2024 優質美國黃豆及黃豆粉研討會

日　　期： 2024 年 12 月 10-11 日 (二~三)

地　　點：台南遠東香格里拉酒店 B1F 赤崁廳

主辦單位：美國黃豆出口協會/ 臺灣飼料工業同業公會/台灣植物油製煉工業同業公會

指導單位：美國在台協會農業組

參加對象：飼料廠管理階層、配方設計及黃豆粉採購人員、油廠採購及豆粉業務人員及養殖戶等。

議　程

時　間	課　程	演 講 人
09:00～09:30	報　到	工作人員
09:30～09:40	致歡迎詞	張信政 理事/臺灣飼料工業同業公會 **張曉平** 大中華區首席代表/美國黃豆出口協會 (Video)
09:40～09:45	團體合照	全體人員
09:45～10:45	優質美國黃豆粉的價值遠比你知道得更多(Q&A)	**韓彥明** 博士 畜禽及飼料技術顧問 / 美國黃豆出口協會
10:45～11:00	咖啡時間	
11:00～12:00	新穀黃豆與玉米進口價格風險之探討 - Q&A	**陳貝爾** 市場部資深副總裁/ 美國羅傑歐期貨公司 (Zoom)
12:00～13:30	午餐	
13:30～14:00	美國黃豆農民與台灣禽畜業者共同努力達成低碳目標	林裕祥 駐台代表/美國黃豆出口協會
14:00～14:50	美國優質黃豆蛋白:從高營養利用到高生產價值 (Q&A)	**劉昌宇** 博士 技術總監/ 菁宇國際有限公司
14:50～15:30	醱酵黃豆蛋白的低碳關鍵指標與永續應用實例	**黃煒智** 博士 技術長/ 達邦蛋白生技股份有限公司
15:30	賦歸	

2024 優質美國黃豆及黃豆粉研討會

目　錄

Capture the Value of U.S. Soy
捕獲美國黃豆的價值

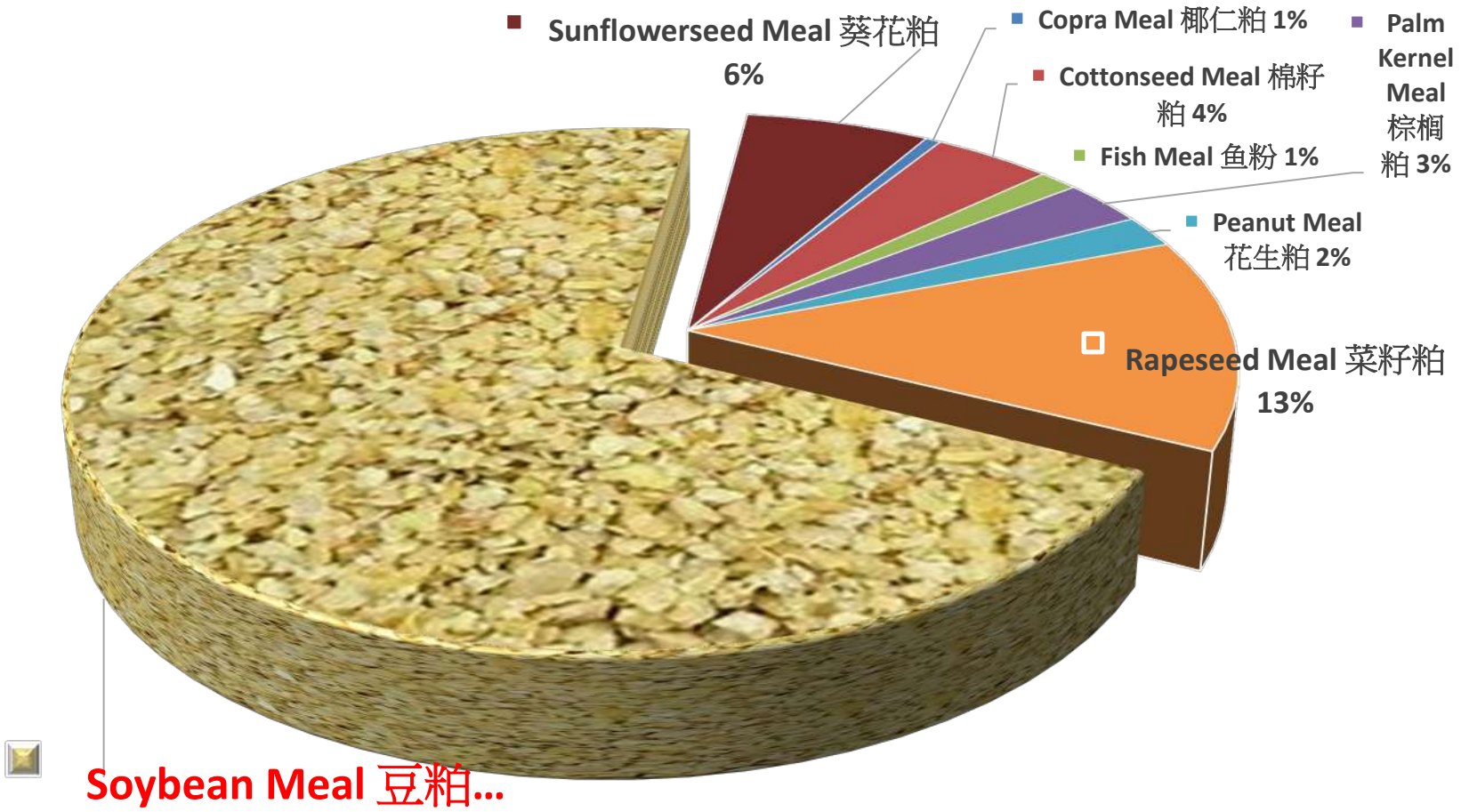
Richard Han, Ph.D.
USSEC Consultant

韓彥明 博士
美國黃豆出口協會 顧問

2024-12-10 • Taiwan 台灣

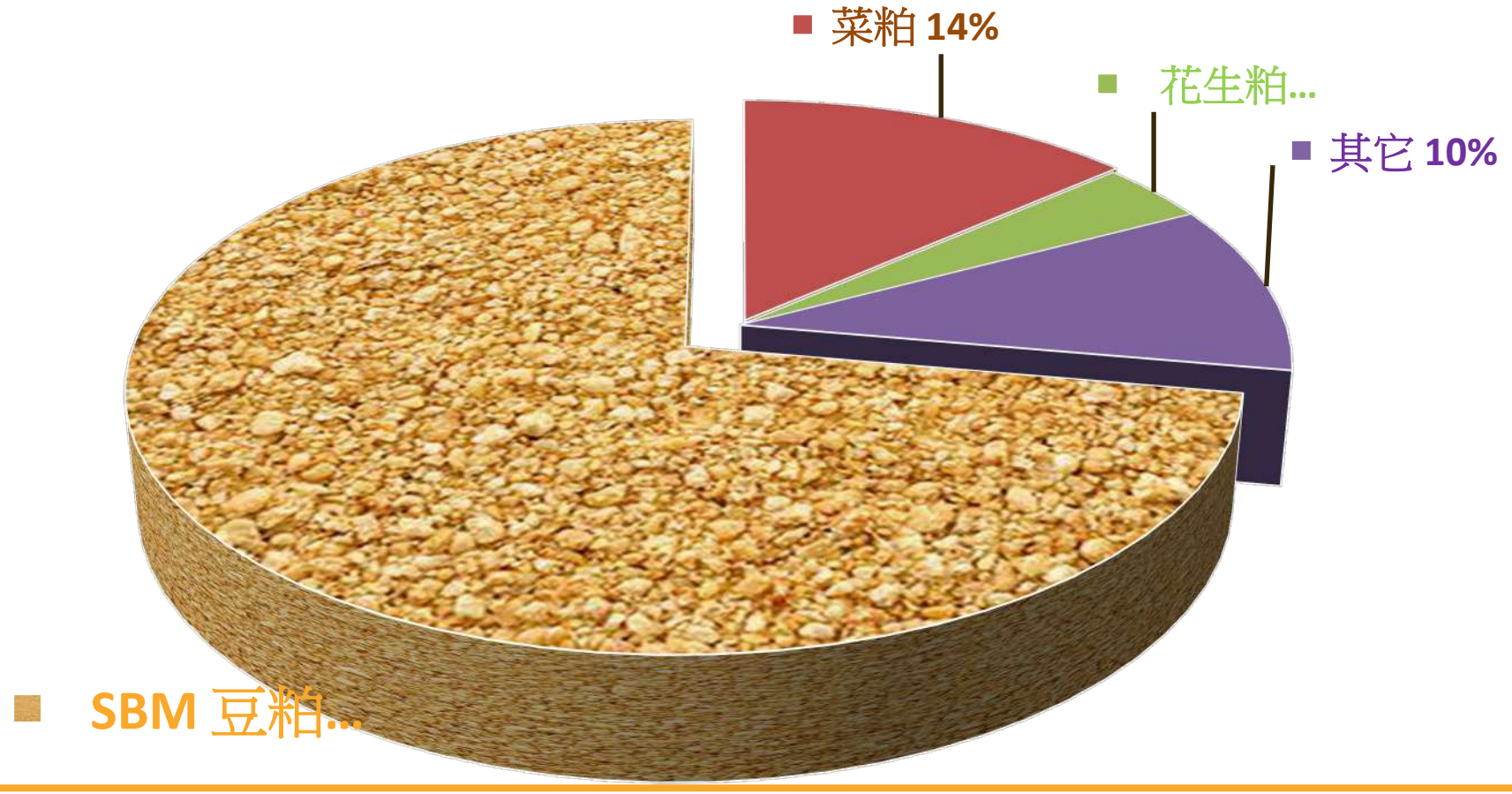
US SOY Delivers Solutions | USSEC

2023/24 世界蛋白粕產量 (百万吨)
World Protein Meal Production (MMT)



美國農業部数据 FAS 2024-08

2023/24 中国飼料蛋白粕消费量 (1.07亿吨)
China Feed Protein Meal Consumption (107MMT)



USDA 2024-08

豆粕：植物蛋白的黄金标准

Soybean Meal

The Golden Standard of Vegetable Protein

USSOY EXPERIENCES

并非所有的豆粕都相同
Not All SBM Created Equal

因为

黄豆品质因產區而异
Soybean Quality Differences by Region

USSOY EXPERIENCES

2021年和2022年美國和巴西出口黃豆品质分析
Export Quality Analysis: U.S. vs Brazil

時間	產地	热損	全損
2021年 1-12月	美國	0.05	0.99
	巴西	0.34	5.65
巴西與美國的差異		0.29	4.66
2022年 1-12月	美國	0.07	1.19
	巴西	0.40	6.20
巴西與美國的差異		0.33	5.01

