

普钙/重钙型尿基复合肥造粒新工艺

SLOW-RELEASE UREA BASED SSP/TSP COMPOUND FERTILIZERS

—A Two-Step Process of Their Production

四川泸天化(集团)有限责任公司
中国·四川

Lutianhua Group Inc., Sichuan, China

2006 IFA AGRICULTURE CONFERENCE
Kunming, China, February 27, 2006



1. 工艺介绍

A Brief Introduction to the Two-Step Process

2. 工业实践

The Industrial Practice of the Two-Step Process

3. 农业应用

Agro-Application of the Products

4. 技术特点

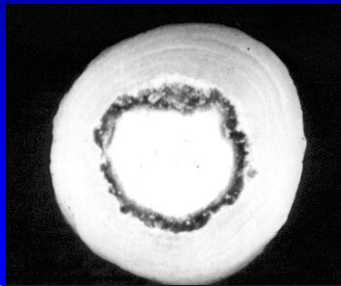
Advantage of the Two-Step Process

1. 工艺介绍

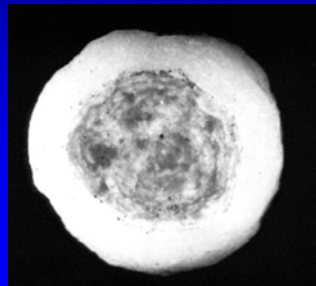
A Brief Introduction to the Two-Step Process

1.1 造粒机理

Mechanism of the Two-Step Process



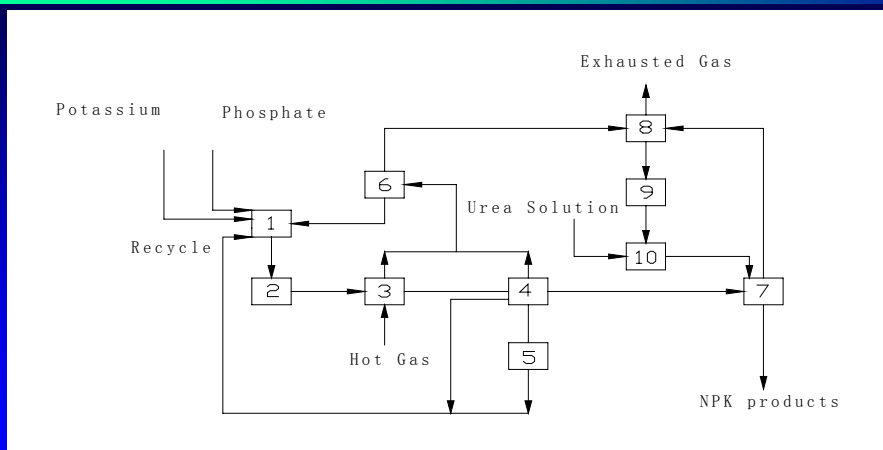
Section of the SSP Urea Based Granule



Section of the Low N-content Compound Fertilizer with Coated Urea

1.2 工艺流程

Demonstration of the Two-Step Process



- 1-Mixer
- 2-First Granulator
- 3-Dryer
- 4-Cooler
- 5-Screens
- 6-Cyclone
- 7-Second Granulator
- 8-Scrubber
- 9-Static Mixer
- 10-Concentrator

2 工业实践



The Industrial Practice of the Two-Step Process

➤ 2.1 普钙、重钙型尿基复合肥生产

Manufacture of urea based SSP, TSP compound fertilizer.

➤ 2.2 低氮复合肥增氮

Increase of N percentage of low N-content compound fertilizer.

➤ 2.3 NPK三元复合肥和钙、硅、硫、锌中微量元素复合肥生产

Manufacture of Ca, Si, Sulfur and Zinc Secondary & Micro Nutrients NPK Urea Based Compound Fertilizers

4

2.1 普钙、重钙型尿基复合肥生产



Manufacture of urea based SSP, TSP compound fertilizer

普通过磷酸钙: $P_2O_5 \geq 16\%$



SSP: $P_2O_5 \geq 16\%$ Produced by Gui Kailin Group Inc.



5

生产成尿基复合肥后: $N\ 22\%$, $P_2O_5\ 8\%$

Product of Urea Based NP Compound Fertilizer: $N\ 22\%$, $P_2O_5\ 8\%$

尿素-普通过磷酸钙复合肥

$N-P_2O_5-K_2O: 22-8-0$

生产工艺: 流态化造粒



技术来源: 泸天化公司技术中心

6

重过磷酸钙: $P_2O_5 \geq 43\%$

TSP: $P_2O_5 \geq 43\%$

(Produced by Three Circle Chemical Co. Ltd.)

