

# SUPPLEMENTATION IN SOUTH AFRICA

*Du Toit, Louw & Malan*  
*1940*



# VOERMOL FEEDS

- In business for 50 years plus
- Product development; Own and other research, customer needs, costs .....
- Big product range: Supplements  
Concentrates  
Energy feeds



***“By correct supplementation the estimated NE value of low quality roughages can be increased by up to 34%”***

- Todorov, Zagdsuren, Tserendulam & Badam, 1983.





**VALUE OF SUPPLEMENTATION**  
**on weaning %**

**NONE** < 60

**COMPLETE PROGRAMME** > 80



# REASONS FOR LOW WEANING %

- **PROTEIN SHORTAGE DURING WINTER**
- **INSUFFICIENT ENERGY CONSUMPTION DURING LATE WINTER**
- **INSUFFICIENT CONSUMPTION OF PHOSPHORUS (P) DURING SUMMER**
- **TRACE MINERALS**
- **POOR / UNBALANCED NUTRITION**
- **DISEASES**

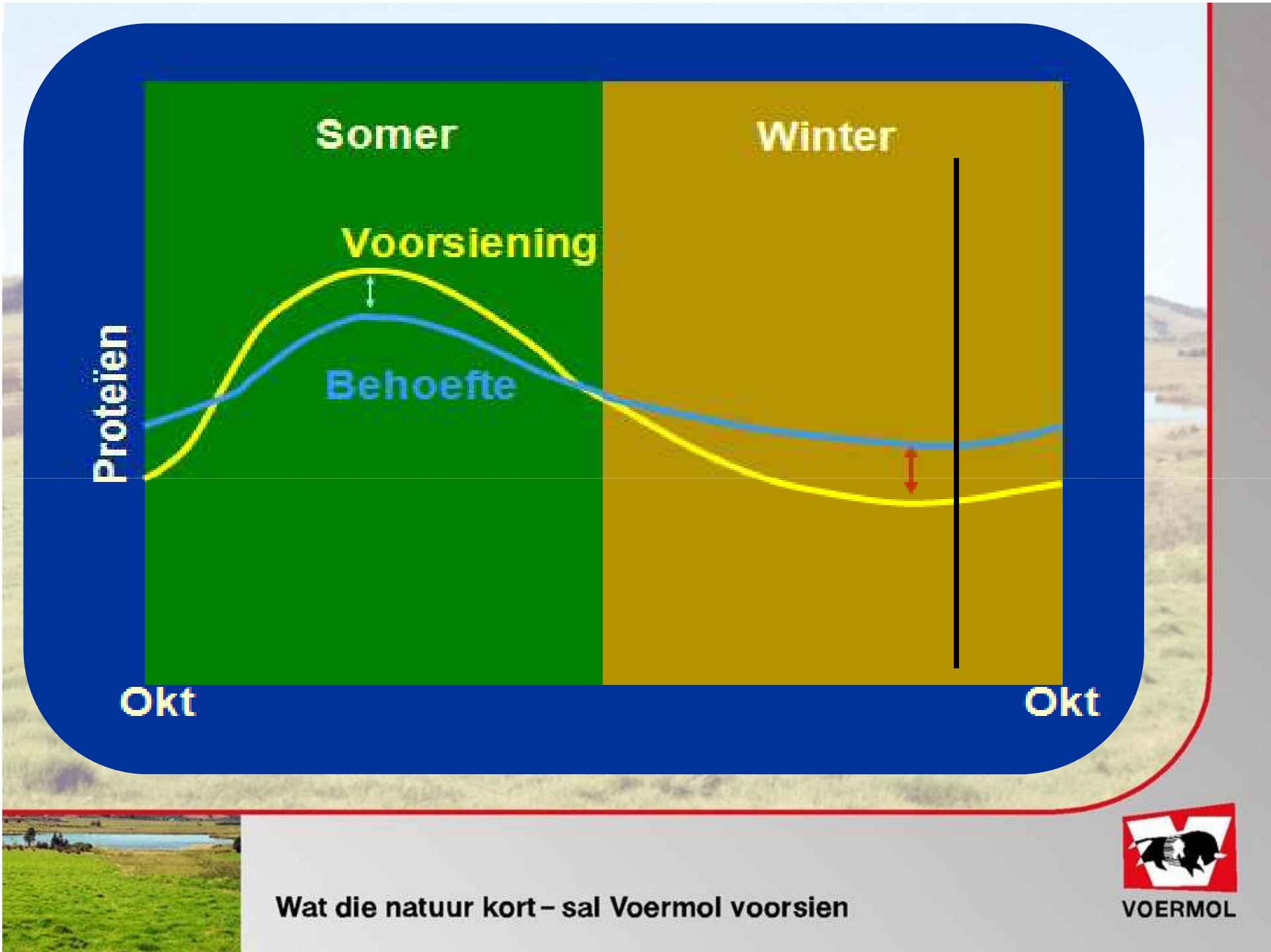


# PRINCIPLES

- Supplement the limiting nutrient  
*season, production*
- Improve utilization of grazing  
*substitution*
- Increase productivity  
*weaning % & mass*

*Breeding cow:*                       $\pm$  3 ton grazing  
 $\pm$  180 kg supplements