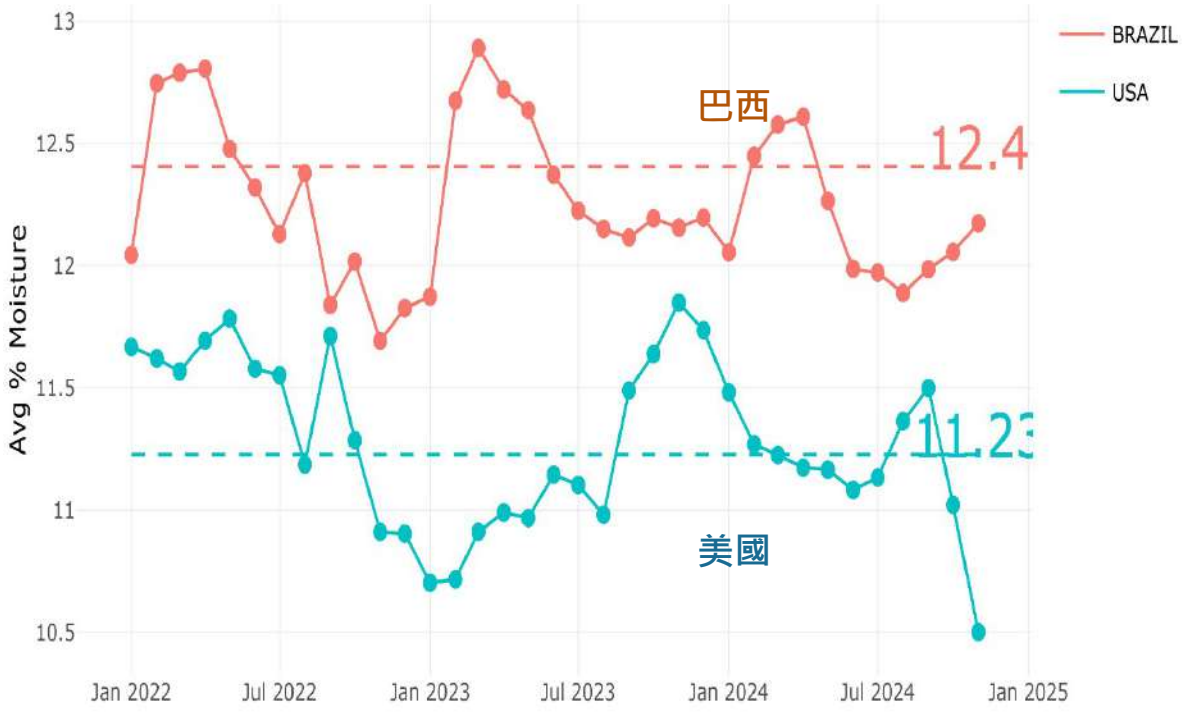
571%

521%

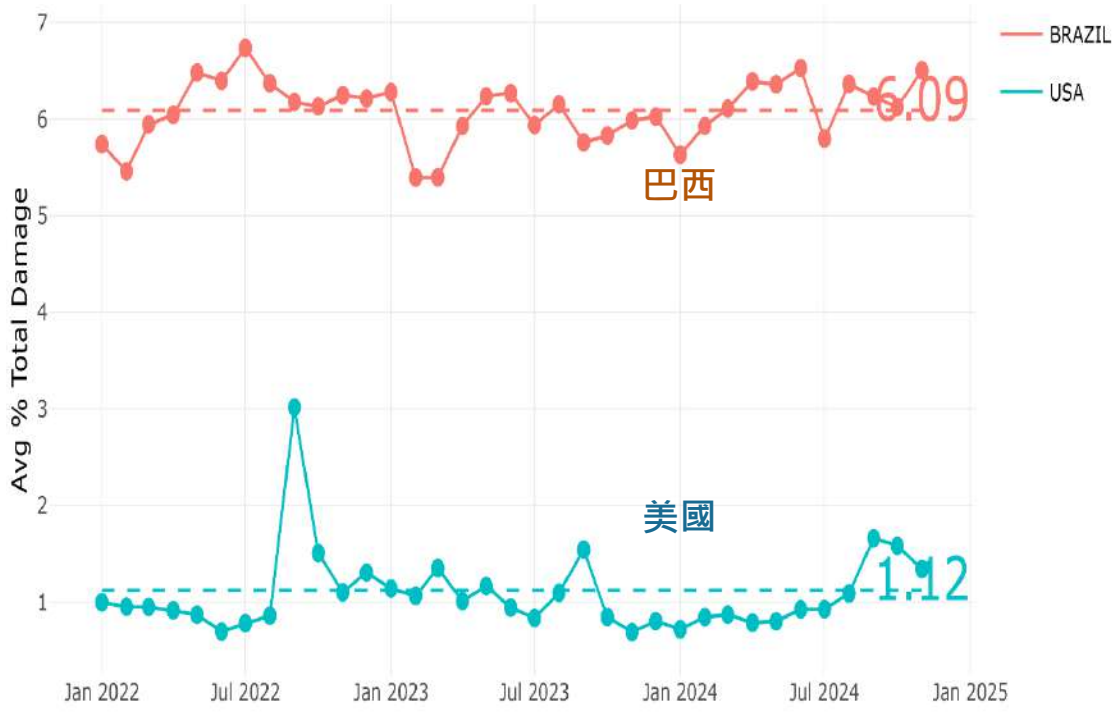
SOY EXPERIENCES

数据来源：Ag Commodities Services和美國農業部

黃豆在原產地出口港口的品質檢測
（2022-01 -- 2024-11）



水分%



總損傷率%

数据来源：Ag Commodities Services和美國農業部

衡量真正重要的指标
Measure What Matters

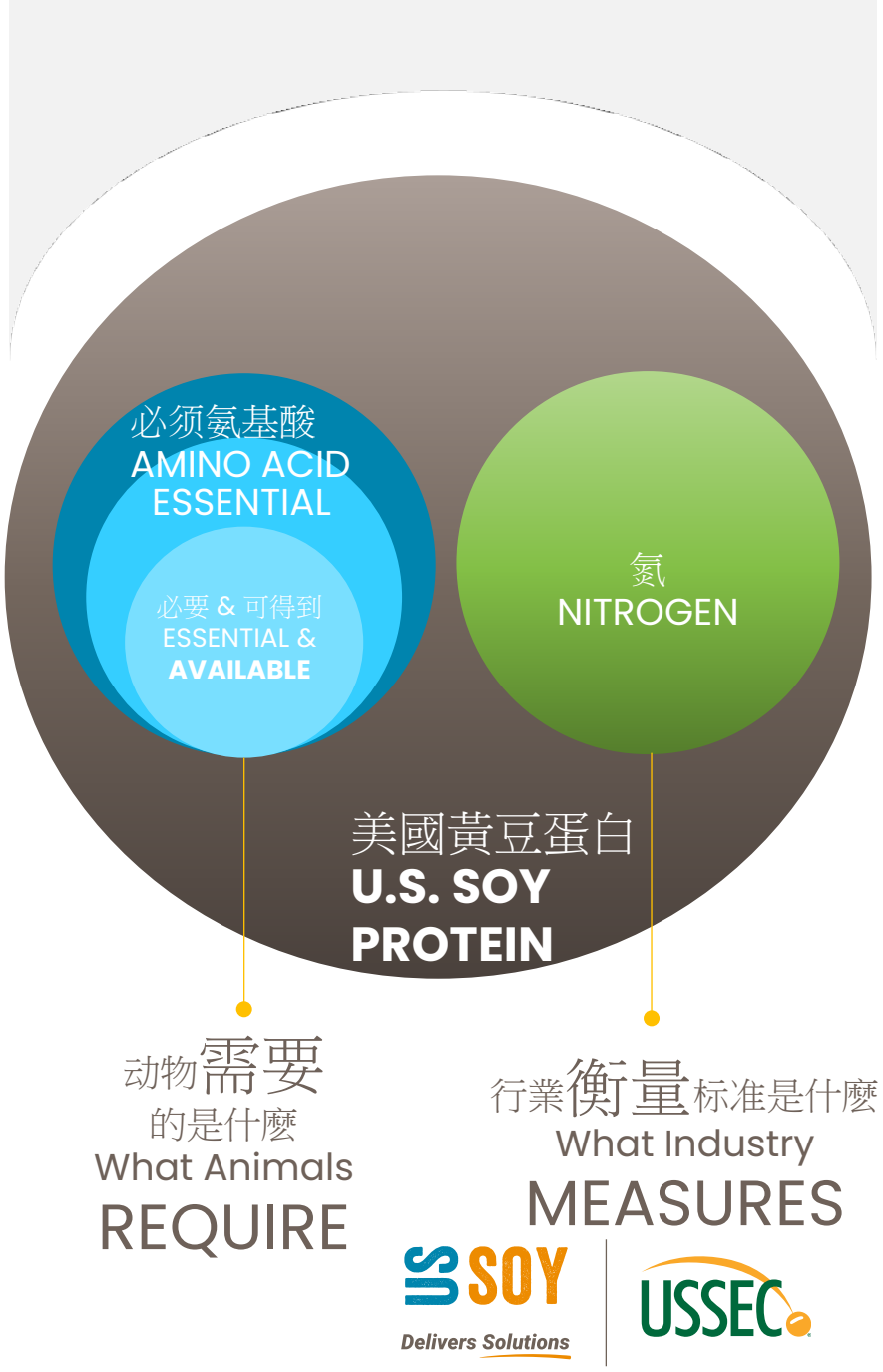
重新思考当前的可能性 Rethink what is possible now

传统的定等系统與实际價值不匹配
Traditional grading systems do not correlate well with actual value.

粗蛋白不是衡量黄豆（或豆粕）最好的指标
Crude Protein (CP) is NOT the best measure of soybean (or soybean meal) value

粗蛋白中的氮是不能直接用来衡量质量
CP Nitrogen [N] is an indirect measure of quality

衡量粗蛋白的方法：
Methods to measure CP [N]:
1. 凯氏测氮法 Kjeldahl
2. 杜马斯法 Dumas



US SOY Delivers Solutions | USSEC

蛋白换算系数因產品而异
N to protein conversion factor

• 牛奶 Cows milk	6.01 – 6.32
• 牛肉 Beef	5.50 – 5.72
• 禽蛋 Eggs	5.80 – 6.01
• 鱼 Fish	5.51 – 5.74
• 麦粉 Wheat flour	5.61
• 玉米 Corn	5.63 – 5.93
• 肉骨粉 MBM	4.88 – 5.53
• 黄豆 Soybean	5.69 – 5.79

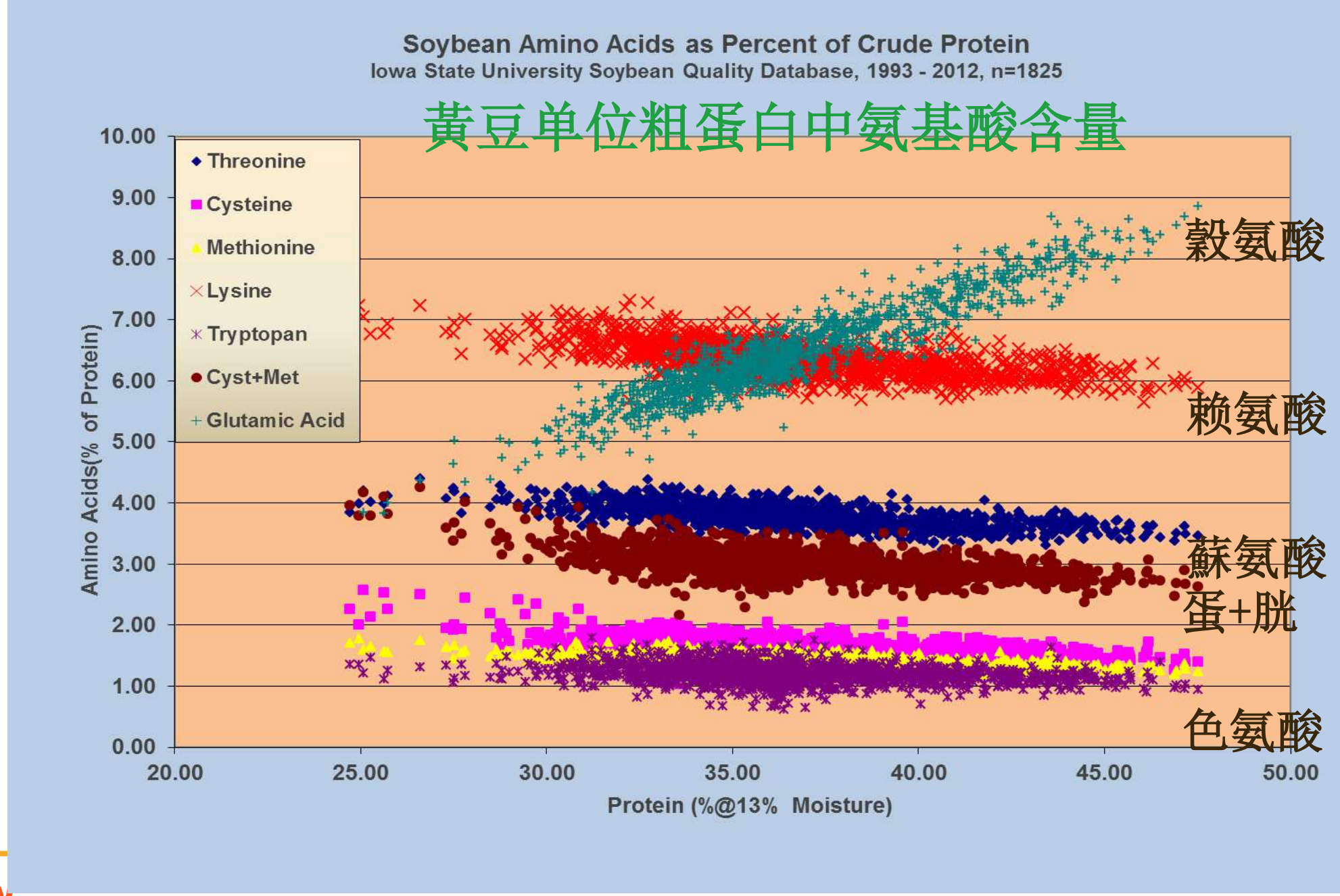
SOY EXPERIENCES

Calculation of Nitrogen-to-Protein Conversion Factors: A Review with a Focus on Soy Protein – Krul, 2019

不同氨基酸的氮含量不同 % Nitrogen in AA's varies

Amino Acid	Abbreviation	%N in AA residue		Amino Acid	Abbreviation	%N in AA residue
Alanine	Ala	19.7		Methionine	Met	10.7
Arginine	Arg	35.9		Phenylalanine	Phe	9.5
Aspartic acid	Asp	12.2		Proline	Pro	14.4
Cysteine	Cys	13.6		Serine	Ser	16.1
Glutamic acid	Glu	10.8		Threonine	Thr	13.9
Glycine	Gly	24.6		Tryptophan	Trp	15.0
Histidine	His	30.6		Tyrosine	Tyr	8.6
Isoleucine	Ile	12.4		Valine	Val	14.1
Leucine	Leu	12.4		Asparagine	Asn	24.6
Lysine	Lys	21.9		Glutamine	Gln	21.9

Calculation of Nitrogen-to-Protein Conversion Factors: A Review with a Focus on Soy Protein – Krul, 2019


Soybean Amino Acids as Percent of Crude Protein
Iowa State University Soybean Quality Database, 1993 - 2012, n=1825
黄豆单位粗蛋白中氨基酸含量
Threonine
Cysteine
Methionine
Lysine
Tryptopan
Cyst+Met
Glutamic Acid
Amino Acids(% of Protein)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
20.00
25.00
30.00
35.00
40.00
45.00
50.00
Protein (%@13% Moisture)
谷氨酸
赖氨酸
苏氨酸
蛋+胱
色氨酸

U.S. Soy Delivers Solutions

從以往只看**粗蛋白**的局限中走出来，实现**超越**
Unshackle from our past constraints of measuring just **crude protein and go beyond.**

设置新的**质量标准**，考虑最优**营养性能**和**黄豆组份**
Setting new **quality standards** that consider optimal **nutrient profile** and **soybean integrity.**

Delivers Solutions

USSEC

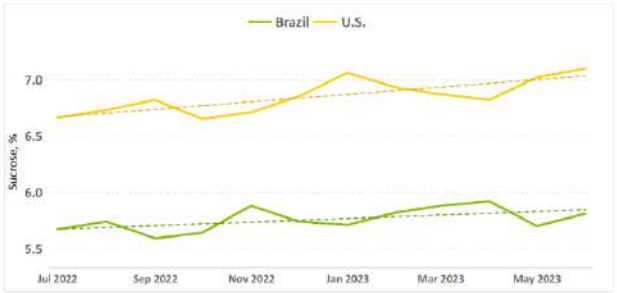
The US Soy Advantage: 美國黃豆優勢
Consistently higher quantity and quality of calories and digestible amino acids
始終保持較高的能量和可消化氨基酸品質和含量

Sucrose, %

Energy is a critical and expensive component in diet formulation.

Sucrose is the predominant sugar in soybean meal and contributes to increased energy content in monogastric diets

For Sucrose, the U.S. had a benefit over Brazil, on average, during this period.



Jul-2022 - Jun-2023 Average		
U.S.	Brazil	U.S. Benefit, %
6.85	5.76	18.92

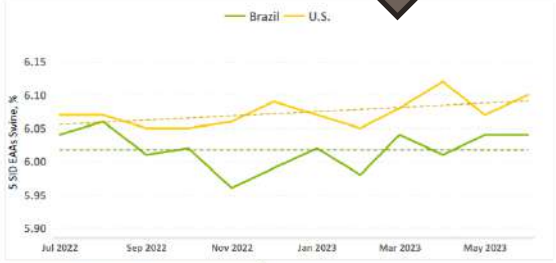
Higher Sucrose = Digestible Energy for All Species
更多蔗糖=更多的可消化能量

5 SID EAAs Swine, %

Standardized Ileal Digestibility (SID) for soybean meal provides a more accurate measurement of amino acid availability to the animal than crude protein.

The 5 EAA SID are Cysteine, Lysine, Methionine, Threonine and Tryptophan.

For 5 SID EAAs Swine, the U.S. had a benefit over Brazil, on average, during this period.



Jul-2022 - Jun-2023 Average		
U.S.	Brazil	U.S. Benefit, %
6.07	6.02	0.83

Consistency and Digestibility of Amino Acids for Poultry and Pigs
穩定的畜禽氨基酸消化率

Amino Acids - Median Value			
Amino Acid (May 2021)	Brazil	USA	USA Benefit
Lysine, % of CP	6.05	6.19	0.14
Methionine, % of CP	1.30	1.35	0.05
Cysteine, % of CP	1.43	1.43	0.00
Threonine, % of CP	3.85	3.92	0.07
Tryptophan, % of CP	1.33	1.35	0.02
5 EAAs*, % of CP	13.96	14.24	0.28
5 EAAs, % of CP (Jan-May 2021)	13.98	14.10	0.12

*5 EAAs include Lysine, Methionine, Cysteine, Threonine & Tryptopha

Amino Acid Variation Over Time - Standard Deviation			
Amino Acid (Oct 2018-May 2021)	Brazil	USA	USA Benefit
Lysine, % of CP	0.16	0.10	(0.06)
Methionine, % of CP	0.04	0.03	(0.01)
Cysteine, % of CP	0.05	0.03	(0.02)
Threonine, % of CP	0.06	0.04	(0.02)
Tryptophan, % of CP	0.03	0.01	(0.02)

US SOY Delivers Solutions | USSEC

最新的豆粕能量值比過去的高

DE and ME of SBM (kcal/kg DM)

Item	DE	ME	NE
NRC, 2012	4,021	3,660	2,319
IL, 2010-2012	4,413	3,973	2,592
IL, 2015	4,261	4,044	2,467

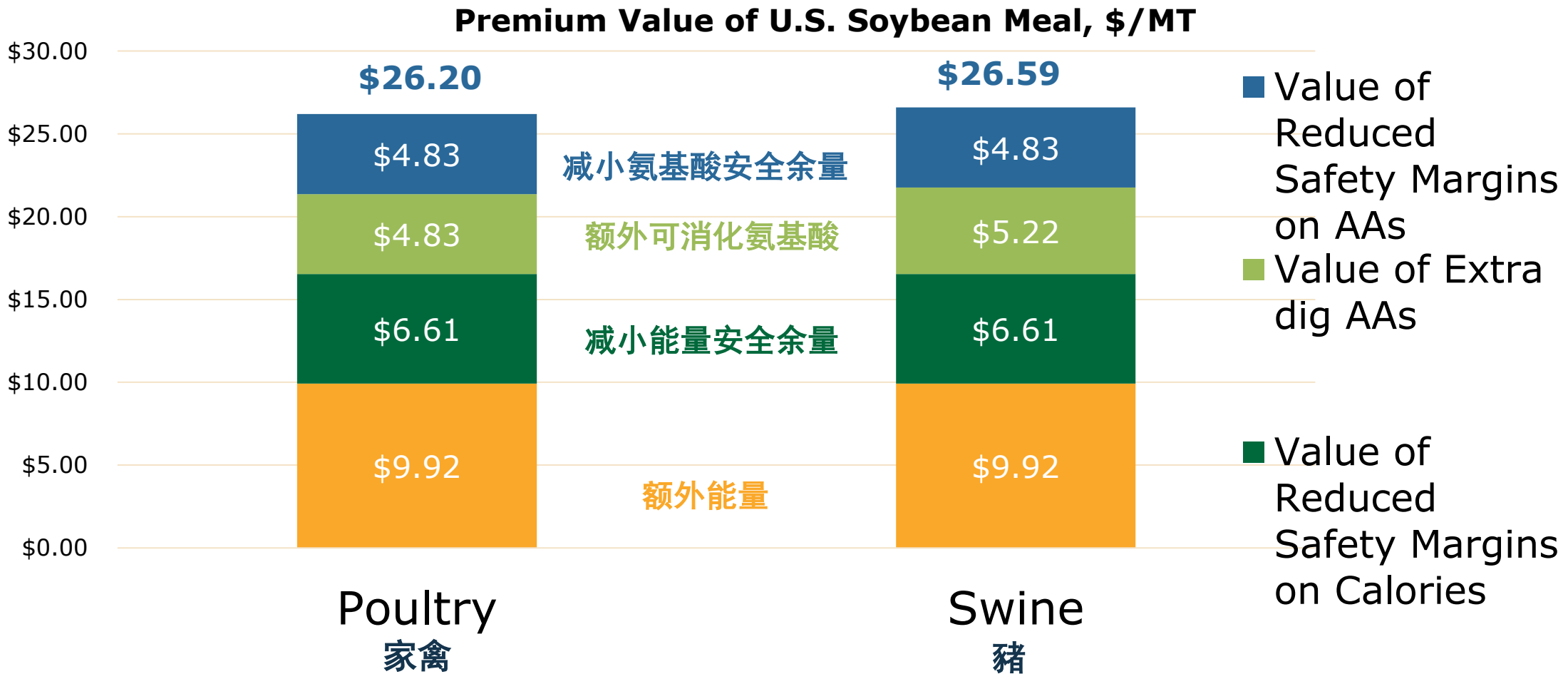
University of Illinois

US SOY Delivers Solutions | USSEC

举例：以美國市场價格计算
美國豆粕的额外價值
Extra Value of US SBM

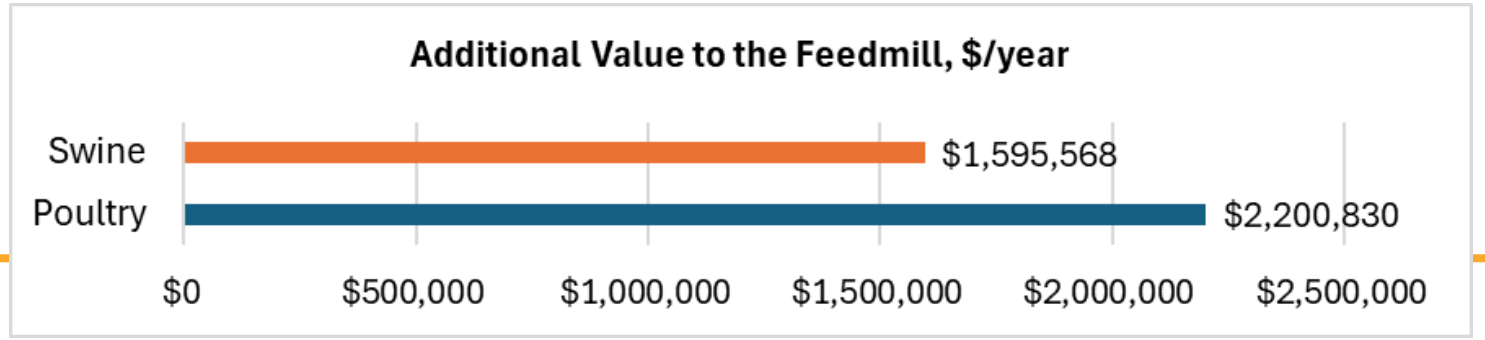
- 與南美豆粕相比，美國豆粕在飼料中的溢價 Compared with SBM from S. American region, the premiums of US SBM in feeds from:
  - 额外的代谢能 Extra energy.
  - 额外的可消化氨基酸 Extra digestible essential amino acids：Lys, Met, Thr, Val.
  - 因稳定的质量而减少的能量和氨基酸保险余量 Reduced safety margin for energy and amino acids from more consistency in nutritional quality.

