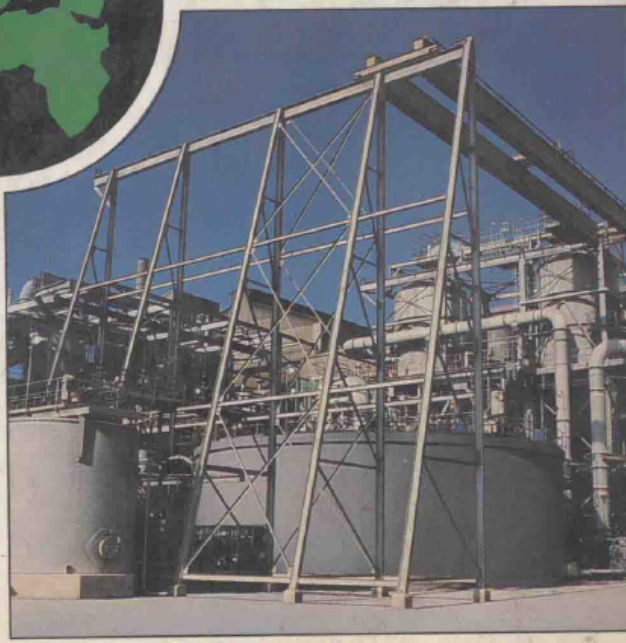
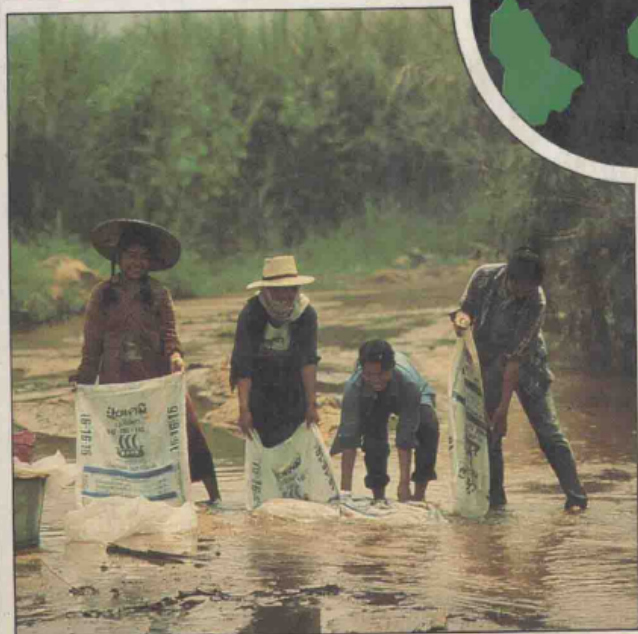


世界化肥 文献精选

WORLD FERTILIZER INDUSTRY REVIEW



英国硫有限公司

The British Sulphur Corporation Limited

The greatest care has been taken
to ensure accuracy but the publishers
cannot accept responsibility for
errors or omissions.

© 1985 – The British Sulphur Corporation Limited

All rights reserved. No part of this publication may be reproduced,
stored in a retrieval system or transmitted in any form or by any
means – electronic, mechanical, photocopying, recording or
otherwise – without the prior written permission of the Copyright owner.

1985

THE BRITISH SULPHUR CORPORATION LIMITED
Parnell House
25 Wilton Road
London SW1V 1NH
England

ISBN 0-902777-74-2

Introduction

The British Sulphur Corporation is very proud and privileged to have been given the opportunity by the Scientific and Technological Information Research Institute (STIRI) of the Ministry of Chemical Industry of the People's Republic of China to publish, in joint venture with the STIRI, this special Chinese Edition of the World Fertilizer Industry Review for circulation within the People's Republic of China.

The Directors and Staff of British Sulphur note with much pleasure the keen interest and the high professional esteem throughout the Fertilizer Industry in China for British Sulphur journals and publications on the World Fertilizer Industry.

This, the first Special Chinese Edition of the World Fertilizer Industry Review which is aimed at a broad readership of some 3000 executives in the Fertilizer Industry of China, contains a selection made by STIRI of the most important features and articles, published during the preceding year in 'Nitrogen', 'Sulphur' and 'Phosphorus and Potassium'. It is envisaged that a similar procedure will be followed in subsequent years thereby ensuring the continuity of provision of a compendium of accurate and comprehensive information on the developments in the World Fertilizer Industry outside China. The concept and implementation of this publication underlines the spirit of co-operation between British Sulphur and China's Fertilizer Industry and particularly STIRI. We wish to acknowledge the positive attitude and the great efforts of the staff of STIRI which have advanced this project to its successful realization and British Sulphur wishes to place on record its thanks and deep appreciation.

Good communications and better availability of information provide strong bridges across the globe causing distances to shrink and resulting in better understanding and closer co-operation.

Information on all aspects of the World Fertilizer Industry is of special importance because of its impact on food supply and thus on the well being and progress of mankind. In China, the World's most populous country, agriculture plays a key role in its fast expanding economy, and fertilizer know-how and

technology have been allotted pride of place in the continuing challenge of providing adequate supplies of food and natural fibres.