重过磷酸钙

有效磷 $P_2O_5 \geq 43\%$

原料来源: 云南三环股份有限公司

生产成尿基复合肥后: N 25% , P₂O₅ 20%

Product of Urea Based NP Compound Fertilizer: N 25% , P₂O₅ 20%



2.2 NPK复合肥增氮

Addition of N to NPK Compound Fertilizer



增氮前: N-P₂O₅-K₂O
(13-17-15)

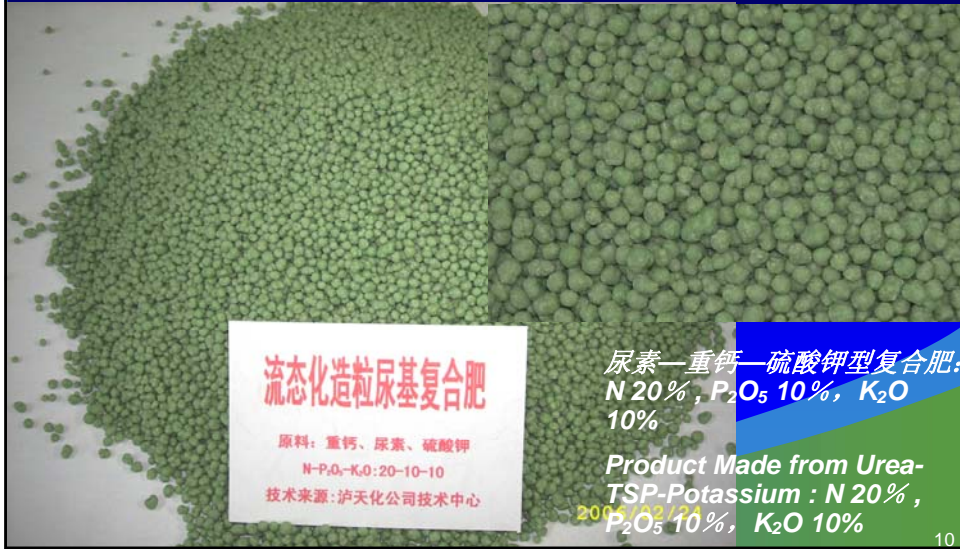


增氮后: N-P₂O₅-K₂O
(28-9-8)

复肥原料: 贵州西洋肥业有限公司

The Original NPK Fertilizer Produced by Guizhou Xiyang Fertilizer Group Inc.

2.3 NPK三元复合肥和钙、硅、硫、锌中微量元素复合肥生产
 Manufacture of Ca, Si, S and Zn Secondary & Micro
 Nutrients NPK Urea Based Compound Fertilizers



10

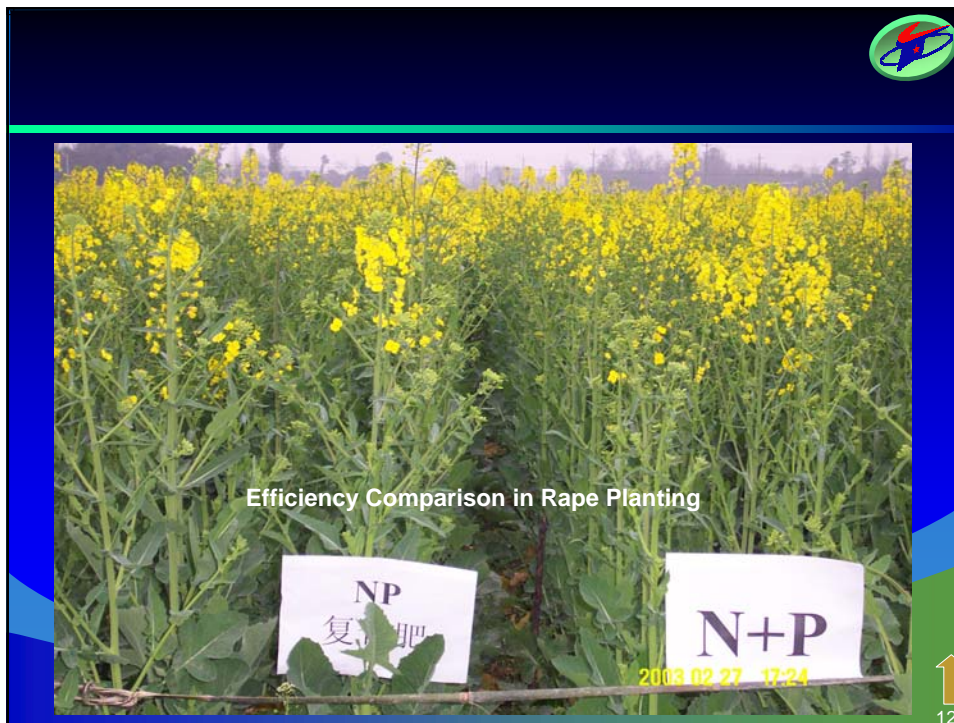
3. 农业应用



Agro-Application of the Products



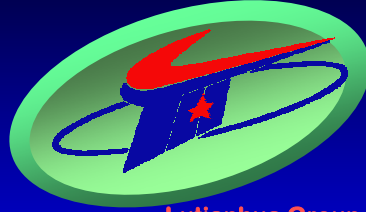
11



4. 技术特点

Advantages of the Two-Step Process

- The incompatibilities of urea between SSP/TSP can be successfully overcome by this Two-Step process. And a series of urea based compound fertilizers can be manufactured economically.
- The release of nutrients of these urea compound fertilizers can meet the different needs in the different growing periods of the crops.
- The products made by this process has an advantage of anti-caking and can be stored for more than 1 year without agglomeration and hygroscopicity.



Lutianhua Group Inc.

谢谢!
THANKS!