美國豆粕的價值溢價 $/吨


Premium Value of U.S. Soybean Meal, $/MT
$30.00
$25.00
$20.00
$15.00
$10.00
$5.00
$0.00
$26.20
$4.83
$4.83
$6.61
$9.92
$26.59
$4.83
$5.22
$6.61
$9.92
减小氨基酸安全余量
额外可消化氨基酸
减小能量安全余量
额外能量
Value of Reduced Safety Margins on AAs
Value of Extra dig AAs
Value of Reduced Safety Margins on Calories
Poultry
家禽
Swine
豬

美國豆粕的溢價对飼料生產商的價值
The Value of US SBM Premium to a Feedmill

	肉禽 Poultry	豬 Swine
飼料生產 吨/年 Production, MT/year	240,000	240,000
料肉比 FCR	1.70	2.50
平均豆粕含量 Average SBM Inclusion, %	35%	25%
额外盈利 $/年 Additional Value, $/year	$2,200,830	$1,595,568



US SOY EXPERIENCES

美國黃豆的總體價值优势
Total Value Package from US Soy!

- Intrinsic Values 内在價值
  - 提供更多的代谢能 Greater bioavailable energy
  - 较高的氨基酸消化率 Higher amino acid bioavailability
  - 稳定可预测的品质 Consistent and predictable quality
  - 更好的氨基酸组分 Better amino acid profile

- Extrinsic Values 外在價值
  - 可持续黄豆认证 Sustainable agriculture practices（SSAP）
  - 便利及高效的物流 Convenient and efficient logistics
  - 优质的服务 First class services



南達科達州大學試驗
DR. ERIC WEAVER

試驗目的 Objective

- 評估在兩個典型斷奶-育肥飼料中豆粕水平對以下豬生產性能的影響 To evaluate soybean meal level in two common diet types (DDGS or SBM) in wean-finish pigs on:
  - 增重，采食，飼料轉化率 Growth rate, feed intake, and feed conversion
  - 上市體重，胴體重及屠宰率 Market weight, carcass weight and yield

試驗材料及方法 MATERIALS AND METHODS

- 用NRC（2012）值配製7階段飼料 Diets formulated using NRC values for NE and nutrient requirements in a Phase feeding program (7 Phases)

- 粉料，SID賴氨酸:净能滿足或高出NRC需要量 Mash diets were formulated to a SID lysine:NE target in 7 phases to meet or exceed NRC requirements (2012).
  - 豆粕净能 NE used for SBM, 2,087 Kcal/kg *(11% lower than DDGS)*
  - DDGS净能 NE used for DDGS, 2,343 Kcal/kg

- 豆粕取代合成氨基酸和豆皮以維持净能:賴氨酸比。氨基酸含量及比例滿足或高出NRC需要量 SBM replaced amino acids, and soybean hulls were used to maintain NE:lysine ratio. AA levels and ratios met or exceeded NRC requirements.

日糧處理 DIETARY TREATMENTS

Treatment		Description
豆粕日糧 SBM Diets	高豆粕 High Soy	玉米-豆粕基礎日糧，不加賴氨酸 Corn-SBM basal diet with no added lysine
	中豆粕 Medium Soy	基礎日糧+0.25%賴氨酸+其他氨基酸 Corn-SBM basal diet with 0.25% added lysine + amino acids
	低豆粕 Low Soy	基礎日糧+0.50%賴氨酸+其他氨基酸 Corn-SBM basal diet with 0.50% added lysine + amino acids
DDGS日糧 DDGS Diets	高豆粕 High Soy	玉米-DDGS基礎日糧，不加賴氨酸 Corn-DDGS-basal diet with no added lysine
	中豆粕 Medium Soy	玉米-DDGS基礎日糧+0.25%賴氨酸+其他氨基酸 Corn-DDGS-basal diet 0.25% added lysine + amino acids
	低豆粕 Low Soy	玉米-DDGS基礎日糧+0.50%賴氨酸+其他氨基酸 Corn DDGS-basal diet with 0.50% added lysine + amino acids

試驗材料及方法 MATERIALS AND METHODS

- 共540頭豬，18天日齡，5.3公斤體重 A total of 540 pigs (PIC X Compart Duroc, 18 days of age, 5.3 kg)
- 90欄 x 15重複 x 6頭/欄 90 pens, 15 replications per treatment in a randomized complete block design (RCBD), 6 pigs/pen
- 每兩周記錄平均體重和采食量，共18周 Individual BW for average daily gain (ADG) and pen feed disappearance (ADF) were collected every two weeks for 18 weeks
- 胴體數據采集于平均129公斤上市體重 Carcass data were collected at average market weight of 129 kg (18-20 weeks after placement)
  - Hot carcass weights and Fat-O-Meter, at 3rd and 4th rib from last, collected at harvest

主要飼料和營養成分 KEY INGREDIENTS AND NUTRIENTS IN DIETS

Component	DDGS			豆粕 SBM		
添加賴氨酸 LYS added, %	0.50	0.25	0	0.50	0.25	0
玉米 Corn, yellow dent	59.32	53.76	44.83	77.01	73.33	66.00
豆粕 SBM (46.5%)	0.61	9.00	22.30	10.80	19.00	27.10
DDGS	30.00	30.00	30.00	0.00	0.00	0.00
豆皮 Soy hulls	6.30	3.90	0.00	8.10	4.05	3.70
消化能 DE, Kcal/kg	*3391*	*3427*	*3461*	*3347*	*3377*	*3411*
代謝能 ME, Kcal/kg	*3303*	*3333*	*3359*	*3235*	*3264*	*3294*
净能 NE, Kcal/kg	*2475*	*2476*	*2473*	*2472*	*2472*	*2471*
粗蛋白 Crude Protein, %	***15.83***	***18.12***	***20.43***	***12.21***	***14.31***	***16.60***
分析值 Analyzed	*15.79*	*18.04*	*21.77*	*11.95*	*14.05*	*13.70*

日糧對體重的影響 EFFECTS OF DIET ON BODY WEIGHTS TO 18 WEEKS

Protein source	DDGS/SBM			SBM			SEM	P-value			
添加賴氨酸 % LYS added, %	0.5	0.25	0	0.5	0.25	0		Treatment	Protein	AA	Interaction
Body weight, kg											
0 周 week	5.27	5.39	5.3	5.33	5.22	5.21	0.239	0.995	0.726	0.972	0.8905
2周 week	7.57	7.75	7.81	7.49	7.81	7.83	0.117	0.199	0.986	0.033	0.856
6周 week	23.12^{bc}	24.15^{a}	23.83^{ab}	22.34^{c}	24.17^{a}	23.78^{ab}	0.352	0.002	0.352	<0.001	0.449
14周 week	75.74^{b}	79.12^{a}	76.30^{b}	76.10^{b}	78.69^{a}	79.05^{a}	0.769	0.001	0.161	0.001	0.105
18周 week	104.33^{b}	106.5^{ab}	106.72^{ab}	106.54^{a}	108.32^{a}	109.15^{a}	1.051	0.035	0.014	0.048	0.958

日糧對平均日增重的影響 EFFECTS OF DIET ON AVERAGE DAILY GAIN TO 18 WEEKS

Protein source	DDGS/SBM			SBM			SEM	P-value			
LYS added, %	0.5	0.25	0	0.5	0.25	0		Treatment	Protein	AA	Interaction
Average daily gain, kg/d											
0-6 weeks	0.425^{bc}	0.449^{a}	0.442^{ab}	0.408^{bc}	0.449^{a}	0.440^{ab}	0.0084	0.004	0.373	0.001	0.543
6 - 14 weeks	0.940^{bc}	0.981^{a}	0.938^{c}	0.959^{abc}	0.974^{ab}	0.987^{a}	0.0121	0.014	0.042	0.075	0.068
14 - 18 weeks	1.021^{ab}	0.978^{b}	1.086^{a}	1.087^{a}	1.059^{ab}	1.075^{a}	0.0290	0.060	0.062	0.106	0.241
Overall (0- 18 weeks)	0.787^{b}	0.804^{ab}	0.804^{ab}	0.804^{ab}	0.818^{a}	0.824^{a}	0.0085	0.045	0.015	0.069	0.935

日糧對采食量的影響
EFFECTS OF DIET ON FEED DISAPPEARANCE TO 18 WEEKS

Protein source	DDGS/SBM			SBM			SEM	Main Effect (P-value)		
LYS added, %	0.5	0.25	0	0.5	0.25	0		Treatment	Protein	AA
Average daily feed intake, kg/d										
0-6 weeks	0.622	0.644	0.67	0.619	0.653	0.638	0.0193	0.413	0.576	0.173
6 - 14 weeks	2.102	2.147	2.106	2.074	2.05	2.094	0.0337	0.467	0.103	0.932
14 - 18 weeks	3.025	3.099	3.263	3.046	3.132	3.009	0.0753	0.179	0.281	0.376
Overall (0- 18 weeks)	1.814	1.857	1.885	1.805	1.825	1.812	0.0278	0.285	0.098	0.335

日糧對增重:飼料比的影響
EFFECTS OF DIET ON G:F RATIO TO 18 WEEKS

Protein source	DDGS/SBM			SBM			SEM	P-value			
AA level, lbs LYS	0.50	0.25	0	0.50	0.25	0		Treatment	Protein	AA level	Interaction
Gain to feed ratio											
0-6 weeks	0.686	0.705	0.663	0.667	0.695	0.701	0.0230	0.703	0.876	0.562	0.412
14 - 18 weeks	0.338^{ab}	0.316^{b}	0.336^{ab}	0.359^{a}	0.344^{ab}	0.359^{a}	0.0107	0.060	0.008	0.178	0.947
Overall (0- 18 weeks)	0.434^{bc}	0.433^{bc}	0.429^{c}	0.446^{abc}	0.450^{ab}	0.456^{a}	0.0063	0.018	0.001	0.899	0.499
Overall F:G	2.30	2.31	2.33	2.24	2.22	2.19					

豆粕水平對胴體的影響
EFFECTS OF SBM LEVEL ON CARCASS DATA

Protein source	DDGS			SBM			SEM	P-value			
AA level, lbs/T	10	5	0	10	5	0		Treatment	Protein source	AA level	Interaction
No. of pigs	77	81	75	75	73	75					
熱胴體重 HCW, kg	93.44^{b}	94.89^{ab}	93.49^{b}	95.23^{ab}	96.57^{a}	95.78^{ab}	1.005	0.183	0.020	0.341	0.951
背膘 Backfat, mm	17.8^{bc}	16.9^{c}	16.8^{c}	19.1^{a}	17.7^{bc}	18.1^{ab}	0.415	0.001	0.001	0.013	0.789
腰脊 Loin depth, mm	61.8^{c}	63.1^{bc}	63.2^{bc}	62.9^{bc}	64.5^{ab}	66.0^{a}	0.859	0.014	0.013	0.033	0.562
瘦肉率 lean, %	55.4^{bc}	56.1^{ab}	56.2^{a}	54.8^{c}	55.8^{ab}	55.7^{ab}	0.275	0.003	0.033	0.002	0.861
計算瘦肉重. 公斤 Calculated lean wt, kg	51.77	53.23	52.54	52.19	53.89	53.35					

結論 CONCLUSIONS:

较高的豆粕水平提高了猪的价值 HIGHER SBM LEVELS CONSISTENTLY INCREASED THE VALUE OF THE PIG

6 周 weeks: + 1 kg vs 0.50% LYS

18 周 weeks: + 2 kg vs DDGS or 0.50% LYS

胴體重 Carcass weight: +2 kg vs DDGS and +1 kg vs 0.50% LYS

腰脊 Loin-eye depth: +2 mm vs DDGS and +2 mm vs 0.50% LYS

较高的豆粕水平提高了飼料轉化率
HIGHER SBM LEVELS CONSISTENTLY INCREASED FEED CONVERSION IN GROWING AND FINISHING PHASES

6 周 weeks: G:F + 4% vs DDGS

18 周 weeks: + 4% vs DDGS

全程 Overall: 4-5% improvement

抵消了大部分较高的饲料成本 Negates most of the higher feed cost

启示： IMPLICATIONS:

- 在断奶-育肥飼料中，对豆粕使用的相对经济评估应包括體增重，飼料效率和胴體價值的贡献　The relative economic evaluation of SBM use at higher levels in wean-finish diets should include a contribution of growth, efficiency and carcass merit

豆粕减轻受猪呼吸道疾病對生长的影響
FEEDSTUFFS　Oct. 2023

Delivers Solutions

USSEC

Boyd et al, 2010

偶然的發現：

- 原試驗是爲測試豆粕是否能滿足飼料中添加莱克多巴胺后對賴氨酸的需求 Initial trial: to determine if SBM was a factor in meeting lysine requirement for pigs fed ractopamine
- 始重98.4公斤，21天試驗 21-day trial starting at 98.4 kg BW
- 4 x 2 factorial arrangement (4 levels of SID lysine & 2 levels of SBM)
  - SID賴氨酸 65, .75, .85, & .95% SID Lysine
  - 低、高 豆粕 Low or High SBM
- 預試驗期，豬群感染了PRRS 和PCV2。 Pre-trial, pigs broke with PRRS and PCV2

豆粕水平 SBM Level	Units	.65% Lys	.75% Lys	.85% Lys	.95% Lys
低 Low	% of feed	13.65	15.80	18.10	20.30
高 High	% of feed	18.70	23.10	27.65	31.85
低 Low	蛋白 CP, %	16.0	16.0	16.0	16.0
高 High	蛋白 CP, %	16.0	17.4	18.7	20.1