The articles, selected by STIRI for presentation to the executives in China's large Fertilizer Industry from the journals Sulphur, Nitrogen and Phosphorus and Potassium, deal with key issues in the World Fertilizer Industry. Against the background of the current status of supply and demand of fertilizer raw materials, intermediates and finished fertilizers, particular emphasis is being placed on identifying global, regional and country developments in the World Fertilizer Industry and even more importantly the impact of new process technology, new equipment and new developments in agronomy, soil and plant science.

Between now and the end of the millenium, in common with other economically dynamic developing and densely populated countries, China is expected to expand its supply capability of fertilizer raw materials, intermediates and finished fertilizer from indigenous resources as well as by imports of plant, equipment and know-how from abroad. Similarly, it can be expected that China will continue to play a major rôle on world fertilizer markets as a competitive large scale importer thereby exercising a strong influence on the pattern and level of world trade. Inevitably, these developments will be accompanied by major advances in technology of transport, handling, storage, environmental controls, data processing etc., which can be expected to enhance the infrastructure of China's fertilizer industry and agriculture. By the provision of the Chinese edition of the World Fertilizer Industry Review, British Sulphur is privileged to make a modest contribution to the wider dissemination of competent information and data on all aspects of fertilizers in accord with the objectives of Ministry of Chemical Industry and the Government of the People's Republic of China.

J.M. Lancaster
Chairman and Managing Director
The British Sulphur Corporation Ltd.

**Davy****Davy McKee**

巴西NPK成粒厂

下表面出的是戴维·麦基 (DAVY MCKEE) 公司
自 1960 年来承办过的大型合同：

加工厂种类	装置数目	加工法种类
硫酸	88	3
磷酸盐石精选	19	4
磷酸	64	5
氨	19	3
尿素	8	2
硝酸	35	7
碳酸钾精选	4	3
硫酸氨	14	4
单次/三次过磷酸钙	25	5
MAP/DAP/NPK	45	8
硝酸氨/CAN	10	3
NPK (硝基磷盐)	9	2
总计	340	49

这些项目是在 42 个不同国家执行的。

除了这些项目外，戴维·麦基公司还参与了许多咨
询、调研、整修及非工地合同。

最近的合同：

客户	生产能力
中国：中国化学品总公司/ 南京化肥厂	800 T/D DAP
中国：中国化学品总公司/ 大连化肥厂	800 T/D DAP
泰国：NFC 公司	(810 MTPD P_2O_5 磷酸 (2650 MTPD NPK
印度：HINDUSTAN LEVER	650 MTPD DAP
南斯拉夫：INA PETRO- KEMIJA	(500 MTPD P_2O_5 磷酸 (1500 MTPD NPK
美国加州：IMC 公司	2000 STPD P_2O_5 磷酸

如需进一步了解情况，请联系：

伦敦：250 EUSTON ROAD, LONDON NW1 2PG 电话：01-380 1000，电传：22527

中国：中国北京民族饭店 2251 号戴维公司 电话：658541 转 2251，电传：22424 DMPEKCN

美国：4715 SOUTH FLORIDA AVENUE, LAKELAND, FLORIDA, USA. 电话：813 646 7100，

电传：522412 / 522472

香港：DAVY CORP., SUITE 2108, 21ST FLOOR, GREAT EAGLE CENTRE, 23 HARBOUR ROAD,
WANCHAI, 电话：5-742246，电传：89421 DAVY HX

英国硫公司 (The British Sulphur Corporation)怀着十分骄傲和荣幸的心情能有机会与中华人民共和国化学工业部科学技术情报研究所合作,联合出版这本《世界化肥文献精选》专辑,并在中华人民共和国国内出版发行。

英国硫公司的董事和工作人员高兴地注意到:整个中国化肥界对英国硫公司出版的有关世界化肥工业的杂志和其它出版物很感兴趣并给予很高的评价。

这是第一个中文版专辑,由化工部科学技术情报所选择了前几年在“氮”(“Nitrogen”)“硫”(“Sulphur”)“磷和钾”(“Phosphorus & Potassium”)杂志中所发表的一些最重要的文章编辑而成,其目的是为中国化肥工业的领导和科技人员服务(共发行3000册)。设想今后相类似的合作还将继续进行下去,这样就可以保证提供正确和广泛的信息简编,以介绍世界化肥工业的发展动态。联合出版刊物的设想和付诸实施,体现了英国硫公司和中国化肥工业界,特别是化工部科学技术情报所的合作精神。我们衷心感谢化工部科学技术情报研究所工作人员的积极态度和所付出的巨大努力。在他们工作的推动下,使这一出版物得以成功地发行,对此英国硫公司表示衷心的感谢和高度的赞赏。

加强联系和沟通信息犹如在地球上建立起桥梁,从而缩短了国与国之间的距离,促进了相互间的了解和合作。

关于世界化肥工业各方面的情报信息都具有特殊的重要性,因为它影响着食品的供应,关系着人类的健康和进步。中国是世界人口最多的国家,在其迅速发展着的经济领域中农业占有重要的地位。在要求充分提供食品和天然纤维的不断挑战中,中国在化学肥料的技术诀窍和技术方面已取得了显著的成就。

