



AMERICAN SOCIETY OF SUGAR BEET TECHNOLOGISTS
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CHINA – OPPORTUNITIES FOR BEET SUGAR PRODUCTION

GENERAL SESSION

John Prince, Agricultural Development Director

Botian Sugar Industry Co.,Ltd

B – 12/F China International Science and Technology Convention Centre

No 12 Yumin Road

Chaoyang District

Beijing 100029

China



Who are Botian Sugar?

- We are an ABF company.
- Associated British Foods is a diversified international food, ingredients and retail group with global sales of £8.2bn
- Generating £664m operating profit
- We have 96,000 employees in 44 countries
- In USA
 - Vegetable oils – Mazola
 - Herbs and spices – Tone's, Spice Islands and Durkee brands
 - Seed coating – Germain's



Sugar Business

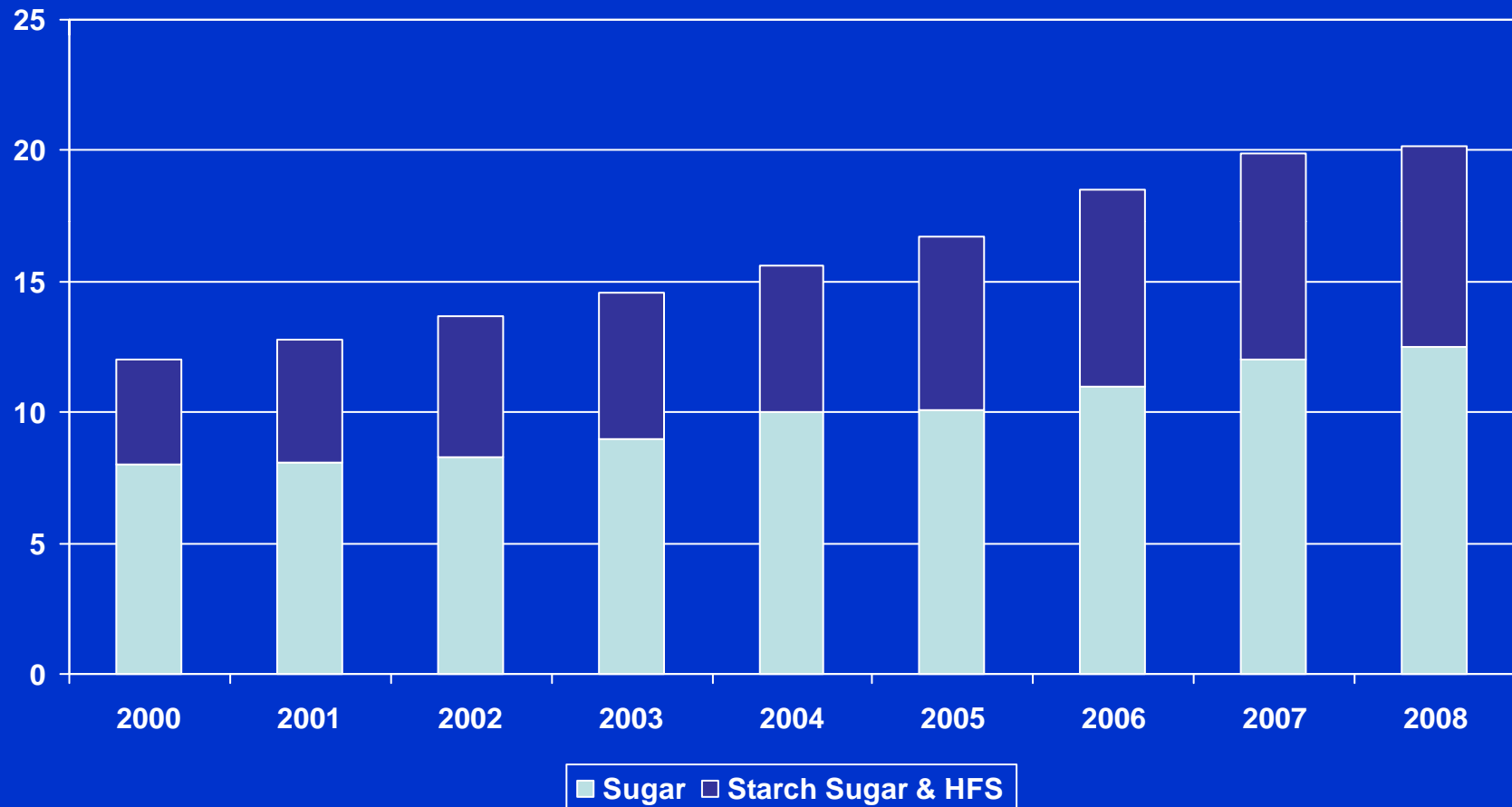
- British Sugar Group is the second largest sugar producer in the world
 - Having sugar interests in Europe, Southern Africa and China
 - British Sugar in the UK and Poland produce over 1.2 m tonnes sugar annually.
 - Azucarera Ebro in Spain produces 0.4 m tonnes following EU restructuring
 - Illovo is Africa largest sugar producer in six countries producing 1.8 m tonnes
 - BSO has 5 cane factories Guangxi Province in Southern China and together with 12 beet sugar factories in North East China total production 0.75 m tonnes
 - Botian Sugar has 11 factories producing 250,000 tonnes sugar