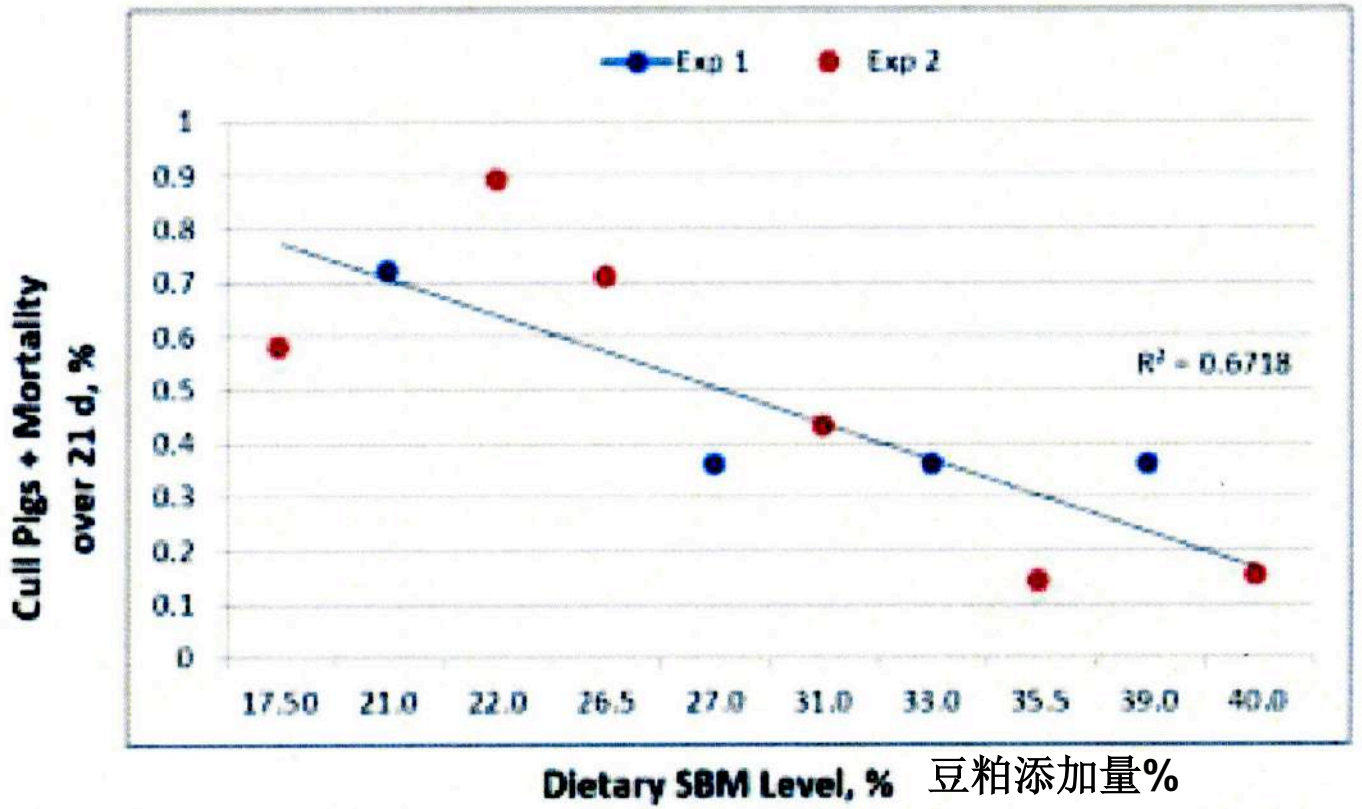
	低豆粕 Low SBM	高豆粕 High SBM	P<	優勢 % Advantage
欄數 # of Pens	24	24		
豬，頭 # of Pigs	210	210		
胴體率 Carcass yield, %	74.6	74.7	ND	
胴體重 Carcass wt, kg	87.21	89.0	0.05	2.0
胴體日增重 Carcass ADG, kg	.603	.680	0.09	12.8
胴體增重:飼料比 Carcass FCE	4.35	3.93	0.05	-9.7

兩個保育後期試驗 Two Late Nursery Trials (Cemin et al, 2020)

- New Horizon Farms: 2,233 pigs from 10.9 to 22.2 kg BW
- JBS Pork: 3,795 pigs from 17.7 to 35.4 kg BW
- Pigs in moderate to good health

- *Anti-viral*
- *Oxidation stress reduction*
- *Anti-inflammatory*
- *Improve immune cell function*
- *Preserve intestinal barrier integrity*

淘汰+死亡%， 21天



感谢您的聆听 Thank You!

US SOY EXPERIENCES

ASA American Soybean Association International Marketing®

UNITED SOYBEAN BOARD™

USSEC U.S. SOYBEAN EXPORT COUNCIL

CBOT市場展望
The Price Risk of New Crop – Soy & Corn

to USSEC

R.J. O'Brien 美國羅傑歐期貨

陳貝爾

2024年12月10-11日

Company Overview 公司簡介

RJO'Brien

USSEC

USSOY Delivers Solutions

RJO Company Profile 公司概況

Privately owned Futures Commission Merchant founded in 1914。公司始建於1914年，為私人家族所有。

The largest independent FCM in the United States, and has a global presence with offices in Asia, Europe, the Middle East and South America 是目前美國最大的獨立期貨經紀機構（FCM），在亞洲、歐洲、中東和拉美等地均設有分支。

RJO is a fully diversified, integrated FCM servicing the world's largest financial, industrial, and agricultural institutions, with client segregated assets of approximately $6B. RJO是一家多元化的綜合型期貨經紀機構，為全球最大的一些金融、工業和農業機構提供專業服務，目前公司的客戶管理資產約60億美元。

RJO is the only remaining founding member of the Chicago Mercantile Exchange and continues to be a member of all major futures exchanges worldwide, including the CME Group (CME, CBOT, COMEX, NYMEX), ICE Futures (US, Canada), CBOE Futures (CFE), London Metal Exchange (LME) and the NASDAQ Futures Exchange。RJO是僅存的CME創始會員，同時也是全球主要期貨交易所的會員，其中包括芝商所 (CME, CBOT, COMEX, NYMEX)，ICE（美國，加拿大），CBOE期貨（CFE）, LME和納斯達克期貨交易所。

With rigorous and experienced risk management, the firm's capital base is strictly utilized for the protection of its customers and is not leveraged in any capacity。風控管理嚴格且經驗豐富，公司資產嚴格用於保護客戶利益，不進行任何形式的杠杆交易。

Outline 提綱

玉米市場展望

大豆市場展望

小麥市場展望

總結與展望

Corn 玉米

USDA US Corn Revisions Nov vs Oct
USDA11月報告對美國玉米平衡表的調整項

RJO'Brien

USDA US Corn Revisions

	2023/24			2024/25		
	11-Oct	8-Nov	Change	11-Oct	8-Nov	Change
Area	-Million acres-			-Million acres-		
Planted	94.6	94.6	0.0	90.7	90.7	0.0
Harvested	86.5	86.5	0.0	82.7	82.7	0.0
	-Bushels-			-Bushels-		
Yield/Harvested acre	177.3	177.3	0.0	183.8	183.1	-0.7
	-Million bushels-			-Million bushels-		
Beginning stocks	1,360	1,360	0	1,760	1,760	0
Production	15,341	15,341	0	15,203	15,143	-60
Imports	28	28	0	25	25	0
Supply, total	16,729	16,729	0	16,989	16,928	-61
Feed and residual	5,814	5,807	-7	5,825	5,825	0
Food, seed, industrial use	6,862	6,869	7	6,840	6,840	0
Ethanol for fuel	5,471	5,478	7	5,450	5,450	0
Domestic, total	12,676	12,676	0	12,665	12,665	0
Exports	2,292	2,292	0	2,325	2,325	0
Use, total	14,969	14,969	0	14,990	14,990	0
Ending stocks	1,760	1,760	0	1,999	1,938	-61
Average Farm Price	$4.55	$4.55	$0.00	$4.10	$4.10	$0.00

Delivers Solutions

US Corn Supply/Demand Balance
美國玉米平衡表

RJO'Brien

U.S. Corn Supply/Demand Balance

September/August; thousand acres; million bushels

	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	RJO 24/25	USDA 11/08 24/25
Acres Planted	90,597	88,019	94,004	90,167	88,871	89,745	90,652	92,901	88,162	94,641	90,748	90,748
% Harvested	91.8	91.7	92.3	91.8	91.5	90.6	90.8	91.5	89.3	91.4	91.1	91.1
Acres Harvested	83,146	80,753	86,748	82,733	81,276	81,337	82,313	84,988	78,705	86,513	82,710	82,710
Average Yield	171.0	168.4	174.6	176.6	176.4	167.5	171.4	176.7	173.4	177.3	183.5	183.1
Carry-In	1,232	1,731	1,737	2,293	2,140	2,221	1,919	1,234	1,377	1,360	1,760	1,760
Production	14,217	13,602	15,148	14,609	14,340	13,620	14,111	15,018	13,651	15,341	15,175	15,143
Imports	32	66	57	36	27	40	24	23	39	28	30	25
Total Supply	15,481	15,400	16,942	16,939	16,507	15,881	16,055	16,275	15,066	16,729	16,965	16,928
Food/Ind.	1,372	1,399	1,423	1,422	1,386	1,400	1,408	1,409	1,351	1,361	1,360	1,360
Ethanol	5,200	5,224	5,432	5,605	5,378	4,857	5,033	5,320	5,176	5,478	5,500	5,450
Seed	29	31	29	30	29	30	31	29	32	31	30	30
F/S/I	6,601	6,653	6,885	7,057	6,793	6,286	6,471	6,758	6,558	6,869	6,890	6,840
Feed	5,281	5,110	5,470	5,304	5,428	5,899	5,603	5,671	5,482	5,807	5,875	5,825
Exports	1,867	1,899	2,294	2,438	2,065	1,776	2,747	2,469	1,665	2,292	2,400	2,325
Total Usage	13,750	13,662	14,649	14,799	14,287	13,962	14,821	14,898	13,706	14,969	15,165	14,990
Carry-Out	1,731	1,737	2,293	2,140	2,221	1,919	1,234	1,377	1,360	1,760	1,800	1,938
Stocks/Usage	12.6	12.7	15.7	14.5	15.5	13.7	8.3	9.2	9.9	11.8	11.9	12.9

RJO預期美國2024/25年度玉米出口量為24億蒲(英斗)，較USDA預測的23.25億增7500萬蒲(英斗)

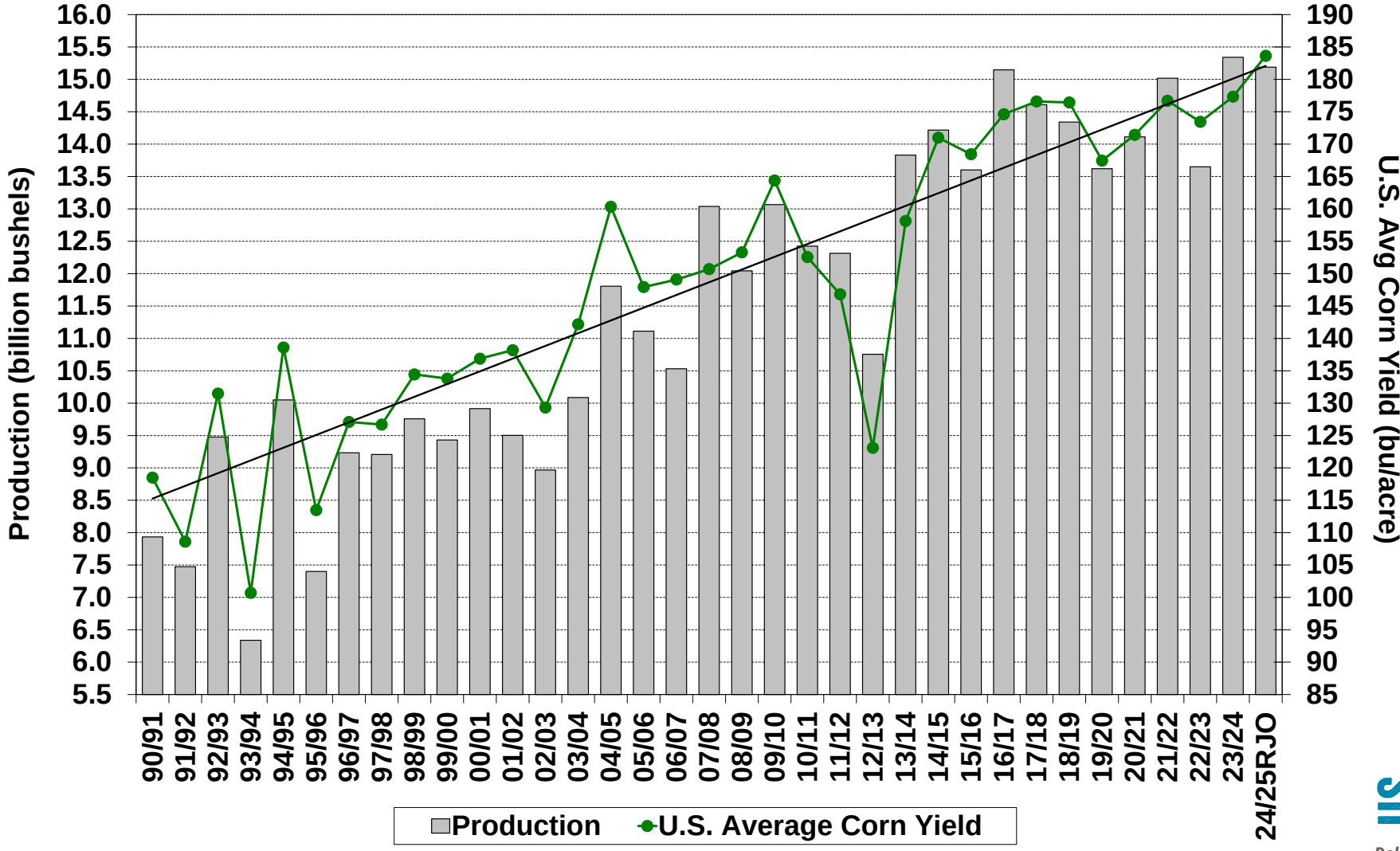
RJO預期美國24/25年度乙醇用玉米需求量為 55 億蒲(英斗)，較 USDA 預測 高 5000 萬蒲(英斗)

RJO預期美國 24/25 年度玉米飼用/ 調整用量為 58.75 億蒲(英斗)，較 USDA 預測高 5000 萬蒲(英斗)。

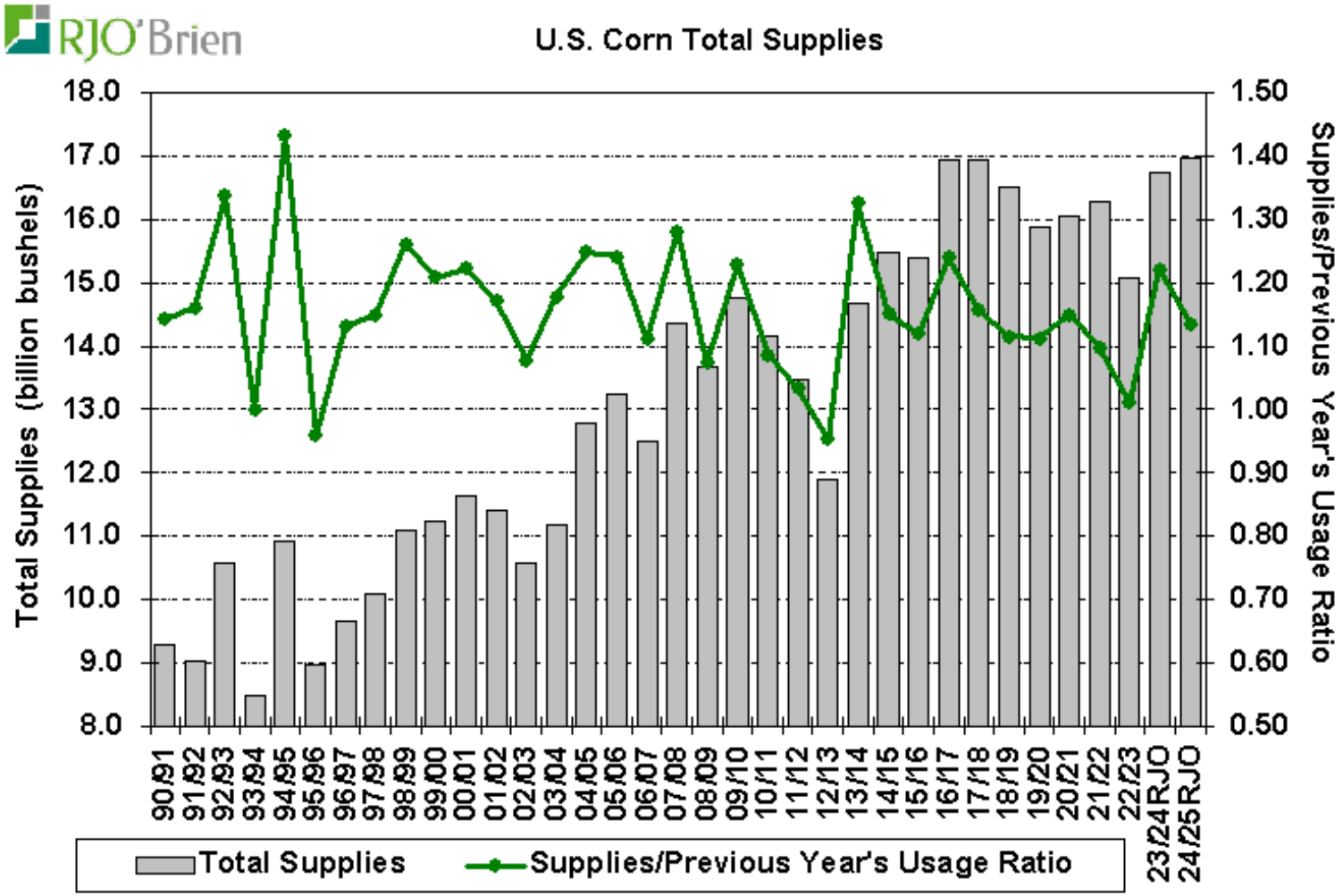
RJO預期美國 24/25 年度玉米年終庫存為 18 億 蒲(英斗)，遠低於 USDA 預測的 19.38 億蒲(英斗)，略高於去年的 17.6 億蒲(英斗)。