当前呈现在中国读者面前的这些文章是由科学技术情报研究所从世界“硫”、“氮”及“磷和钾”杂志中精选出来的。文章涉及到世界化学肥料工业中的一些关键性问题,其中介绍了当前化肥原料、中间物料和最终产品的供需状况,特别是关于世界、地区或国家化肥工业的发展状况;对新工艺、新设备以及农艺、土壤和植物科学对化肥工业的影响也做了详细的报导。

从现在到本世纪末,象其它充满经济活力的发展中和人口众多的国家一样,预期中国将扩大其国产化肥原料、中间物料和最终化肥产品的供应能力,同时将从国外引进工厂、设备和专利;中国还将继续是化肥的进口大国并在世界化肥市场上占有举足轻重的地位,还会对世界的贸易形势发生深刻的影响。

这些发展不可避免地要采用先进的运输、装卸、贮存、环境保护、数据处理等技术。这些技术都将会增强中国化学肥料工业和农业的基础结构。英国硫公司愿意以这一出版物,按照中华人民共和国政府和化学工业部的远景规划,在广泛传播化肥信息和资料方面做出其应有的贡献。



中国： 伟大的农业上成就。

为世界人口最多的国家经济所需，中国进入一个历史时代。中国已明显地成为一个贸易出超的国家，有计划地经济成长。为了更加成功而着重农业现代化。中国理解到只有迅速改进农业技术，采用新的优良种子，增加施用化肥才能使农作物大量增产。上述措施使现有耕地在一年两造收成各增产3%。

由於农民生产积极性提高和有效地施肥，在1984年中国创记录增产4亿公吨谷物。在供养世界人口22%，而可耕地面积却只有7%的中国出现这样的增产成绩是惊人的。现代的施肥措施，加上引进先进的农业技术，使中国成为世界上生产稻米最多的国家，同时甘薯、玉米、小麦和甘蔗亦

我们使土壤
更有效地成长农作物

明显大量增产。

我公司乐于协助中国促进农业现代化。我公司是美加肥料出口协会的成员。这协会愿为中国农业现代化做出贡献。

我公司是世界上最大生产钾碱、磷酸岩、及各种磷酸盐化合物的独立公司，如磷酸二铵（DAP）、磷酸一铵（MAP）、三料过磷酸钙（GTSP）、磷酸和各种高浓度的复合肥（N-P-K）。从1965年到1985年，IMC公司在世界各地每年举办一次世界粮食生产会议，至今已有20年的业绩，为促进世界粮食增产而努力。1985年IMC世界粮食增产会议曾於9月在中国首都北京举行。



**International Minerals
& Chemical Corporation**

2315 Sanders Road, Northbrook, Illinois 60062, U.S.A.

Containerpak[®]



高速送达任何散装物资到任何地点

如果阁下希望减低散装货物的运送成本，同时希望减少付出中间存储费用，就应该选用“装箱毕”公司的二十四小时服务。

“装箱毕”是一种活动的入袋和重量系统，能适用于二个莱斯保险公司批准的标准型装运箱。这种装运箱可以送达世界各地，到达目的地后且容易装配。



Richard Simon & Sons

Park Lane, Basford,
Nottingham NG6 0DT,
England.

Telephone: (0602) 277721 · Telex: 37545

“装箱毕”的设计特别能抵抗极端的环境气候和物资。每天能够输送二千吨以内的散装货。而且整个运作过程是完全独立的。

我们相信全世界只有“装箱毕”公司能提供这种活动系统的服务。

我们也制造能够适用于任何重量的工业物资和包装需要的设备。

如果阁下希望把您的“困难”如此“装箱毕”起来，请您尽快和我们联络。

The Future of Fertilizers in the International Context

The supply, demand and trade prognosis for the major fertilizer nutrients (nitrogen, phosphates and potash) vary significantly. Short-term movements in supply/demand and pricing of fertilizer materials often follow a similar pattern. In times of general economic recession, for example, all fertilizer products will tend to suffer a decline in demand and price. This is amply demonstrated by the following historical data:

World Fertilizer Consumption
(million tonnes nutrient)

	1980/81	1981/82
Nitrogen	60.6	60.7
Phosphates	31.6	30.9
Potash	24.3	23.9

It should be noted that a failure to register growth is regarded as a set-back in the fertilizer industry. This is particularly valid for the nitrogen industry as this is a nutrient which is short-lived in the soil. Phosphate and potash applications on the other hand tend to form a labile pool of nutrient in soil which will eventually become available, thus allowing the farmer to risk reducing usage in periods of economic difficulty.

The movement of prices across the major nutrients also frequently demonstrates short-term unity:

Fertilizer Price Movements

	Peak Price 1980/81	Base Price 1982/83
Urea (bulk f.o.b. W. Europe)	US\$220	US\$115
DAP (bulk f.o.b. US Gulf)	US\$220 (higher in 1979/80 at \$250)	US\$160
Potassium Chloride (bulk f.o.b. Vancouver)	US\$112	US\$71

There is no reason to believe that such across-the-board responses to overall economic activity will cease to be a feature of the fertilizer market. What is, perhaps, more significant is the point from which such generalized fluctuations commence.