China Sugar Market

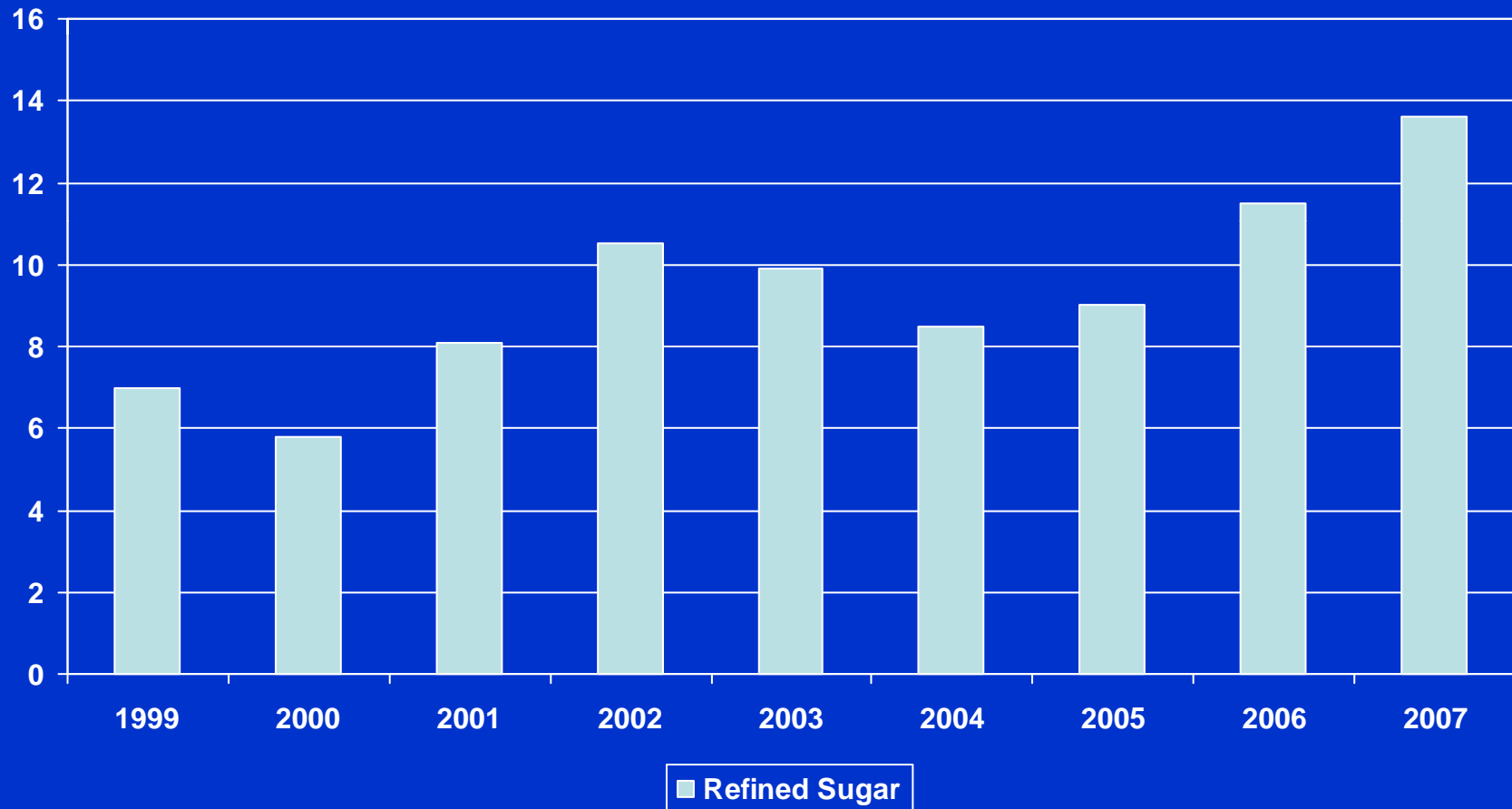


Chinese historical consumption of sweeteners (mt)