USDA1 月底會發佈季度穀物庫存報告，同時也會發佈年度產量報告。

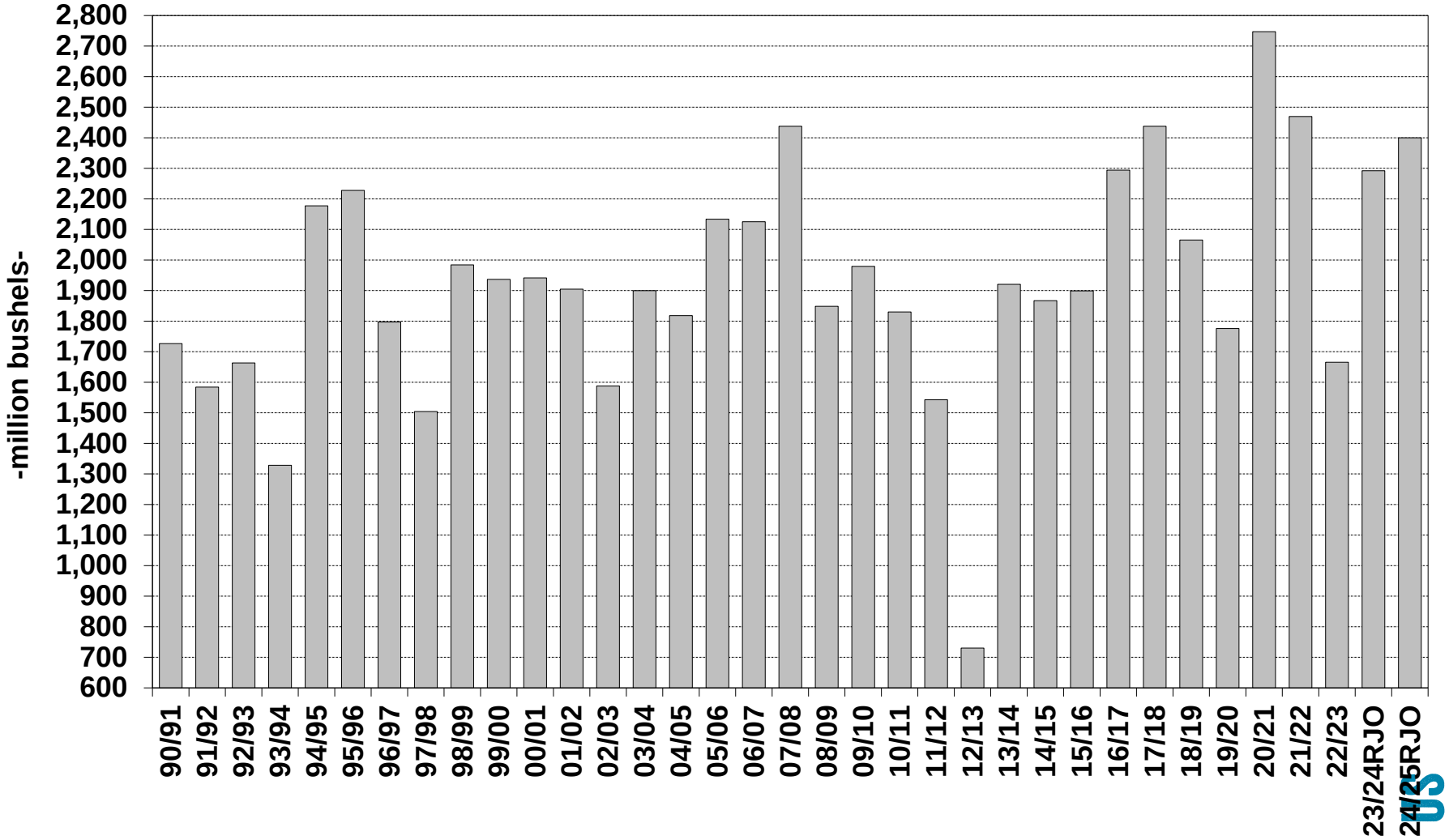
U.S. Corn Production and Yield
美國玉米產量和單產



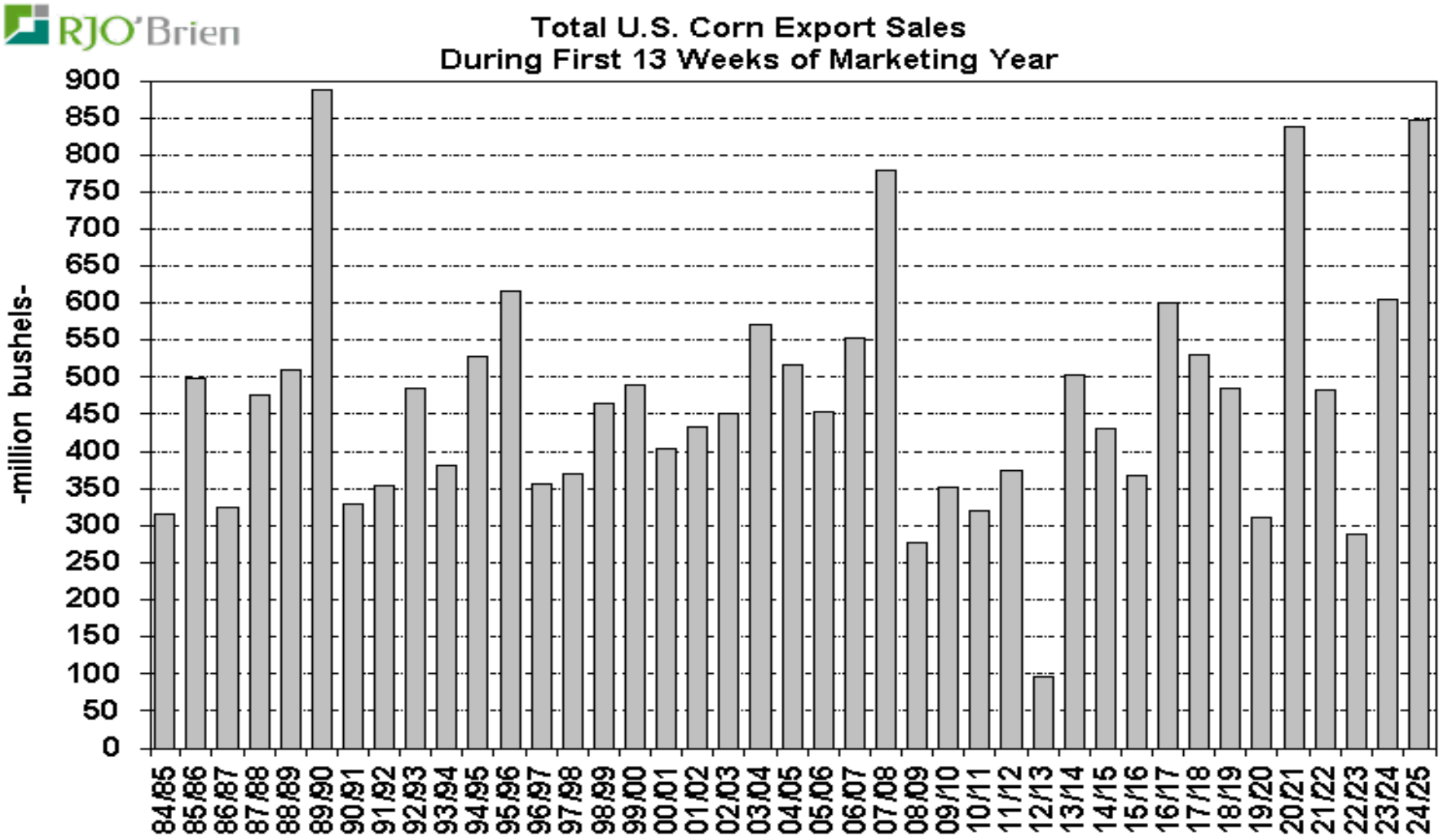
U.S. Corn Total Supplies
美國玉米總供應量



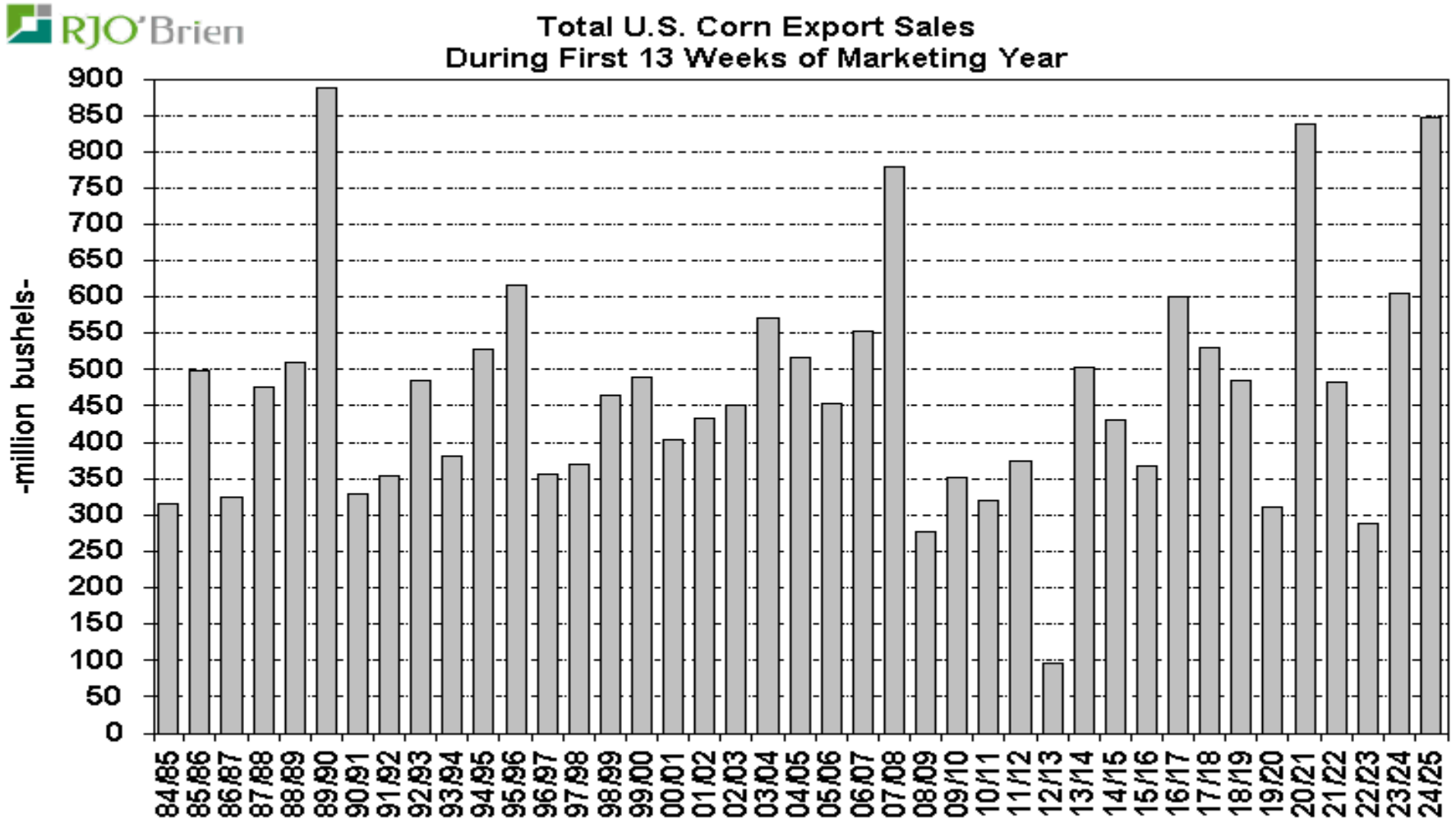
U.S. Annual Corn Exports
美國年度玉米出口量



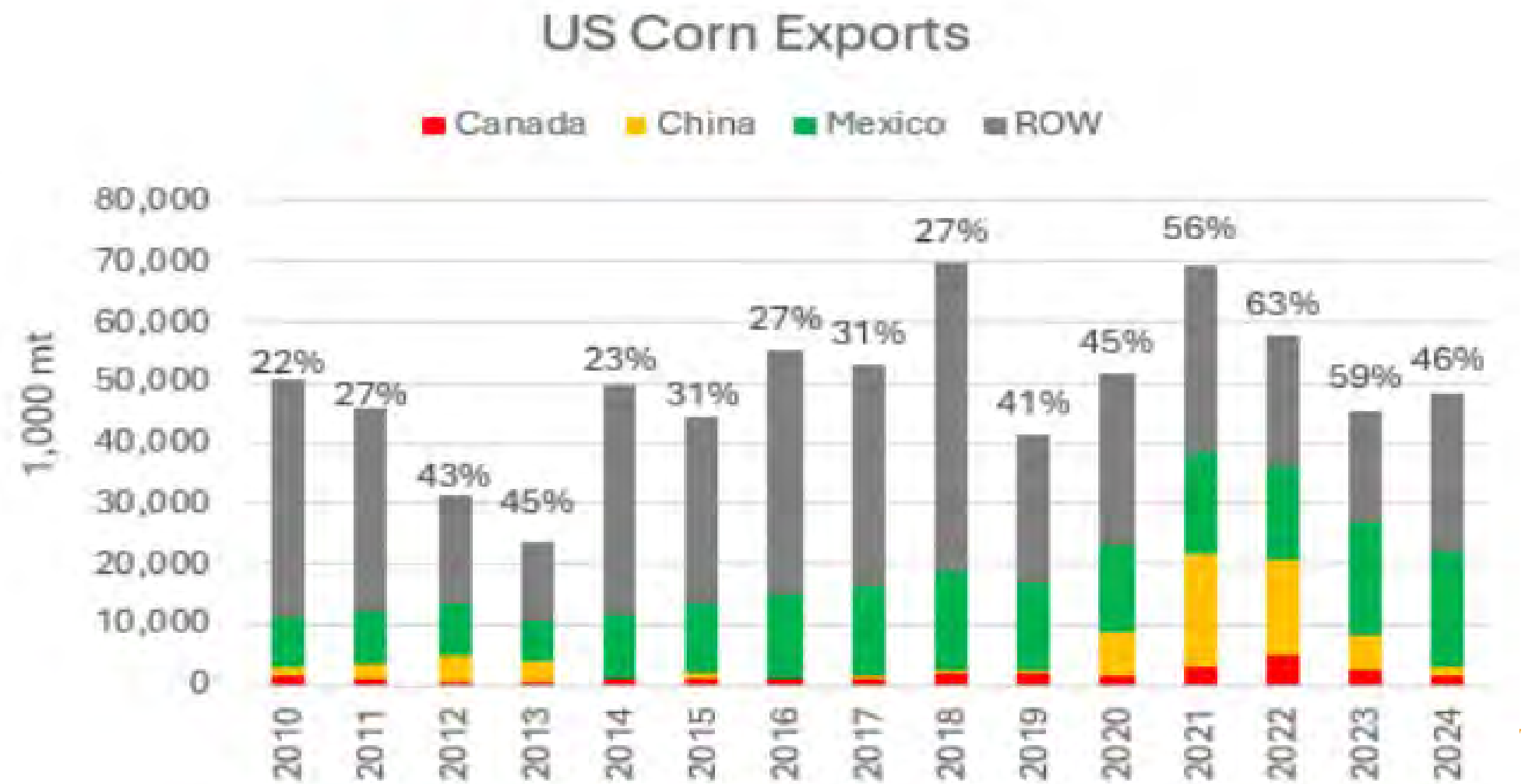
U.S. Corn Total Export Sales During First 13 Weeks of Marketing Year
市場年度前13週美國玉米出口總銷量



U.S. Corn Total Export Sales During First 13 Weeks of Marketing Year
市場年度前13週美國玉米出口總銷量



U.S. Corn Exports by Country
美國按國家區分的玉米出口量



China Corn Balance/Import Corn Margin
中國玉米平衡表/進口玉米利潤

中国玉米供需平衡表

	2022/23	2023/24（11 月估计）	2024/25（10 月预测）	2024/25（11 月预测）
千公顷（1000 hectares）				
播种面积	43070	44219	44886	44886
收获面积	43070	44219	44886	44886
公斤/公顷（kg per hectare）				
单产	6436	6532	6617	6617
万吨（10000 tons）				
产量	27720	28884	29701	29701
进口	1871	2341	1300	1300
消费	29051	29500	29964	29964
食用消费	980	991	1000	1000
饲用消费	18800	19100	19350	19350
工业消费	8100	8238	8450	8450
种子用量	191	193	196	196
损耗及其它	980	978	968	968
出口	1	1	1	1
结余变化	539	1724	1036	1036
元/吨（yuan per ton）				
国内玉米产区批发均价	2744	2379	2500-2700	2500-2700
进口玉米到岸税后均价	2682	2142	2250-2350	2250-2350