Nitrogen

After a long period of stability in the second half of the 1970s during which price levels made a steady recovery from the slump of 1975, the first half of the 1980s has seen some wild fluctuations. The mini-boom of 1980/81 witnessed peak urea prices of US\$235 f.o.b. bulk West Europe. Since then prices have sunk as

low as US\$135, recovered to US\$170-175 and are currently slipping back below US\$140.

The degree of instability demonstrated by urea over the last year exceeds that displayed by other nitrogen products such as ammonium nitrate or merchant ammonia and also has been more marked than movements by potash and phosphate products. It would appear that two main factors, significant for the future, underline this recent price instability:

- the nitrogen industry, and the urea sector in particular, is moving towards supply/demand equilibrium with no long-term advantage for supplier or consumer.
- the traded volume of urea is more significant in relation to production than for products such as merchant ammonia. In 1983/84 urea exports at 6.3 million tonnes N represented 27% of fertilizer urea produced. The impact of traded tonnage is increased by the uneven balance of movements. East European producers accounted for 47% of world exports in 1983/84. The two major Asian import markets, India and China, accounted for 39% of world urea imports.


It is clear that the continuing strength of such major exporters/importers will add to the volatility of the urea market. A concerted or coincidental reduction in purchases by China and India or unanticipated non-availability from East Europe will continue to cause sudden price movements.

More generally, the long period of over-supply which has characterized the nitrogen sector is moving towards its end. The low levels of price in relationship to the high cost of investment in nitrogen capacity has inhibited new investment over the past few years. The vulnerability of exporters dependent on the export market has concentrated what investment has occurred in countries with captive demand. Overall debt problems exacerbated by a strong dollar have greatly reduced the number of developing countries where major investment is remotely possible.

The nitrogen market is, in short, moving towards supply/demand equilibrium in the short-term and a gradual tightening in supply in the medium-term. Demand growth of even half the rate achieved during the 1970s will be untenable by the end of the 1980s.

Phosphates

The world phosphate industry is in an unenviable situation currently. It is squeezed between static or very slow demand growth on the one side and a continuing build-up of phosphate fertilizer capacity on the other side. This situation has been reflected in the poor price levels which have obtained in the phosphate sector since the 1980/81 mini-boom. This year even the seasonal upturn in demand and prices normally



我们十分重视客户对本厂的信心

本厂所生产的磷酸盐畅销中国多年，各地农业人士都乐于采用，原因是品质高，收效大。这事足令到我们引以为荣。

为了报答中国国内老顾客对我们产品有极大信心，本厂的全体工作人员将会继续为各位不断努力来提供更佳产品和服务，以表一点心意。

Mobil Mining & Minerals Company • P.O. Box 26683 • Richmond, VA 23261 USA
TWX 710-958-4408 • TEL 804-798-2224

expected in Spring has not come to pass and today prices of US\$165-170 f.o.b. bulk US Gulf for DAP do not even cover the cash costs of production for a number of companies.

The problem of the phosphate industry is most critically apparent in the export sector and export products, notably DAP, TSP and merchant phosphoric acid. Traditionally the major exporter of processed P_2O_5 products has been the US industry. The emergence of a powerful North African and Middle Eastern export industry coincided with an expansion in US export capacity and the stagnation of the market in the late 1970s. The upshot of these parallel developments is that world phosphoric acid capacity of 34.5 million t/a P_2O_5 is running at only 69% of nameplate capacity and if the present slow demand growth trend is maintained, existing capacity will suffice to meet consumption for the remainder of the decade.

As existing phosphoric acid capacity is about to be supplemented by a major new Moroccan complex (4,000 t/d P_2O_5) and a number of other units, there is little likelihood of the pressure on producers and export prices diminishing in the medium term. Indeed, the economic position of phosphoric acid manufacturers is being further undermined by the rising cost of sulphur, a major input in phosphoric acid manufacture.

The future then sees a continuing over-supply of phosphates and particularly of export products. The US industry, functioning in a free market economy, seems likely to lose a part of its export market share to the new industries of North Africa. Indeed, the US industry may well become the world's swing producer of export phosphate fertilizers.

Potash

The potash industry is without doubt the most stable sector of the world fertilizer industry. As with the phosphate sector, the downturn in fertilizer demand after 1980 caused by world economic recession created an excess of supply capacity over demand. However, given the limited number of suppliers, such demand fluctuations are not generally accompanied by dramatic price fluctuations. From Vancouver, f.o.b. potassium chloride prices have moved as follows in recent years:

1982	US\$93-100, falling to	US\$72-78
1983	US\$71-73	
1984	US\$77-80 rising to	US\$82-85

Several projects initiated during the second half of the 1970s have come on-stream recently or will do so in the near future and these facilities should guarantee an adequacy of supply into the long-term. Canada remains the world's largest exporter of potash but in the medium term the Saskatchewan producers in particular will come under pressure from new producers in New Brunswick and possibly Manitoba and Michigan as well as existing producers in the GDR, USSR, Jordan and Israel.