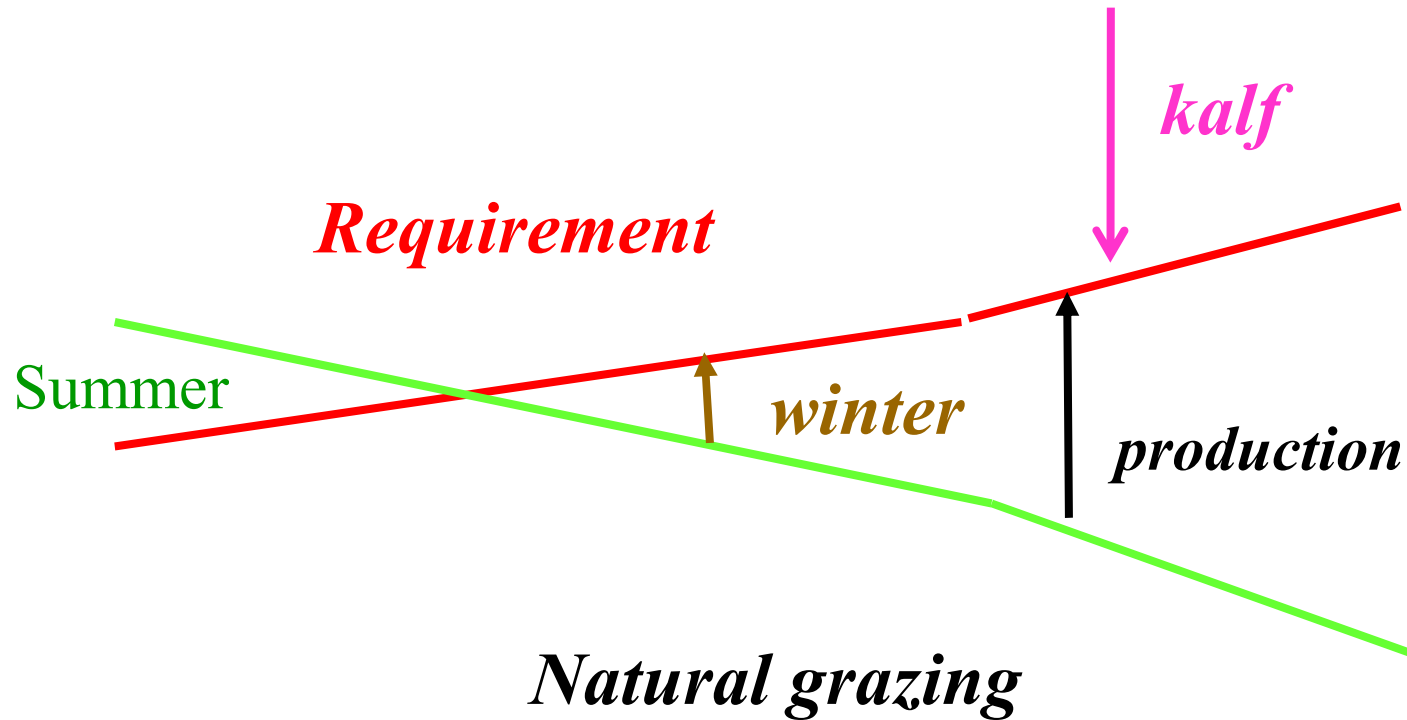




Wat die natuur kort – sal Voermol voorsien



# 3-phase program



## 3-phase lick program

	<u>SUMMER</u>	<u>WINTER</u>	<u>LATE WINTER</u>
<b>NUTRIENT</b>	<b>P</b>	<b>PROTEIN</b>	<b>PROT. &amp; ENERGY</b>
<b>SUPPLEMENT</b>	<b>Minerals</b>	<b>Protein</b>	<b>Production</b>



# **Phase 1**

# **SUMMER**



**Phase 1**  
**SUMMER**

***FIRST LIMITING NUTRIENT***  
***PHOSPHORUS (P)***

**Minimum – 6 g P /day**



**VOERMOL**



**Phosphorus deficiency**



**Phosphorus supplementation**

**Phosphorus intake - adequate**

**Trace minerals - Cu, Zn, Mn, Co, I & Se**

**Fe**



# **FOSFOR**

**‘n Tekort aan fosfor gee aanleiding tot ‘n laer groeitempo, verlaagde vrugbaarheid en melk- produksie wat speenmassa nadelig beïnvloed.**

**Voldoende fosforinname is dus uiters noodsaaklik vir ‘n hoë kalfpersentasie en groeitempo.**

**Saam met spoorminerale belangrik vir produksie.**



**VOERMOL**

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# Phosphorus Sources