注释：玉米市场年度为当年 10 月至下年 9 月。

来源：農業農村部，上海鋼聯

我的钢铁 Mysteel.com

VIP

2024年12月 6日

进口玉米到港完税成本及利润

美湾港口

交货月	到岸完税价	广东港口	理论进口利润	CBOT玉米	港口基差	FOB	CNF
2025年1月	2089.93	2220.00	130.07	4.36	0.94	208.66	249.00
2025年2月	2083.64	2220.00	136.36	4.36	0.92	207.87	248.21
2025年3月	2074.20	2220.00	145.80	4.36	0.89	206.69	247.03
2025年4月	2065.23	2220.00	154.77	4.26	0.78	205.57	245.91
2025年5月	2065.23	2220.00	154.77	4.26	0.78	205.57	245.91
2025年6月	2063.97	2220.00	156.03	4.44	0.78	205.41	245.75

注：美湾港口运费为40.34美元/吨

美西港口

交货月	到岸完税价	广东港口	理论进口利润	CBOT玉米	港口基差	FOB	CNF
2025年1月	2081.41	2220.00	138.59	4.36	1.41	227.16	247.93
2025年2月	2090.85	2220.00	129.15	4.36	1.44	228.35	249.12
2025年3月	2097.14	2220.00	122.86	4.36	1.46	229.13	249.90
2025年4月	2094.47	2220.00	125.53	4.26	1.37	228.80	249.57
2025年5月	2094.47	2220.00	125.53	4.26	1.37	228.80	249.57
2025年6月	2093.21	2220.00	126.79	4.44	1.37	228.64	249.41

注：美西港口运费为20.77美元/吨

巴西港口

交货月	到岸完税价	广东港口	理论进口利润	CBOT玉米	港口基差	FOB	CNF
2025年1月	2184.39	2220.00	35.61	4.36	1.40	226.77	260.82
2025年2月	2058.54	2220.00	161.46	4.36	1.00	211.02	245.07
2025年3月	2074.74	2220.00	145.26	4.36	0.97	213.05	247.10
2025年4月	2077.89	2220.00	142.11	4.26	0.98	213.44	247.49
2025年5月	2077.89	2220.00	142.11	4.26	0.98	213.44	247.49
2025年6月	2076.63	2220.00	143.37	4.44	0.98	213.29	247.34

注：巴西港口运费为34.05美元/吨

阿根廷港口

交货月	到岸完税价	广东港口	理论进口利润	CBOT玉米	港口基差	FOB	CNF
2025年1月	2117.70	2220.00	102.30	4.36	1.06	213.39	252.48
2025年2月	2117.70	2220.00	102.30	4.36	1.06	213.39	252.48
2025年3月	2051.62	2220.00	168.38	4.36	0.85	205.12	244.21
2025年4月	2055.24	2220.00	164.76	4.26	0.78	205.57	244.66
2025年5月	2055.24	2220.00	164.76	4.26	0.78	205.57	244.66
2025年6月	2028.81	2220.00	191.19	4.44	0.70	202.26	241.35

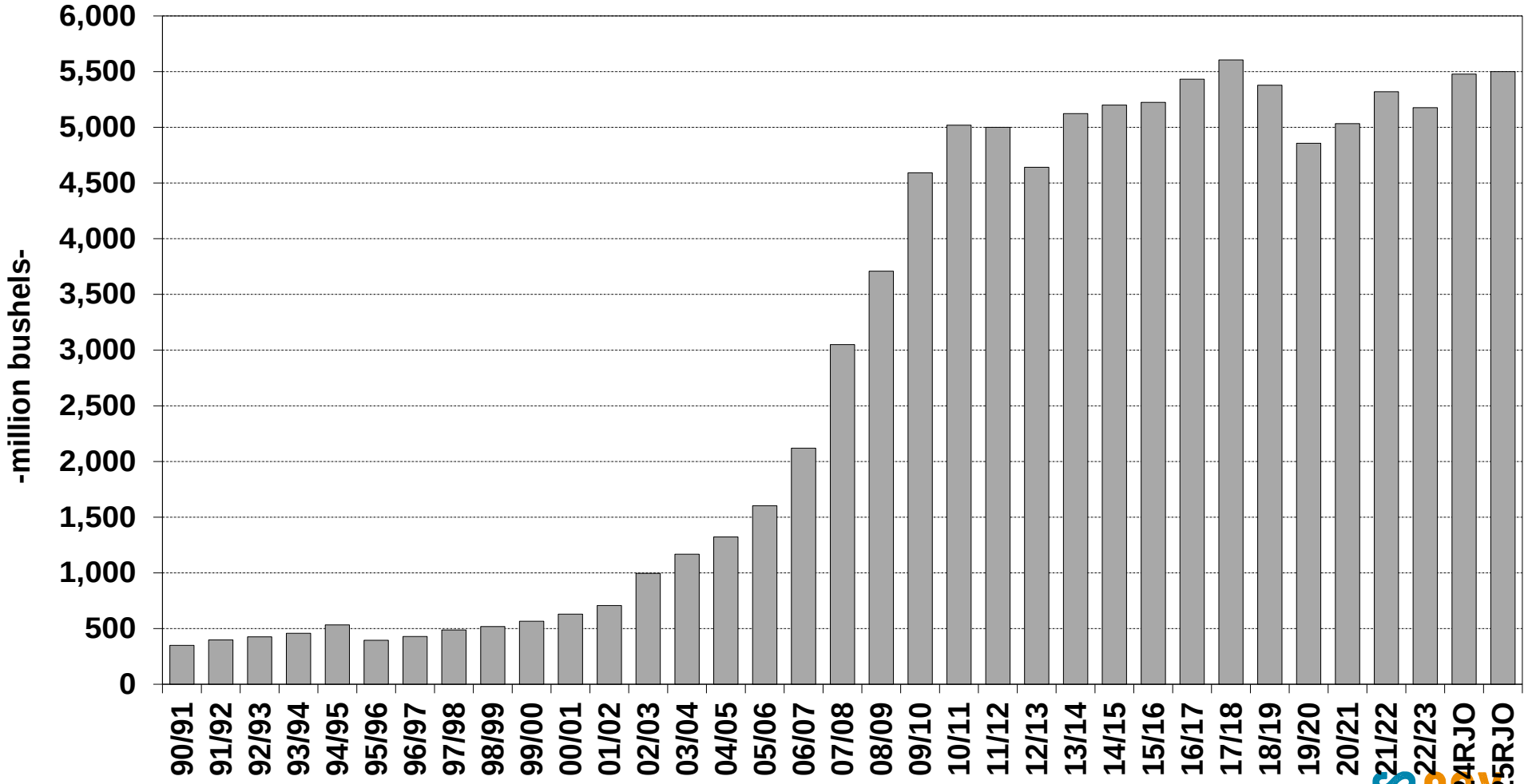
注：阿根廷港口运费为39.09美元/吨

备注

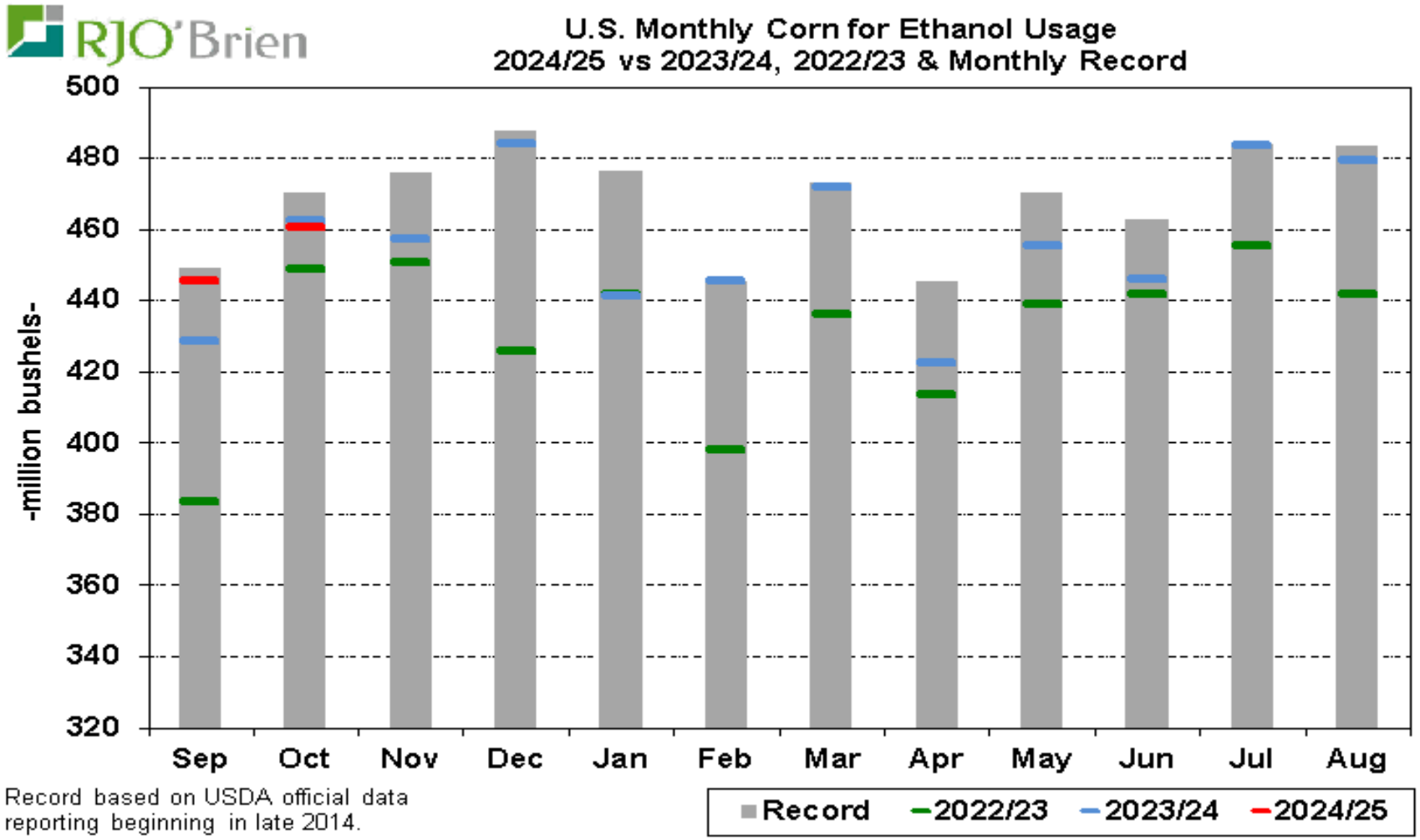
1、前一日汇率：美元兑人民币收盘价报7.2592
2、到岸完税价、理论进口利润单位为元/吨；CBOT玉米、港口基差单位为美元/蒲式耳；FOB、CNF单位为美元/吨
3、CBOT价格为前一交易日收盘价格，广东玉米价格为前一工作日现货自提价格
4、玉米进口成本核算公式：[(CBOT期价+FOB升贴水)×单位转换系数+海运费]×(1+增值税)×(1+关税)×人民币汇率+港杂费
5、到港完税价和利润按照关税1%计算
6、以上为玉米到岸成本估算，仅供参考

+入SVIP 微信群 第一时间 了解 市场动态

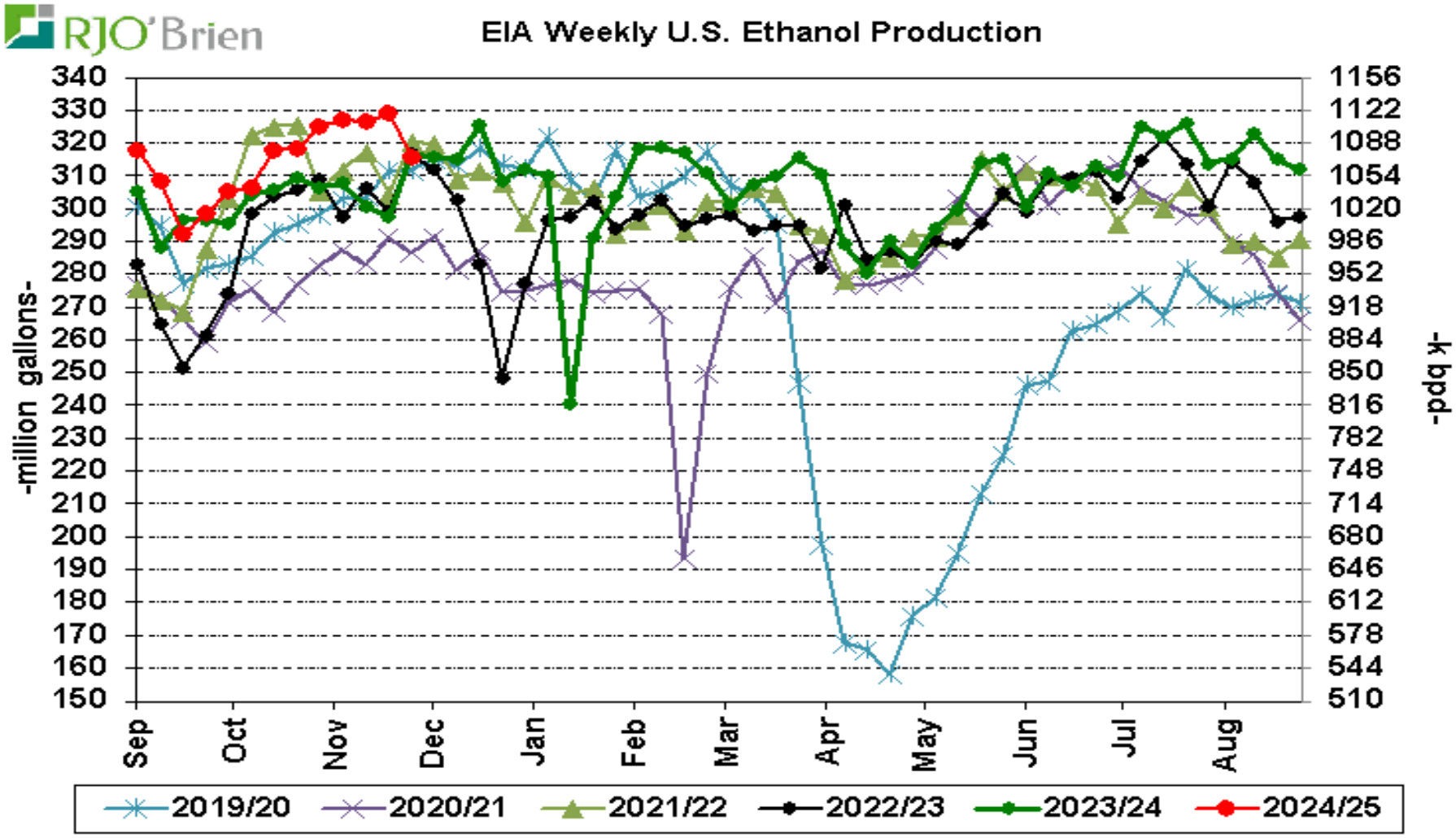
U.S. Annual Corn for Ethanol Usage
美國年度乙醇生產的玉米用量



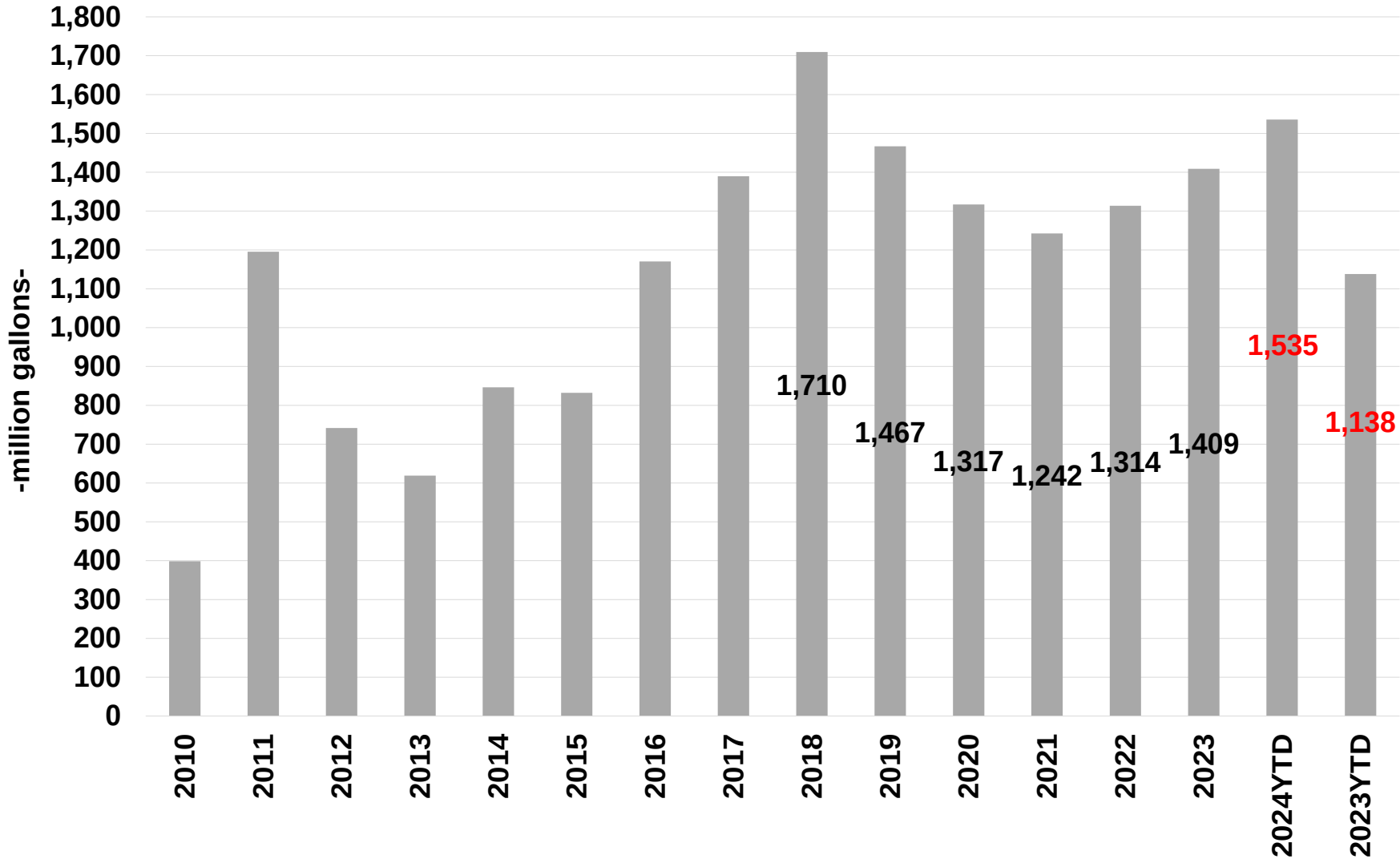
U.S. Monthly Corn for Ethanol Usage Comparison
美國每月乙醇生產的玉米用量比較