In short, even if world potash demand recovers to the 34 million t/a K_2O mark by 1990, sufficient supply will be available to accommodate it.



Ferguson Industries

弗格森 因德斯

向您提供
整套设备和生产技术
并推销农业化肥
欢迎咨询

萨姆·H·弗格森
总经理

1900 W. Northwest Highway
P.O. Box 20519
Dallas, Texas 75220 U.S.A.
Telephone: 214/556-0010
Telex 73-0915

国际产品出口公司
(ICEC), 把肥料从可获
得的地方, 运送到需要
的地方; 并承担一切风
险, 和提供运送到目的
地的全部服务。



国际产品出口公司 (ICEC)

地址: 707, Westchester Avenue, White Plains, New York 10604 (纽约)
电话: (914) 683-8300

国际电挂: ITT420258与424147
RCA232261与232316

国内电挂: WU64-6655
电传: 710-568-0315
电报: COMODINTER

国际化肥市场展望

对主要化肥养份（氮、磷和钾）的供应、需求和贸易预测的变化极大。化肥供应、需求、价格的短期动向遵循着相似的模式。例如：在一般的经济衰退时期，所有的化肥产品将都面临着需求和价格的下跌。下列历史数据可充分地说明这一问题。

世界化肥的消费

（百万吨养份）

	1980/81	1981/82
氮	60.6	60.7
磷	31.6	30.9
钾	24.3	23.9

应当指出不增长就意味着化肥工业遭受了挫折。这点对氮肥工业来说特别有效，因为氮肥在土壤中只能短期内发生作用。磷肥和钾肥可贮存于土壤中供长期使用，因此在经济困难时期，农民可以冒着风险减少其施用量。

主要营养物价格的变化也经常表现了短期的一致性：

化肥价格的变化

	高峰价格 吨	基 价 吨
	1980/81	1982/83
尿素 （散装，离岸价格，西欧）	220美元	115美元
DAP （散装，离岸价格，美国海湾）	220美元 （1979/80年为250美元）	160美元
氯化钾 （散装，离岸价格，温哥华）	112美元	71美元

没有理由相信，这种对整个经济活动的全面反映将不再是化肥市场的一个特点。或许，更重要的事是这样的波动是从哪一点开始的。

氮 肥

七十年代后五年价格长期处于稳定状态，在此期间，价格从1975年的萧条期中恢复过来。八十年代前五年价格开始猛烈波动。1980/81年略有繁荣，在西欧尿素的高峰价格袋装每吨为235美元（离岸价格），散装为220美元。此后，袋装价格曾低落至130美元，散装115美元，然后袋装回升至180—185美元，散装165—170美元。目前价格又跌至袋装165—170美元，散装130美元。

去年尿素表现出的不稳定程度比其它氮肥（如硝酸铵或商品氨）更显著。同时也比钾肥和磷肥为高。看来影响近期价格不稳定的主要因素有二（对将来也发生重要作用）：

——氮肥工业，特别是尿素工业，趋向于供需平衡。对供应者或消费者来说都没有长远利益可图。

——尿素的贸易量占生产的比重比商品氨为大。1983/84年尿素出口量为630万吨（以

N计), 占尿素生产量的27%。贸易吨位的增加是由于各种发展不平衡的因素所致。1983/84年东欧生产者的出口量占世界的47%。印度和中国是两个主要的亚洲进口市场, 占世界进口量的39%。

很明显如此大量的出口国家和进口量的不断增强将会使尿素市场变得反复无常。中国和印度同时缩减其购买量或东欧中断其化肥出口的不可预测性, 这些将继续是价格骤然浮动的原因。

总之, 氮肥长期供应过剩的局面将结束。在过去几年中, 建氮肥厂的高投资和产品的低价格影响了新厂的建设。依赖于出口市场的出口商的脆弱性集中表现在那些已建厂国家的需求自给上。由于美元坚挺而加剧的全部债务问题, 使进行大量投资可能性很小的发展中国家现在也不考虑建厂问题。

简言之, 在短期内氮肥市场趋向于供需平衡, 在中期将逐渐出现供应紧张。需求的增长只为七十年代一半的说法至八十年代末期将是站不住脚的。

磷 肥

目前世界磷肥工业的形势也不很好。一方面磷肥处于需求几乎停顿或缓慢增长状态, 另方面还继续扩展其生产能力。这一情况已反映在1980—1981年以来市场略转繁荣时的价格疲软上。

今年, 甚至在春季, 需求和价格均未能好转, 目前散装DAP的离岸价格为165—170美元(美国海湾), 这意味着很多工厂甚至不能将其生产成本回收。

磷肥工业的问题可从出口部门和出口产品中最尖锐地表现出来, 特别表现在DAP、TSP和商品磷酸上。美国是加工 P_2O_5 产品的传统出口者。强大的北非和中东出口工业的出现与美国出口能力的扩展以及七十年代末期市场的停滞同时发生。这种平行式发展的结果, 使世界3450万吨/年 P_2O_5 的能力仅有69%的设计能力在开车。如果仍继续维持目前的低需求增长率, 现有生产能力将可充分满足本世纪末的消耗需求。

