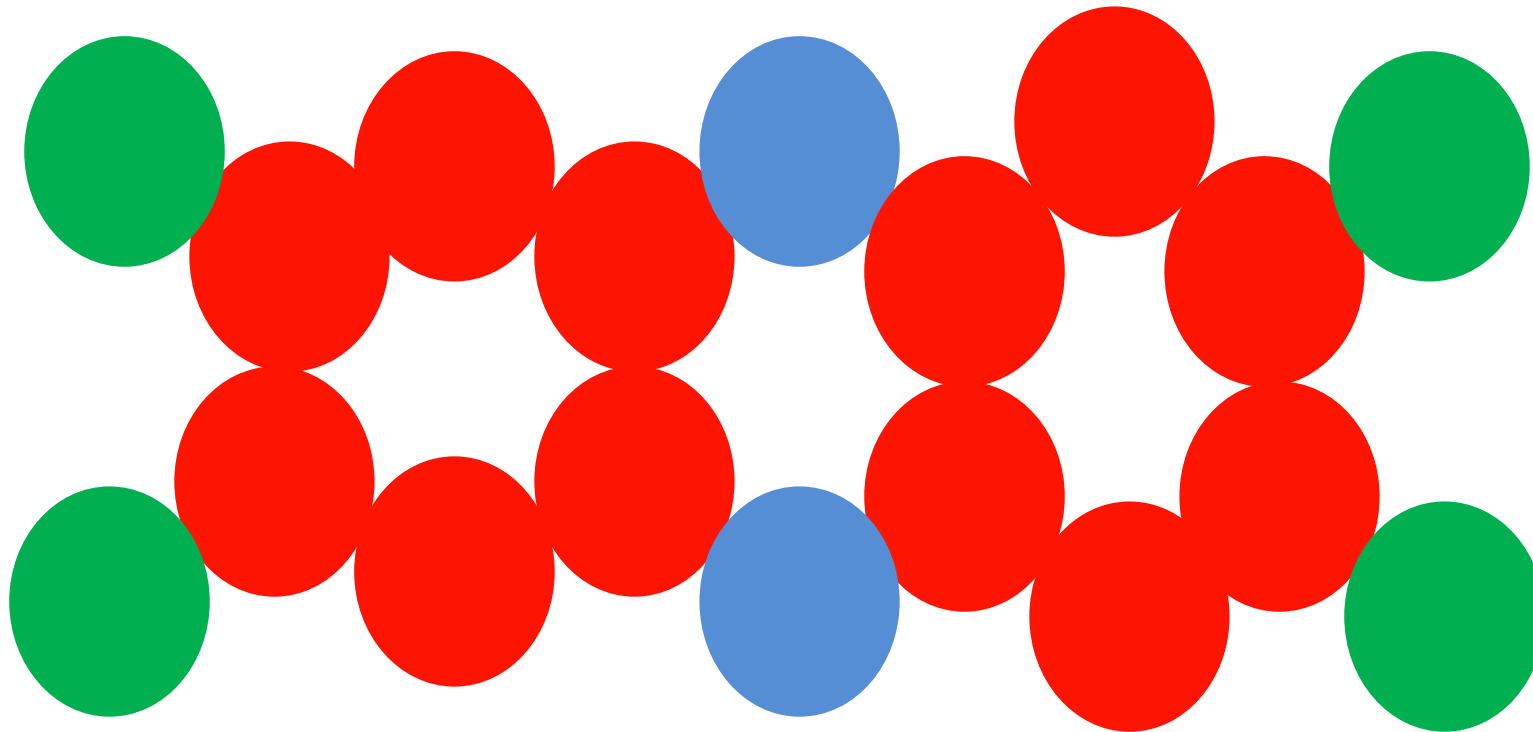
Loutjie Dunn



STRUCTURE OF DIOXIN



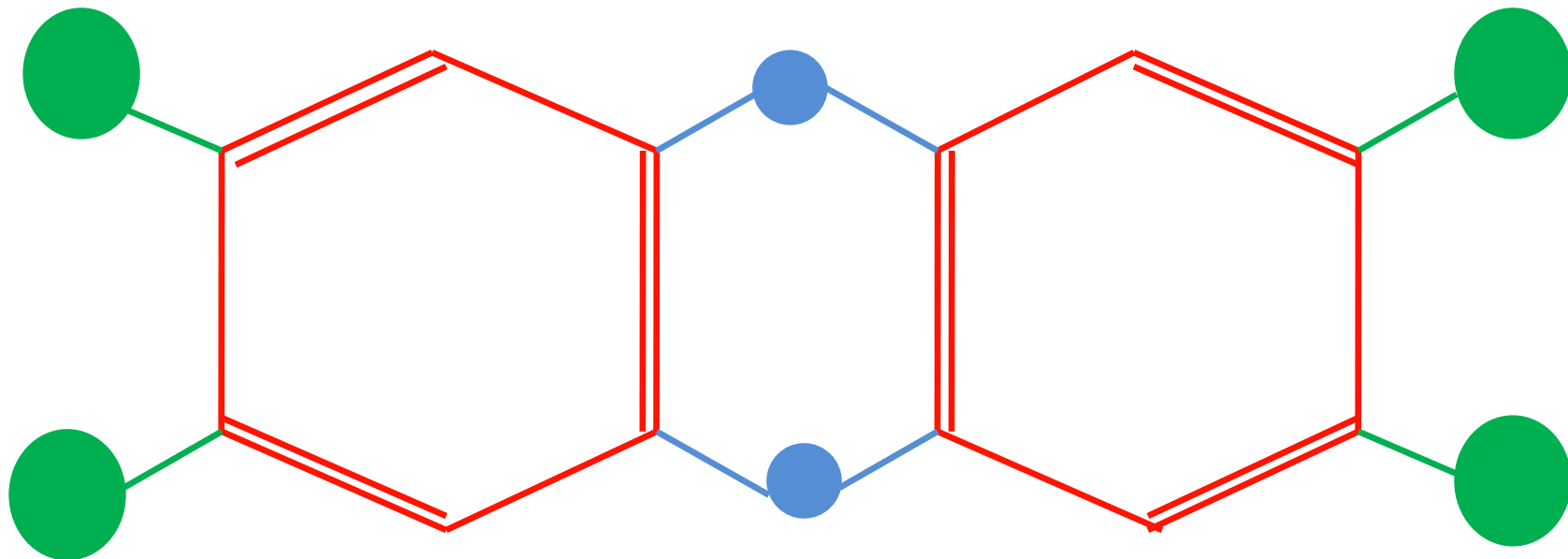
The Formula For Success
Die Formule Vir Sukses