EIA Weekly U.S. Ethanol Production
EIA美國週度乙醇產量

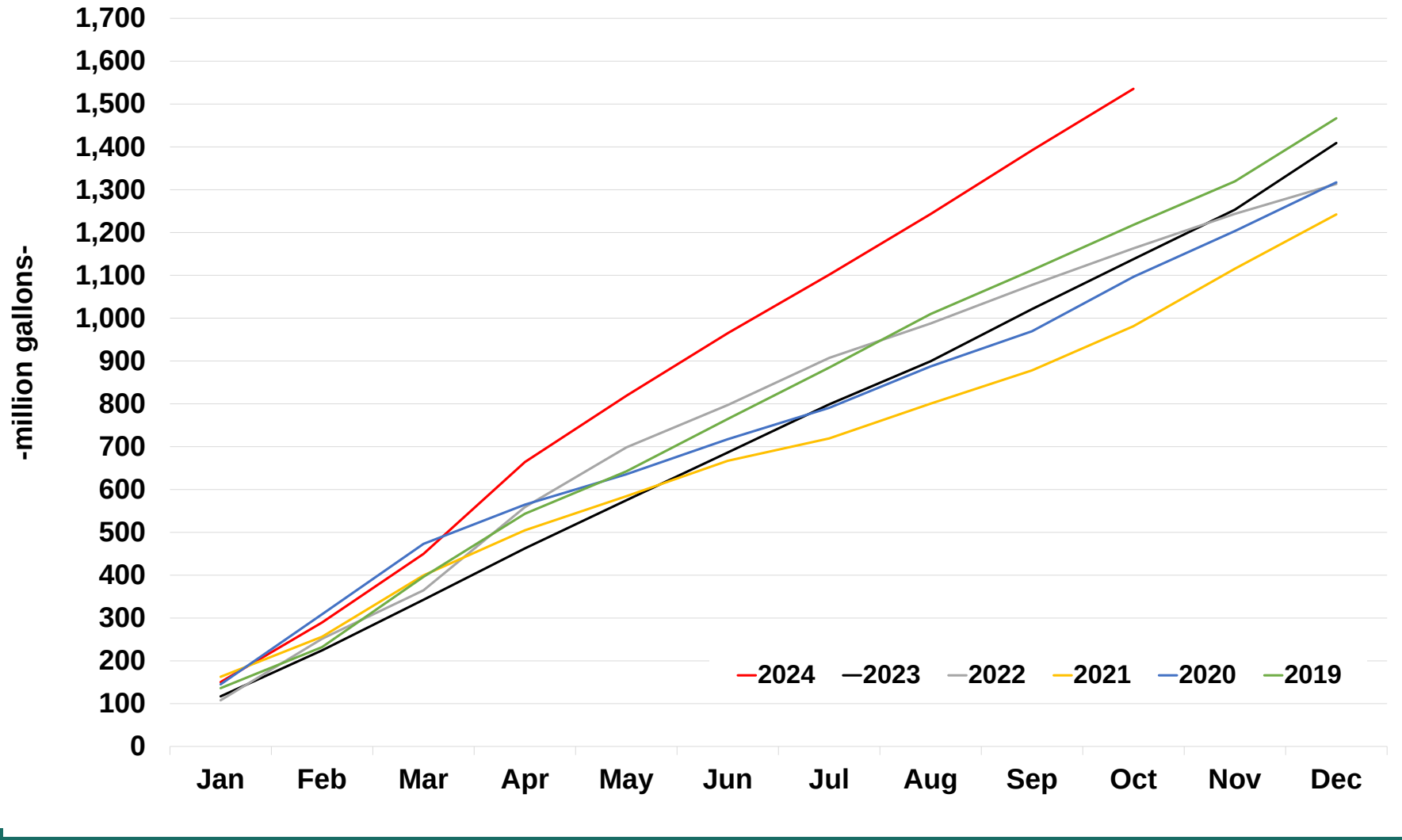


U.S. Annual Ethanol Exports
美國年度乙醇出口量

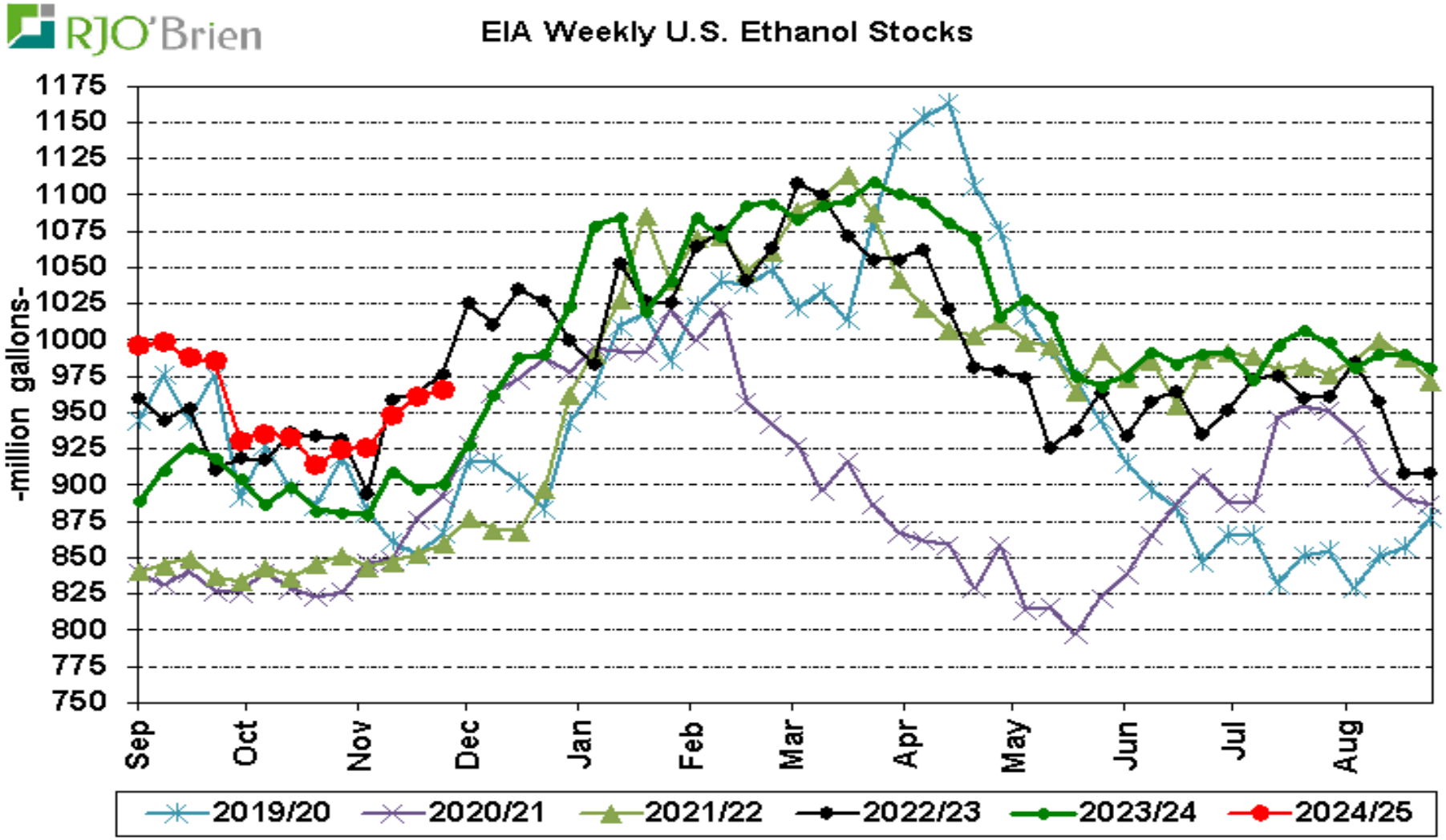


*YTD: Jan-Oct
年度至今：1-10月

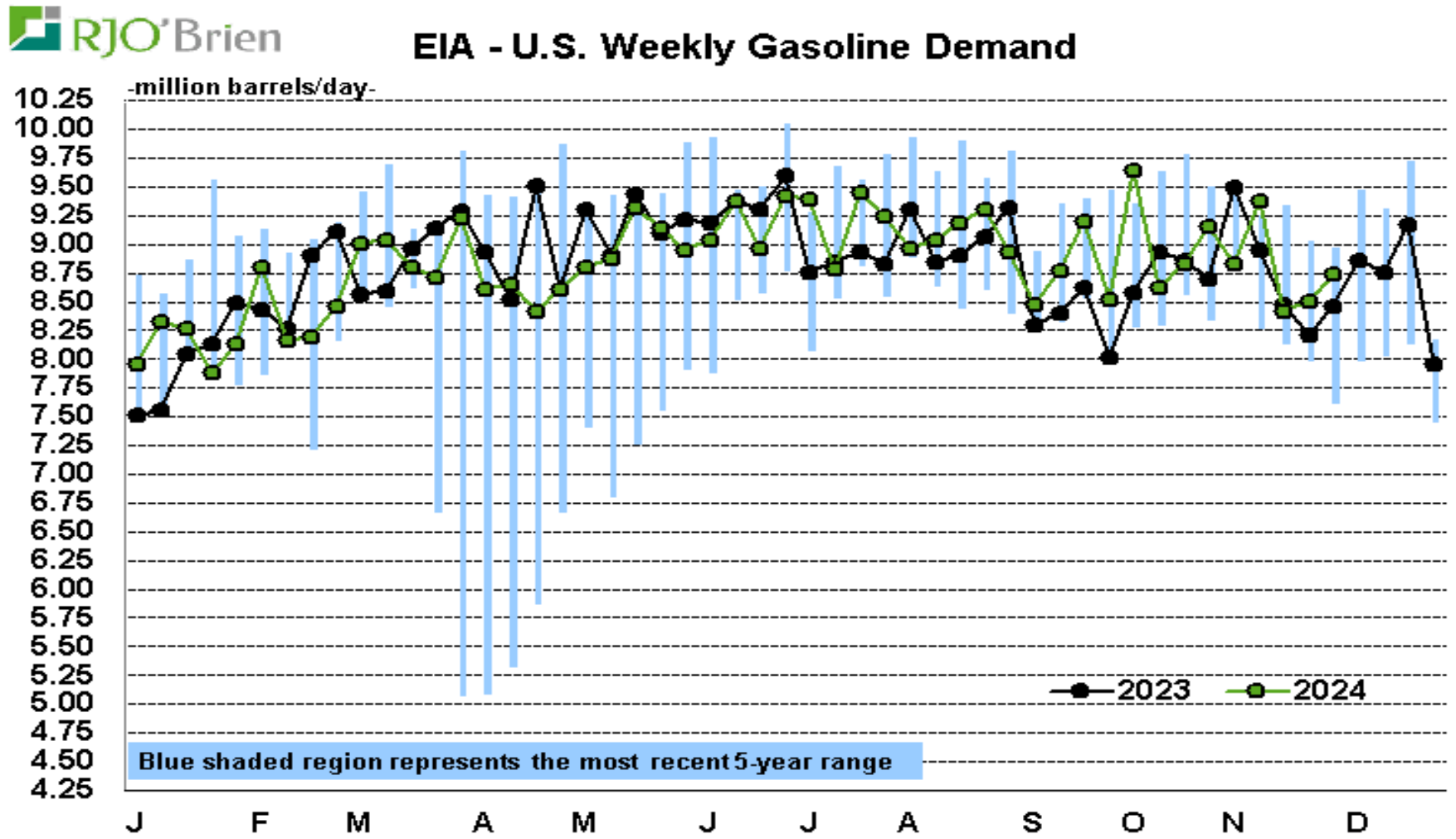
Monthly Progression of Annual U.S. Ethanol Exports
美國乙醇年出口量的每月進展



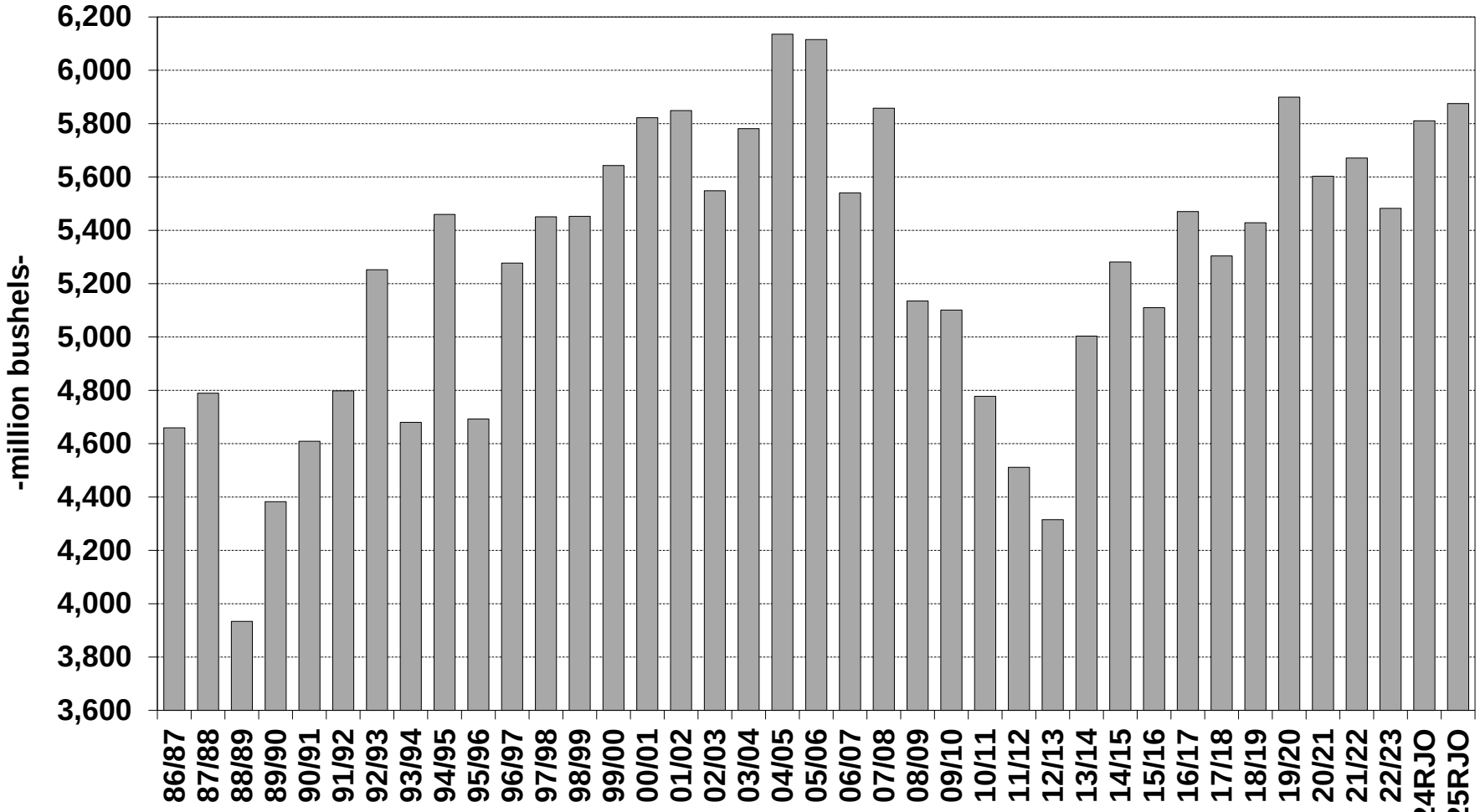
EIA Weekly U.S. Ethanol Stocks
EIA美國每週乙醇庫存