虽然现有磷酸能力即将被一个大型摩洛哥联合企业(4000吨/日 P_2O_5)和其它装置所补充。但在中期对生产者和出口价格降低的压力几乎不会发生。的确, 磷酸加工者的经济地位正在进一步受到硫成本上升的严重影响(硫是磷酸加工中使用的主要原料)。

看来今后磷肥将继续过剩, 特别对出口产品更是如此。美国工业——一种自由竞争经济, 似乎要让出一部分出口市场给北非的新兴工业。的确, 美国工业或许会成为世界磷肥出口的波动生产者。

钾 肥

毋庸置疑, 在世界肥料工业中钾肥是最稳定的。正像磷肥那样, 由于世界性的经济衰退, 1980年以后化肥需求量下降, 使其供应能力高于需求。但钾肥供应商有限, 这种需求的波动一般并不能强烈地影响价格的波动。温哥华氯化钾的离岸价格近年来的变化情况如下:

1982	93-100美元降至72-78美元
1983	71-73美元
1984	77-80美元升至82-83美元

七十年代后五年建设的几个工程项目最近已经开车或近期内即将开车, 这些设备的投产应能保证今后的长期供应。加拿大仍然是世界上最大的钾肥出口国, 但在中期, 特别是

萨斯喀彻温生产厂将受到来自新不伦瑞克和可能的马尼托巴、密歇根等新生产商的压力以及德意志民主共和国、苏联、约旦和以色列等国现有生产商的影响。

总之，如果于1990年前，世界钾肥需要量恢复至 3400 万吨/年 K_2O 的水平，那时对这一需求仍能充分保证供应。

杰科布工程集团公司

世界磷酸盐及钾碱生产技术的领导者



杰科布工程集团公司及其矿物专业顾问公司，齐拉斯—威廉姆斯公司，为全世界的磷酸盐，钾碱及化肥工业提供全套的工程建设服务。服务项目有：

- 实验室及试验工厂的测试
- 可行性研究
- 工艺开发
- 工程设计
- 国际采办
- 工程管理
- 施工管理
- 操作和维修

我们颁发杰科布—多尔科Ⅱ磷酸盐工艺及多尔科颗粒形成工艺的使用许可证。

向您提供自1930年代首次发明和应用并且不断地得到发展和改进的二水磷酸和颗粒化肥的最新生产技术。

我们持有诺斯科海卓化肥有限公司对磷酸及颗粒化肥工艺的使用许可证。

可用其Oxy Hemihydrate Process^{T.M.}工艺生产磷酸。

PHOSPHATE INQUIRIES

Jacobs Engineering Group Inc.
P.O. Box 2008
Lakeland, Florida 33806 U.S.A.
Telephone: (813) 665-1511
Telex: 52-2466



POTASH INQUIRIES

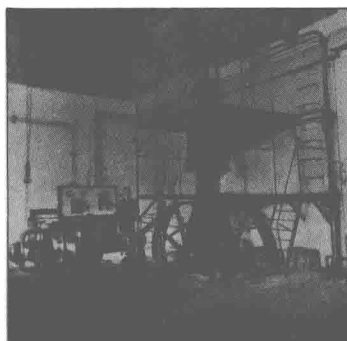
Jacobs Engineering Group Inc.
251 South Lake Avenue
Pasadena, California 91101 U.S.A.
Telephone: (818) 449-2171
Telex: 67-5435