**P is unpalatable**

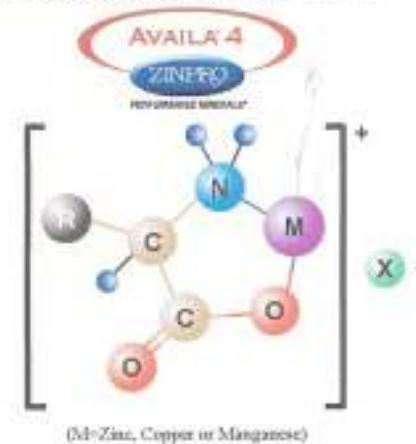
**Best source: MCP / P21 & P acid**

**Other sources: DCP / P18, bone meal**

**Organic Trace Minerals**

**Zn, Cu, Co & Mn**

MOLECULAR STRUCTURE



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# Breeding Cow

<u>Period</u>	<u>Salt</u>	<u>P</u>	<u>Diff.</u>
Oct - Mar	+80.9 kg	+139.1 kg	+ 58.2 kg





**Superfos**  
5% P  
120g – 240g/h/d



**Phosphate Block**  
6% P  
100g – 240g/h/d



**Rumevite P12 & 6P**  
12 or 6% P  
120g – 240g/h/d



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Phase 2  
WINTER



# Effect of protein supplementation on reconception

<u>Year</u>	<u>Salt</u>	<u>Protein</u>	<u>Improvement</u>
1	58	75	17
2	38	62	24
3	46	60	14
Avg	46	63	17

ARC, Potchefstroom



# Phase 2 WINTER

A shortage in **protein** will result in weight loss and dramatic drop in weaning %.

By supplementing protein, the utilization of natural grazing will be improved.