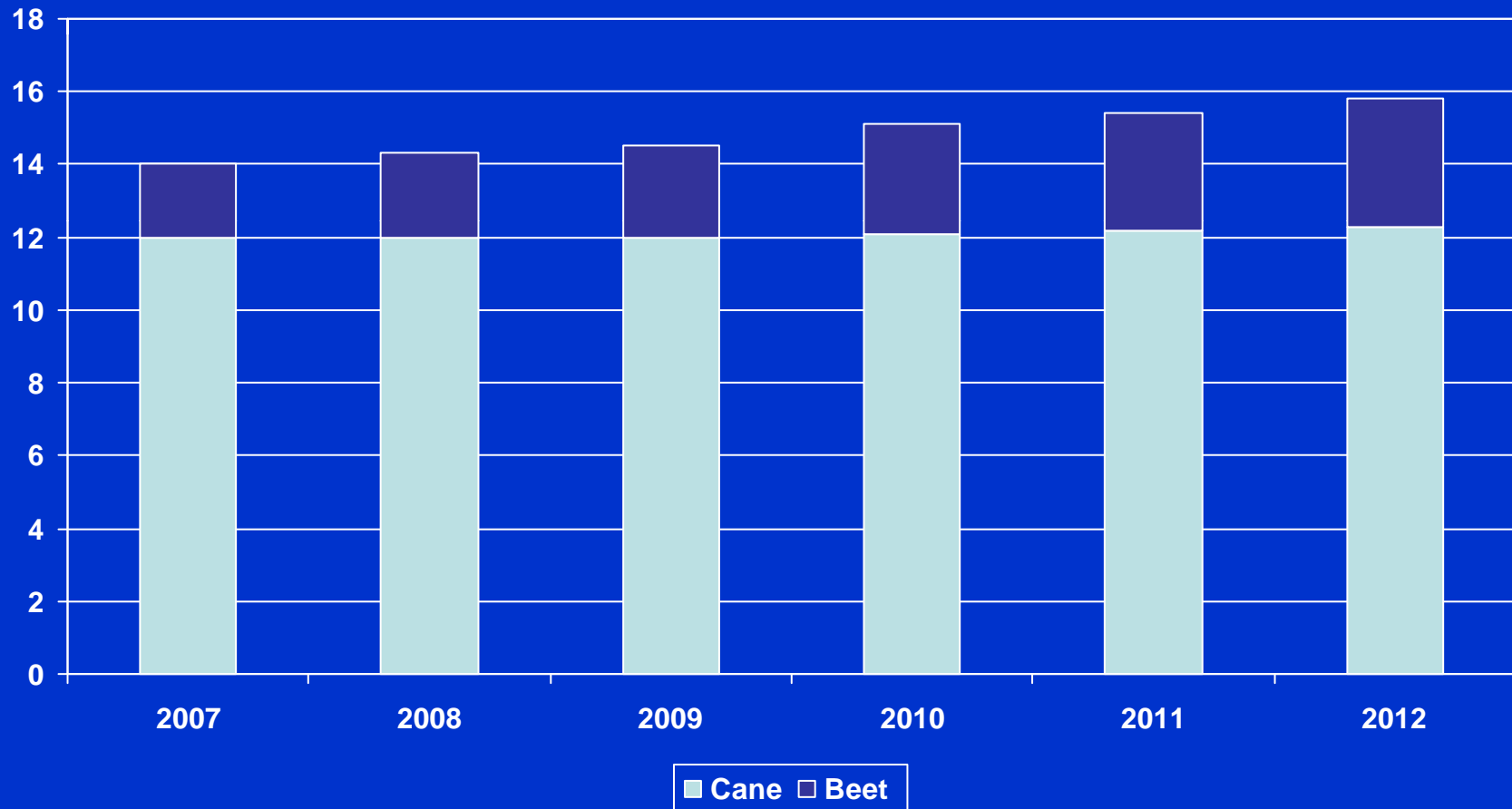


Production of refined sugar in China (mt)