STRUCTURE OF DIOXIN



The Formula For Success
Die Formule Vir Sukses



WHAT IS DIOXIN?



*The Formula For Success
Die Formule Vir Sukses*

- **General name referring to:**
 - All Dioxins and
 - Dioxin type PCB's (Polychlorinated biphenyls)
- **Very similar chemical structure**
 - More than 200 different chemical structures known
 - 20 Dioxins biologically active
 - 130 found in commercial PCB products
 - Formed differently

WHERE DOES IT COME FROM?



*The Formula For Success
Die Formule Vir Sukses*

- **Dioxins – Formed naturally**
 - Active volcanoes
 - Forest fires
 - Industrial process of incineration
- **PCB's – Commercially produced (1920's)**
 - Electrical equipment
 - Hydraulic oils
 - Transformer oil
 - Paint

HOW DOES IT GET INTO FEED ?



*The Formula For Success
Die Formule Vir Sukses*

- **Dispersed into the environment**
 - Through the atmosphere
 - Eventually end up in water
- **Very persistent structures**
- **Fat soluble**
- **Concentrate in fatty food (feed) sources**
- **Fact – Almost all known food (feed) sources do contain some dioxins**

WHAT IS THE RISK ?



*The Formula For Success
Die Formule Vir Sukses*

- **Health risk**
- **Generally accepted to be carcinogenic**
- **Wide range of organs (Animals and humans)**
- **Skin problems**
- **Diabetes**
- **Many other symptoms**

HOW BIG IS THE RISK ?



*The Formula For Success
Die Formule Vir Sukses*

- **Epidemiological study Australia**
 - Different populations
 - Exposed constant high levels
 - No increase in total mortalities
 - No increase in cancer related mortalities
- **WHO**
 - Feed and food guidelines
 - Reduce the potential risk
 - Presence in food common

THE RECENT GERMAN SCARE



*The Formula For Success
Die Formule Vir Sukses*

- **Source**
 - Product from biodiesel manufacturer
 - Process used cooking oil
 - Also feed industry products
 - Raw product declared “for technical use only” were used in the production of feed fats
- **Actions (Within 30 days)**
 - Identify source
 - Determine extend of the problem
 - Withdraw products from the market
 - Improve controls and procedures
 - Quantify impact

IMPACT ON GERMAN INDUSTRY



*The Formula For Success
Die Formule Vir Sukses*

- **No animal mortalities**
- **No human mortalities**
- **Direct financial loss for the livestock industry**
 - 100 million Euros (Estimate)
- **Expect lower consumption of pork and eggs (not quantified)**
- **Expect a loss of export markets (not quantified)**

LESSONS FOR SOUTH AFRICA



*The Formula For Success
Die Formule Vir Sukses*

- Areas where we are worse off than Germany
- Areas where we are on par with Germany
- Areas where we are better off than Germany
- Changes to be considered



*The Formula For Success
Die Formule Vir Sukses*

AREAS WHERE WE ARE WORSE OFF

- **No local laboratory**
- **European labs**
 - Expensive
 - Turn around time
- **AFMA dioxin database**
 - Started in 2010 (limited data)



AFMA DIOXIN DATABASE



*The Formula For Success
Die Formule Vir Sukses*

- **55 Products tested**
- **4 tests higher than maximum limit**
 - 1 Blended oil
 - 1 Vegetable oil
 - 2 Soy oil
 - Maximum level tested 8.52 ng/kg
 - Safe up to 9.0 % inclusion into final feed
- **Final feed products below detectable limit**
- **Levels in raw material other than oil**
 - All below 0.75 ng/kg

AREAS WHERE WE ARE ON PAR



*The Formula For Success
Die Formule Vir Sukses*

- **Dioxin database compulsory**
- **Early warning system**
- **No specific approval of establishments manufacturing, treating or distributing fatty products for the feed market**
- **Dioxin and PCB guideline levels the same**

AREAS WHERE WE ARE BETTER OFF



*The Formula For Success
Die Formule Vir Sukses*

- **AFMA code of conduct**
 - Legal compliance
 - Aimed at feed and food safety
 - Use only registered ingredients
 - Independent audit
- **Feed fats and oils must be registered (Act 36)**
- **AFMA transport protocol (2010)**
- **SA feed industry – ISO 22 000 certification**
- **AFMA sub committee to focus on quality of fats and oils**



CHANGES TO BE CONSIDERED



*The Formula For Success
Die Formule Vir Sukses*

- **Increase frequency of dioxin and PCB testing**
- **Compulsory monitoring system for manufacturers and transporters of**
 - **Fats and oils**
 - **Raw materials with high fat content**
- **Reporting the illegal use of unregistered raw materials or illegal practices to authorities**

THANK YOU



*The Formula For Success
Die Formule Vir Sukses*





*The Formula For Success
Die Formule Vir Sukses*



7/21/2011

18