<b>Recommendation:</b>	<b>Min</b>	<b>150g prot/h/d (Act 36)</b>
	<b>In practice</b>	<b>180g prot/h/d plus</b>
	<b>Research</b>	<b>240g prot/h/d plus</b>



## Phase 2 WINTER

**Urea is the cheapest source of protein. ±6 times cheaper than oilcake.**

**The use of urea is risky.**

<b>Maximum intake:</b>	<b>Maintenance</b>	<b>90g/h/d</b>
	<b>Production</b>	<b>120g/h/d</b>



# WINTER SUPPLEMENTS

▣ **Voermol Premix 450**

*Ready mixed, 45% protein*

*Recommended intake 350 – 500g/h/d*



▣ **Rumevite Cattle Block**

*block, 40% protein*

*Recommended intake 375 – 450g/h/d*



▣ **Voermol Ekonolek**

*Ready mixed, 24% protein*

*Recommended intake 630– 800g/h/d*



▣ **Voermol Dundee Lick Concentrate**

*Concentraate 80% protein*

*See mixing instructions*



## VOERMOL PROTEIN BLOCK

Class: Protein & Mineral Supplement for Ruminants

**VOERMOL PROTEIN BLOCK** supplies protein, minerals and Vitamin A, and is specially developed for cattle and sheep which are on protein deficient pasture or are being fed roughage;

- is easy to handle and ready to use;
- is molasses based which increases palatability and ensures good intakes;
- stimulates the rumen micro-organisms and thus increases the intake of dry matter;
- contains, apart from urea, quality natural protein.

COMPOSITION OF VOERMOL PROTEIN BLOCK			
REG NO V10448 (Act 36/1947) N-FF 0429			
	(g/kg)		(mg/kg)
*Crude Protein (min)	280	Manganese	100
Urea (max)	78.2	Copper	25
Crude fibre (max)	30	Cobalt	0.3
Moisture (max)	140	Iron	208
Calcium (max)	48	Iodine	2.5
Phosphorus (min)	10	Zinc	100
Sulphur	6	Selenium	0.5
		Vitamin A (IU/kg)	12 750

\*80.16 % derived from NPN

Packaging – 25 kg

See urea warning on p. 5.

**Cattle: 550 - 650**

### FEEDING INSTRUCTIONS

To prevent hungry animals from over consuming, **Voermol Protein Block** must be available at all times during the feeding period. The following guidelines can be used to ensure adequate intake:

Sheep: Supply 1 **Voermol Protein Block** to 25 – 30 sheep

Cattle: Supply 1 **Voermol Protein Block** to every 10 – 20 animals

### RECOMMENDED INTAKES (g/animal/day)

Sheep (maintenance): 100 – 140

Cattle: 600 – 650

Lactating cows: 650 – 800

## VOERMOL PREMIX 450

Class: Protein Supplement for Cattle

**VOERMOL PREMIX 450** is a cost effective maintenance lick for cattle;

- is a ready mixed lick which stimulates intakes and digestion of dry roughage as it provides protein, minerals and vitamins which stimulate the micro-organisms in the rumen;
- helps prevent dry gall sickness because molasses is mildly laxative;
- provides trace elements essential for a healthy appetite;
- is a concentrated source of protein which results in lower cost per unit of protein;
- can be mixed with maize meal, hominy chop or any other grain to produce a production lick.

COMPOSITION OF VOERMOL PREMIX 450			
REG NO V4676 (Act 36/1947) N-FF 0085			
	(g/kg)		(mg/kg)
*Crude Protein (min)	450	Manganese	150
Urea (max)	131.2	Copper	75
Crude fibre (max)	100	Cobalt	3.1
Moisture (max)	160	Iron	225
Calcium (max)	12	Iodine	18
Phosphorus (min)	2.4	Zinc	225
Sulphur	12	Selenium	1.8
		Vitamin A (IU/kg)	10 000

\*94 % derived from NPN

Packaging – 50 kg

See urea warning on p. 5.

**Cattle: 350 - 500**

### FEEDING INSTRUCTIONS

**Voermol Premix 450** can be fed on its own as a maintenance lick or it can be mixed with grain to make a production lick. The high P production lick is recommended for late pregnant and lactating cows and young growing animals.

The intakes of the lick will be influenced by the quality of the pasture or roughage and the production status of the animal.