Production forecast by sector China (m t)





History of Botian



BOTIAN
AN ABF COMPANY





History of Botian

- 2001 Formation of Hebei Tian Lu following acquisition of Zhangbei factory in Hebei
- 2004 Tian Lu acquires Qianqi factory in Inner Mongolia
- 2006 Tian Lu acquires and reopens Wangkai factory in Heilongjiang
- 2006 Tian Lu take a majority stake in Yian factory in Heilongjiang
- 2007 BSO forms a joint venture with Hebei Tian Lu and forms Botian Sugar
- 2007 Botian Sugar acquires a further 7 factories
 - Chifeng, Bolanshan, Wulanhote, Zalantun Inner Mongolia
 - Zhaozhou, Zhaoyuan, Chahayang Heilongjiang



Yield comparison

- Clean weight yields
 - EU 60 - 70 t/ha with high sugar %
 - France 80 – 100
 - UK 75 – 90
 - USA 65 – 75 t/ha with very high sugar %
 - China 25 – 35 t/ha with low sugar % (14 -15% on cossette belt)
 - Botian 30 t/ha as a 5 year average
- How do we bridge the gap?



Current situation and challenges

- Two farming models
 - State farms which are large units producing much of the countries food needs. Mechanised with high technical ability
 - Small farming units mostly family run. Subsistence farming with some cash crops
 - Over reliance on hand labour
 - Movement of labour to the city
- Most of Botian's grower base are small farmers
 - > 450,000 contracts producing 1.8m tonnes of beet
 - Average delivery 4 tons
- In North China most of the beet crops are grown in paper pots
- Very little or incorrect use of ag inputs
- Limited supply of ai's for pest and disease control
- Relatively short growing season



Current crop production is mostly by hand





















2008/07/22 17:03












2008/12/08 12:02



明年该不该种
？

Shall we grow
or not next year
？



How can we change this?



Challenges for Botian

- Growers
 - Increase yield and profitability
 - Reduced reliance on hand work
 - Allow growers to become larger
 - Restructure farm land to allow amalgamation of strips, government is proposing land reform to aid this.
 - Introduction of mechanisation, government incentives to form machinery co-operatives
- Botian
 - Increased yield and profitability for growers
 - Beet needs to be competitive
 - Increase quality
 - Sugar content
 - Non Sugars
 - Storage and handling













Models for change

- Self Grow Model
 - Botian lead
 - Autumn cultivations to 35 – 40 cm deep
 - Direct drilling with high quality seed and treatments on 50cm rows
 - Increased plant populations 80,000 – 100,000 k/ha
 - Good pest and disease control
 - Good weed control
 - Correct fertilizer use
 - Machine harvesting
- Mechanised Small Area
 - Grower lead
 - Following self grow lessons
- Traditional Growing
 - Small Growers
 - Work to increase yield and quality