我们知道怎样

本公司对肥料厂
工业的贡献可追
溯到二十年代



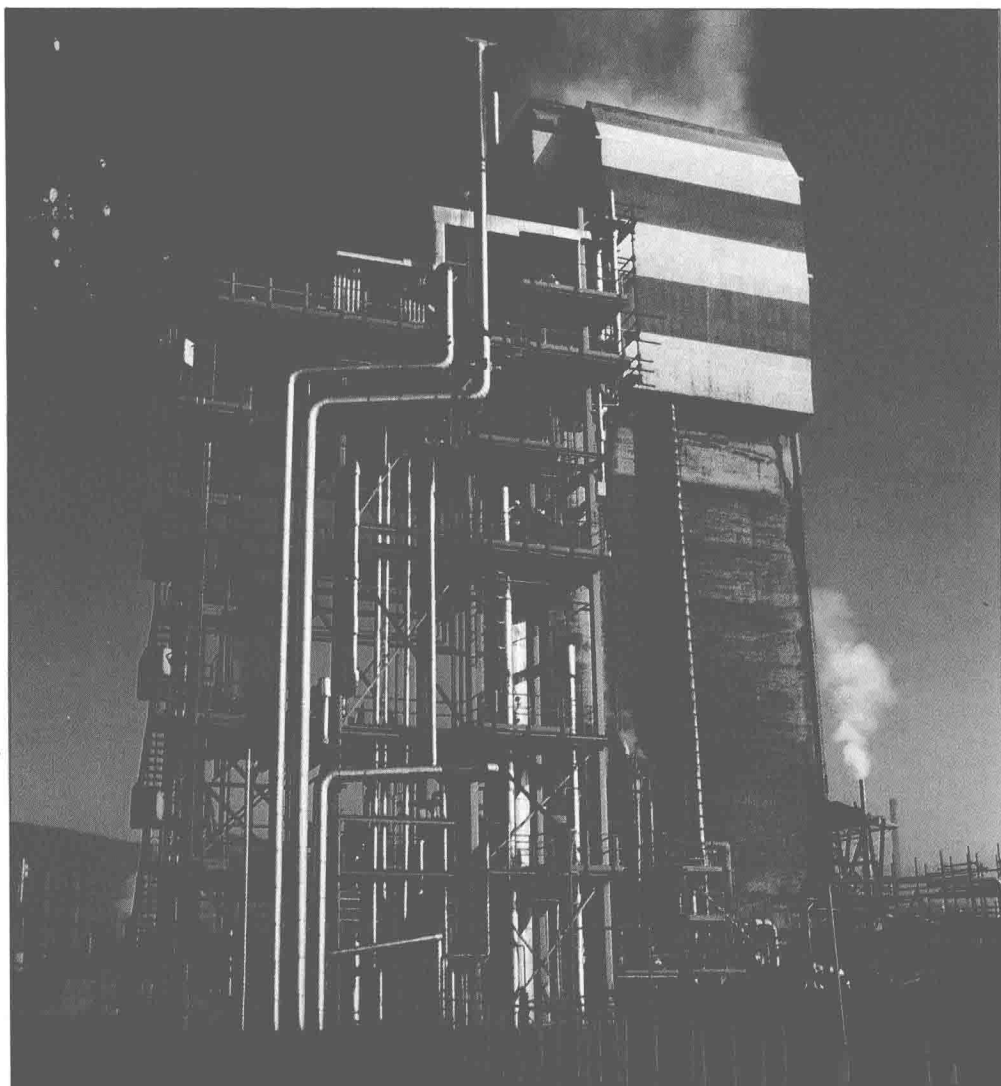
今日业务遍及世界各地



本公司的等压双循环过程(IDR)，能对传统的尿素加工法，提供相当可观的能源节省（多达40%）。

此加工过程不仅适用于新厂，而且也适用于将再翻新改进的现有工厂。等压双循环过程合成线装置容易安装，并且证明特别有效率。

本公司的加工法还有另一项优点：经过多年工业操作证明，毫无腐蚀现象。



MONTEDISON GROUP

TECNIMONT

Headquarters address:

Yiale Monte Grappa 3, 20124 Milano, Italy.
Telephone: (02) 63331
Telex: 310679 MONTED I TECNIMONT/3

Representative office in P.R. China:

MONTEDISON S.p.A. Representative office
BEIJING Hotel 7005 - BEIJING
Telephone: 558331
Cable: MONTEDISON BEIJING
Telex: 22588 MONTE CN BEIJING

总公司地址

意大利，米兰市 20124 Yiale Monte Grappa 3.
电话：(02) 63331
电讯：310679 MONTED I TECNIMONT/3

中国代办处

蒙特爱迪生 S.p.A. 代理事务所
北京，北京酒店 7005 室
电话：558331
电报：北京 MONTEDISON
电讯：北京 22588 MONTE CN

Published by:

The British Sulphur Corp. Ltd.
Parnell House · 25 Wilton Road
London SW1V 1NH · England.

Telephone:

(01) 828 5571

Telex:

918918 sulfex g

Telegrams & Cables:

SULFEX LONDON SW1

Chairman & Managing Director:

J. M. LANCASTER

General Manager:

W. LAVERS

Publisher:

JOHN FRENCH

Editor (England):

JIM POTTER

Editor (China):

SUN HUI QUN

Production:

ROBIN DAVIES

Editorial Secretary:

JANET GREEN

Advertisement Sales Executive:

TINA FIRMAN

British Sulphur North American Representative:

PAUL RITTENHOUSE

Telephone: 912-598-1993

Single Copies:

United Kingdom & Eire £50

Rest of World - Airmail \$85

Advertisement Representatives:

France: Agence Gustav Elm · Edouard Costemend

41 Avenue Montaigne · Paris 75008

Tel: Paris 723.32.67/96.85 728.25.30

Italy: Publicitas · Loredana Marchetti

20149 Milano · Via. E. Filiberto 4

Tel: Milan 3458541 (9 lines)

Japan: O.T.O. Research Corp. · Koichi Ogawa

Takeuchi Building · 1-34-12 Takatanobaba

Shinjuku-Ku · Tokyo 160 · Japan

Tel: Tokyo (03) 208-7821.

Typesetting and Design:

PP Graphics · 25 Wilton Road · London SW1

STIRI · Beijing · PR China

Printed in Hong Kong by:

Great Wall Printing & Graphics · Hong Kong

Cover photographs:

Top left: Isothermal phosphoric acid plant, engineered, design and constructed by Badger Engineers Inc., at a Florida location.