# Dundee Lick Concentrate



MIXING INSTRUCTIONS (kg)					
	Maintenance			Production	
	1	2	3	4	5
Voermol Dundee Lick Concentrate	400	250	300	200	250
Voermol HPC 36	–	–	50	100	–
Voermol Rumevite 12P	–	–	50	50	50
Maize meal	–	100	100	400	550
Salt	250	150	250	150	150
<b>Total</b>	<b>650</b>	<b>500</b>	<b>750</b>	<b>900</b>	<b>1 000</b>
COMPOSITION (g/kg)					
Crude Protein (min)	505	427	363	260	251
Urea (max)	167	136	109	60	68
Calcium (max)	3	3	19	15	14
Phosphorus (min)	1.2	1.5	9.6	9	7.8
Energy (MJ ME/kg)	–	–	–	7.8	7.9
% Protein derived from NPN	95.3	91.5	86.0	66.9	77.7
RECOMMENDED INTAKES (g/animal/day)					
Cattle	300 – 400	355 – 470	450 – 600	1550–1750	1520–1750
Sheep	X	X	100–160	250–290	250–295

# PHASE 3

## Late winter / cow-calf



# PHASE 3

## Late winter / cow-calf

- **± 60 days after calving**
- **Most critical period**
- **Protein and energy**
- **High consumption; 1.5 kg to 2 kg/h/d**
- **Calving season**



# Condition vs. conception

<u>Score</u>	<u>Calving</u>	<u>30 days p.p.</u>	<u>Breed</u>
<2	60	60	54
2.5 – 3.0	72	75	82
>3	80	82	80



UOFS



## **Production Lick**

**25 % Protein**

**1 500 – 1 620 g/h/d**



## **Super 18**

**18 % Protein**

**1 400 – 2 000 g/h/d**

*Mixes with Premix 450 & Dundee Lick Concentrate*

# Cost per cow

## 3-phase lick program

<u>Season</u>	<u>Days</u>	<u>Cost/h/d</u>	<u>Total</u>
Winter	150	95c-220c	R210
Late winter	60	350c-450c	R240
Summer	150	38c-47c	<u>R 65</u>
			<u>R515</u>



# Cost per cow

## 3-phase lick program

<u>Season</u>	<u>Days</u>	<u>Cost/h/d</u>	<u>Total</u>
Winter	150	95c-220c	R210
Late winter	60	350c-450c	R240
Summer	150	38c-47c	<u>R 65</u>
			<u>R515</u>

vs.

↑ Weaning weight/cow:  $\pm 80$  kg @ R17.00 = R1 360

1 : 2.6



# COSTS

*WHAT CAN BE DONE  
TO REDUCE THE COST OF  
SUPPLEMENTATION ?*



# COSTS

- **Manage & control lick consumption**

*actual vs. recommended consumption*

- **Choice of product**

*Ex: Ekonolek – Heifers; Premix 450 – adult cows*

- **Strategic use of Production licks**

*Production lick &/or Molovite/Supermol*



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# COSTS

- **Reconsider P in winter licks**

*Voermol Premix 450*

- **Calving season**

*reduce days*

- **Manage heifers separately**

- **Energy sources**

*use cheapest*



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***THE BEST WAY TO REDUCE COSTS  
IS TO IMPROVE  
PRODUCTIVITY!!!!***



# Production information of the winners

*- Hendrik van Pletzen*

<b>Winner</b>	<b>District</b>	<b>Pasture/roughage</b>	<b>Wean %</b>
JA Venter	Volksrust	Veld and hay	97.6
CF Durow Trust	Clocolan	Veld, maize stover, hay, limited green feed	95.5
CV Boerdery	Memel	Veld, rested veld, limited maize stover, cultivated pastures	96.3
AJ Swart (Malemba Bdy)	Louwna	Veld, cultivated pasture, silage	93.9
Willem de Waal Boerdery	Moorreesburg	Medics, crop residues, wheat straw	97.2
Frans van den Berg Trust	Reivilo	Veld	95.1
Wink Broers	Barkly East	Veld	96.9



**Wat die natuur kort – sal Voermol voorsien**



**VOERMOL**



thank you  
[utm@mweb.co.za](mailto:utm@mweb.co.za)  
083-414 5928

VOERMOL  
DUNDEE  
LEKKONSENTRAAT

Meng met die Beste

50

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