Cultivation



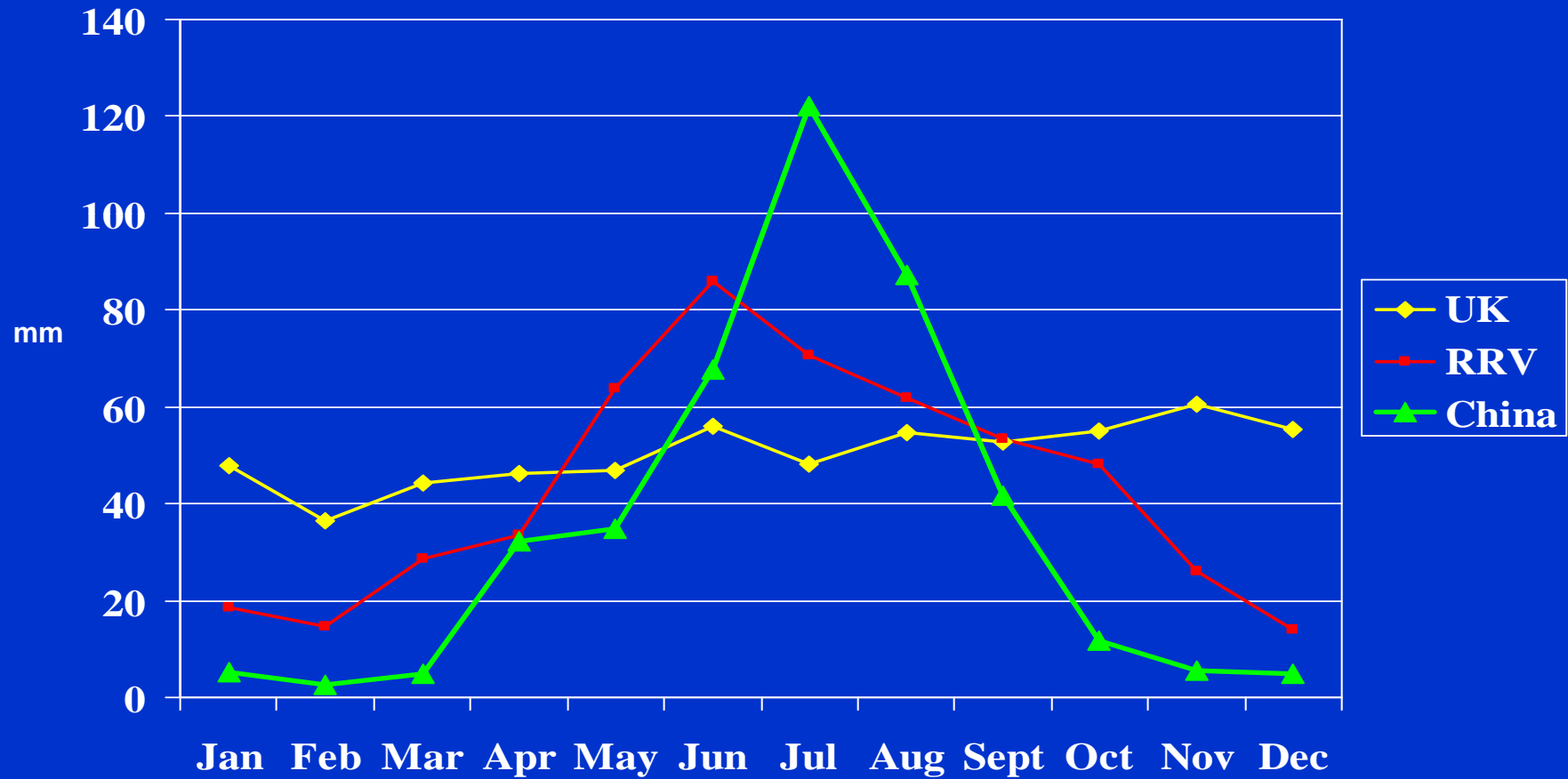








Average Monthly Rainfall UK, USA and China







Fertilizer Application









Plant population and root shape

































重量(千克)
0.595

去皮 置零

单价(元/千克)
0.00

欠压 累计

金额(元)
0.00

浙制00000558号 太阳衡器有限公司



Plant Populations

- 40,000 plants per ha each weighing 600g equals **24** tonnes per ha
 - This is where most paper pots are
- 60,000 plants per ha each weighing 600g equals 36 tonnes per ha
 - Aim to increase to this level
- 90,000 plants per ha each weighing 600g equals 54 tonnes per ha
 - Direct drilled crops should achieve this
- 100,000 plants per ha each weighing 1000g equals **100 tonnes** per ha
 - Target for the future



Weed Control



Strategy

- Limited number of ai's to control weeds
 - Phenmedipham/desmedipham
 - Quizalopfop-P-ethyl
 - Use in a low dose repeat application
- Inter row hoe
- May need hand work















Pest and Diseases









Harvesting











Delivery and Storage

















Summary

- Tremendous Opportunity
 - Sufficient land if it can be amalgamated
 - However Soya residues still need to be solved
 - Structural changes to land use
 - Reduce the reliance on hand labour
 - Introduce cost effective mechanisation
 - Prove that direct drilling is viable in the dry Chinese springs
 - Introduction of sufficient Ag inputs
 - Correct herbicides and fungicides
 - Introduction of GM technology
 - Expansion of factory capacity in line with Ag development
 - High yields
 - High quality
 - Lowest cost producer



Acknowledgements

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