Top right: Bulk blend product from the Rainbow operations near Mulberry, Florida, International Minerals & Chemical Corporation.

Bottom left: Fertilizer application to flooded padi rice in Southeast Asia.

Bottom right: Jacobs Engineering Group Inc.

上左:

在美国佛罗里达州, 由巴杰尔工程公司策划、设计与承建的等温磷酸厂。

上右:

国际矿物与化学品公司, 在美国佛罗里达州, 马尔伯里附近, “彩虹”厂的大批混合产

下左:

在东南亚水稻田施肥情况。

下右:

设计制造者: 杰科布工程集团公司

工厂拥有者: 美国, 佛罗里达州坦坡市嘉迪尼公司

工厂类型: 1300TPD杰科布-多尔科II磷酸厂

WORLD FERTILIZER INDUSTRY REVIEW— CHINESE EDITION

A Compendium of Articles From *Nitrogen, Sulphur and Phosphorus & Potassium*

Introduction

The Future of Fertilizers in the International Context

The Urea Market in Southeast Asia - Developments up to 1989/90

Karatau - the USSR's Phosphate Future

Pyrites - Outlook for the Industry

Phosphate Rock Beneficiation with the Polcal Process

Outlook for Alberta's Sulphur Production

Mining and Beneficiating Potash - Recent Trends and

Developments Outside North America

Revamping Ammonia Plants - (Reforming and Shift Conversion)

Comparison of the Energy Consumptions of Low-Energy

Urea Technologies

A Low-Energy Process for Ammonium Nitrate Manufacture

Monitoring the Efficiency of Plant Operation

Taiwan: The Origins and Development of Nitrogen Fertilizer Industry

Energy Recovery and Utilization in Phosphate Fertilizer Complexes

Phosphoric Acid Manufacture Using Hydrochloric Acid -

An Examination of the IMI Process

ERT/ESPINDESA Low-Recycle DAP Process

Producing Nitrophosphate-Based Fertilizers Using a Pipe Reactor

Compaction of Fertilizers and Fertilizer Raw Materials

Sulphuric Acid Technology is Ready for High-Concentration

Smelter Off-Gases

The Measurement of Acid Dewpoint Temperature in a Sulphuric Acid Plant

Shape Selection in Sulphuric Acid Catalysts for Improved Activity and Lower Pressure Drop

The DAISY-Shaped Sulphuric Acid Catalyst

Elemental Sulphur Production/Recovering the Sulphur Values from Gypsum

Acid Rain: Its Causes, Effects and Abatement

Statistics -

- World Nitrogen Fertilizer Production
1981/82 - 1983/84

- World Phosphate Rock Production
1981/82 - 1983/84

- World Phosphate Fertilizer Production and Consumption
1981/82 - 1983/84

- World Potash Fertilizer Production and Consumption
1981/82 - 1983/84

- World Production of Sulphur-in-all-forms 1982-84

- World Sulphuric Acid Production 1982-84

A joint publication between The British Sulphur Corporation Ltd. and the Scientific and Technological Information Research Institute (STIRI)

目 录

市场动向

八十年代东南亚尿素市场的发展	(1)
----------------	-------

矿 山

卡拉套——苏联磷酸盐的未来	(5)
世界硫铁矿工业的现状和前景	(10)
用波尔卡尔焙烧法选磷矿	(17)
展望阿尔伯塔的硫磺生产	(18)
北美以外地区钾碱开采和选别的最新发展和趋势	(23)

氮 肥

氨厂改造

转化与变换部分	(30)
低能耗尿素生产方法的能耗比较	(37)
制取硝酸铵的低能耗工艺	
AN—DE 法减少投资降低操作费用	(46)
工厂生产效率监督	
ICI利用综合监测法获得实时 信息	(51)
台湾氮肥工业的发展	(56)

磷 肥

磷肥联合企业的能量回收和利用	(59)
用盐酸生产磷酸	
对IMI工艺的调查	(68)
ERT/ESPINDESA低返料磷酸二铵工艺	(73)
用管式反应器生产以硝酸磷肥为基础的肥料	(76)
肥料和肥料原料的挤压造粒	(80)

硫酸和硫磺

高浓度SO ₂ 烟气制酸技术	(88)
硫酸厂硫酸露点的测定	
帮助保护主要设备和避免停车	(95)
选择不同形状的硫酸催化剂以改善活性和降低压力降	(99)
菊形硫酸催化剂	
哈尔杜·托普索公司对环形催化剂的改进	(101)
从低品位硫铁矿和磷石膏中回收硫磺	(102)

环 境 保 护

酸雨形成的原因、影响及其防治	(107)
----------------	-------

统 计 资 料

世界氮肥产量和消费量 (113) 世界磷矿产量和消费量 (114) 世界磷肥产量和消费量 (115)	
世界钾肥产量和消费量 (116) 世界各种硫的产量 (117) 世界硫酸产量 (117)	