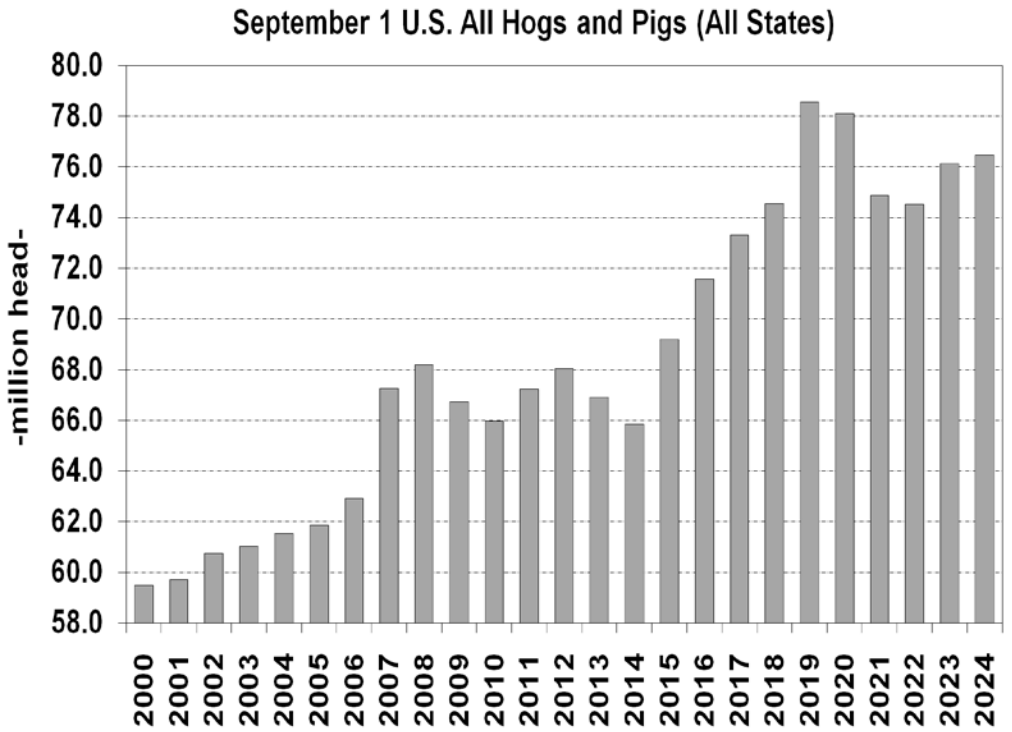
EIA U.S. Weekly Gasoline Demand
EIA美國每週汽油需求量

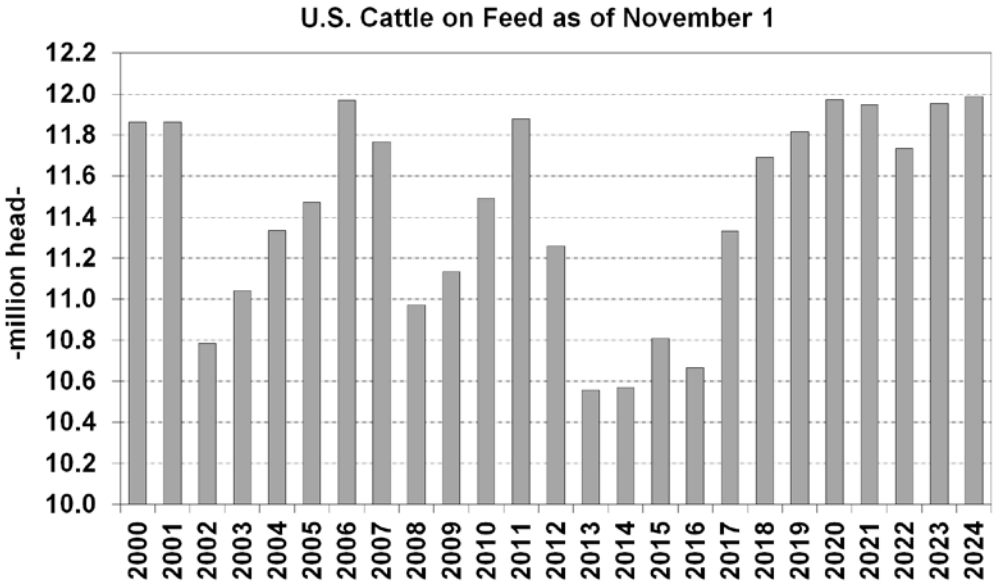


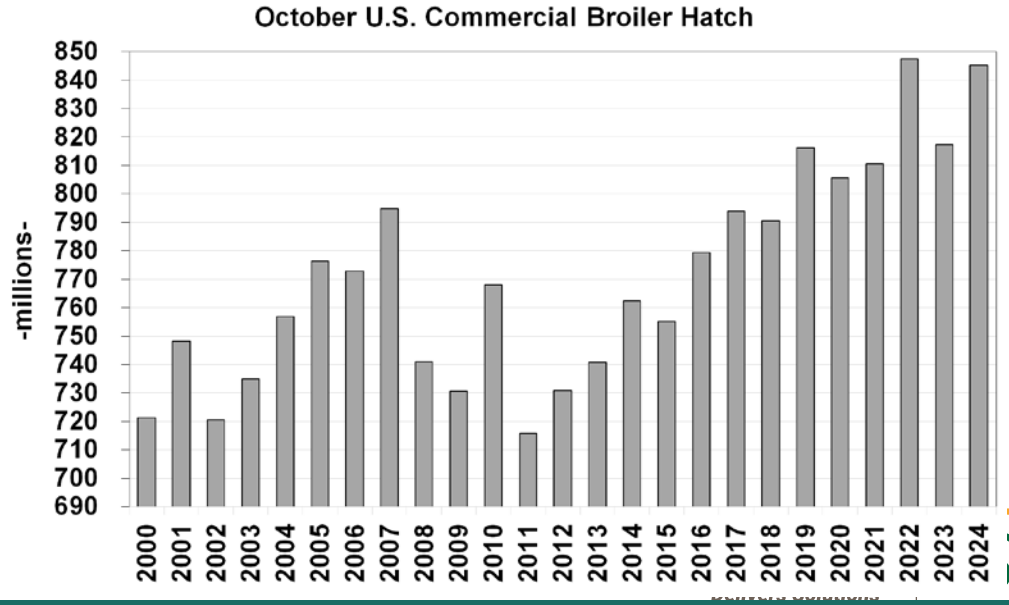
U.S. Annual Corn Feed/Residual Usage
美國玉米年度飼料用/調整用量



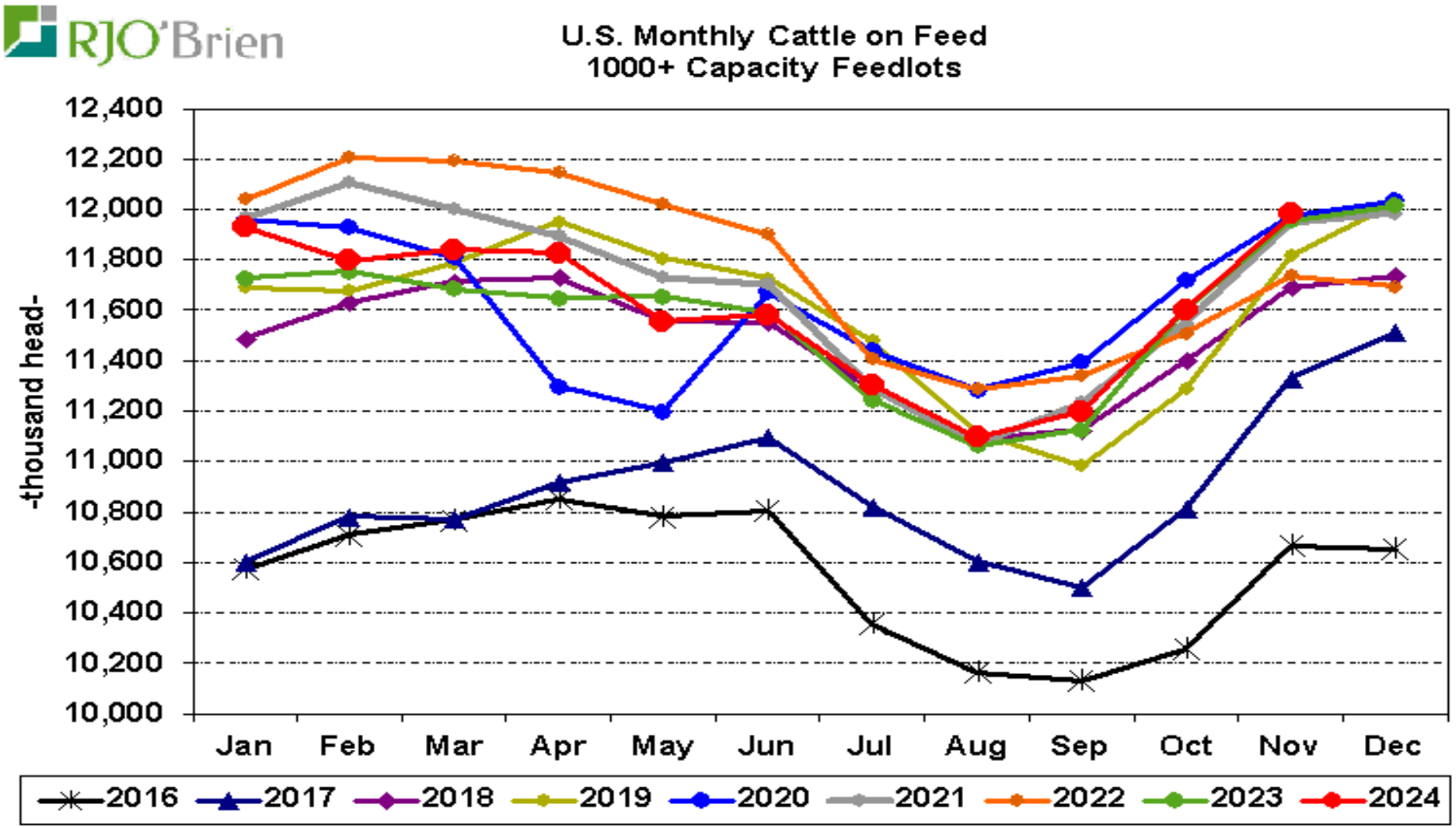
Major U.S. Livestock Numbers
美國主要牲畜存欄量(在養頭數)







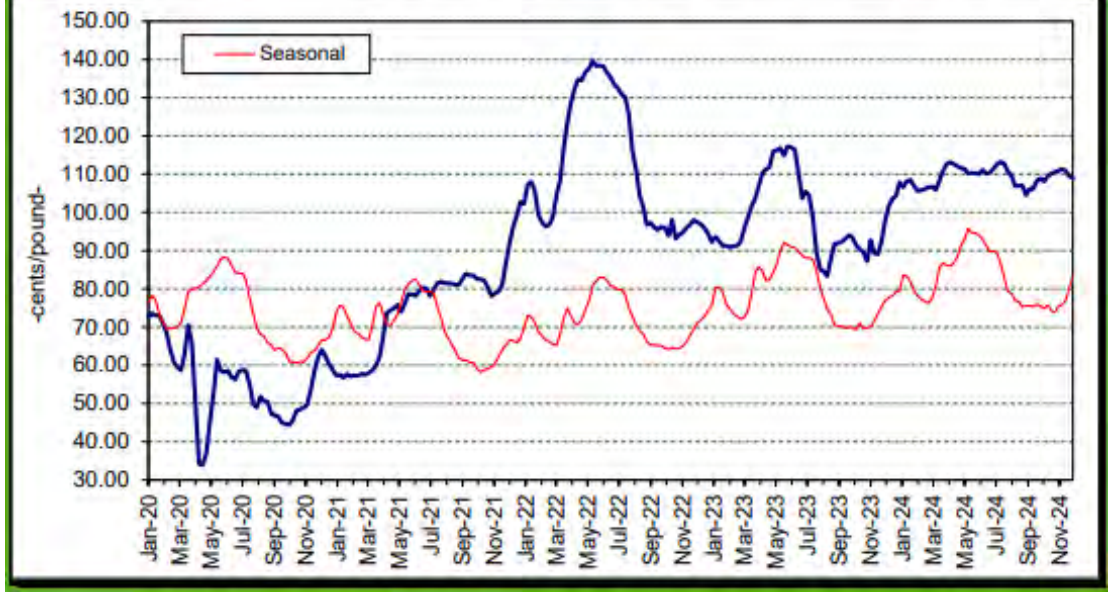
U.S. Monthly Cattle on Feed 1000+ Capacity Feedlots
美國1000頭產能飼養廠飼牛每月(在養頭數)



U.S. Major Livestock Crush Margin
美國主要牲畜養殖利潤

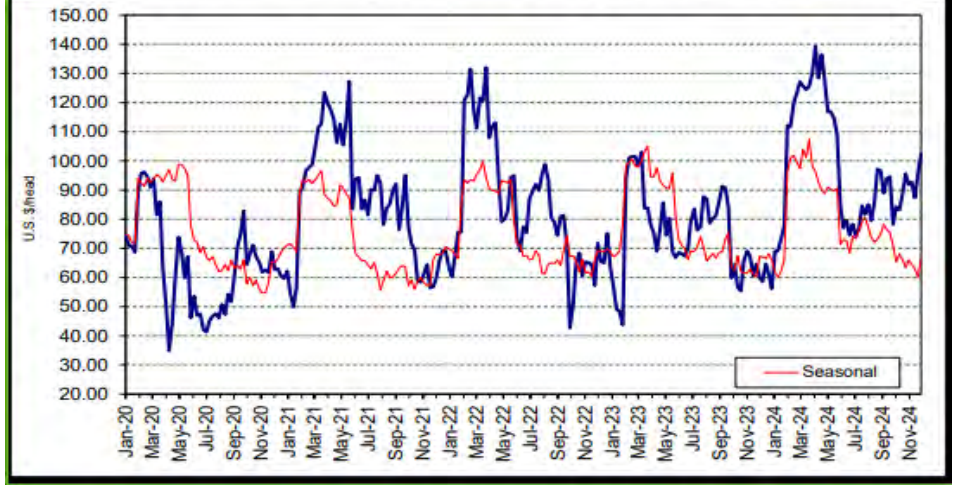
U.S. Composite Broiler Crush Margin

Date	Composite Broiler Price		SBM Futures		Corn Futures		Gross Margin	
	2024	2023	2024	2023	2024	2023	2024	2023
15-Nov-24	129.52	113.67	$291.24	$466.40	425.60	473.60	110.90	89.06
22-Nov-24	128.07	116.69	$289.04	$457.64	427.80	467.70	109.45	92.47
29-Nov-24	127.91	121.30	$298.28	$415.46	430.50	478.40	108.97	97.96



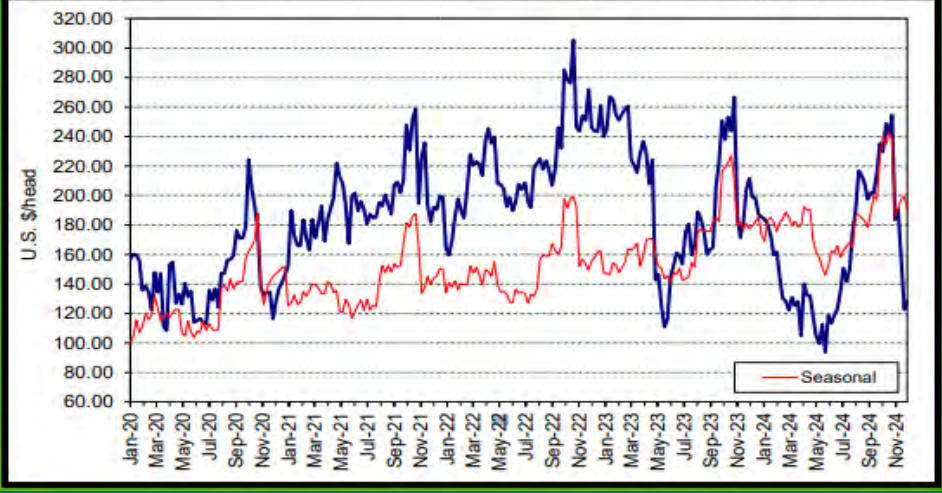
CME Continuation Hog Board Crush

Date	Hog Futures		SBM Futures		Corn Futures		Board Crush	
	2024	2023	2024	2023	2024	2023	2024	2023
19-Nov-24	79.38	68.18	$288.80	$459.70	427.25	470.25	$87.38	$60.51
26-Nov-24	83.08	68.93	$287.70	$449.20	419.50	451.00	$95.31	$64.58
3-Dec-24	87.85	69.40	$295.80	$404.50	432.25	490.25	$102.38	$60.05

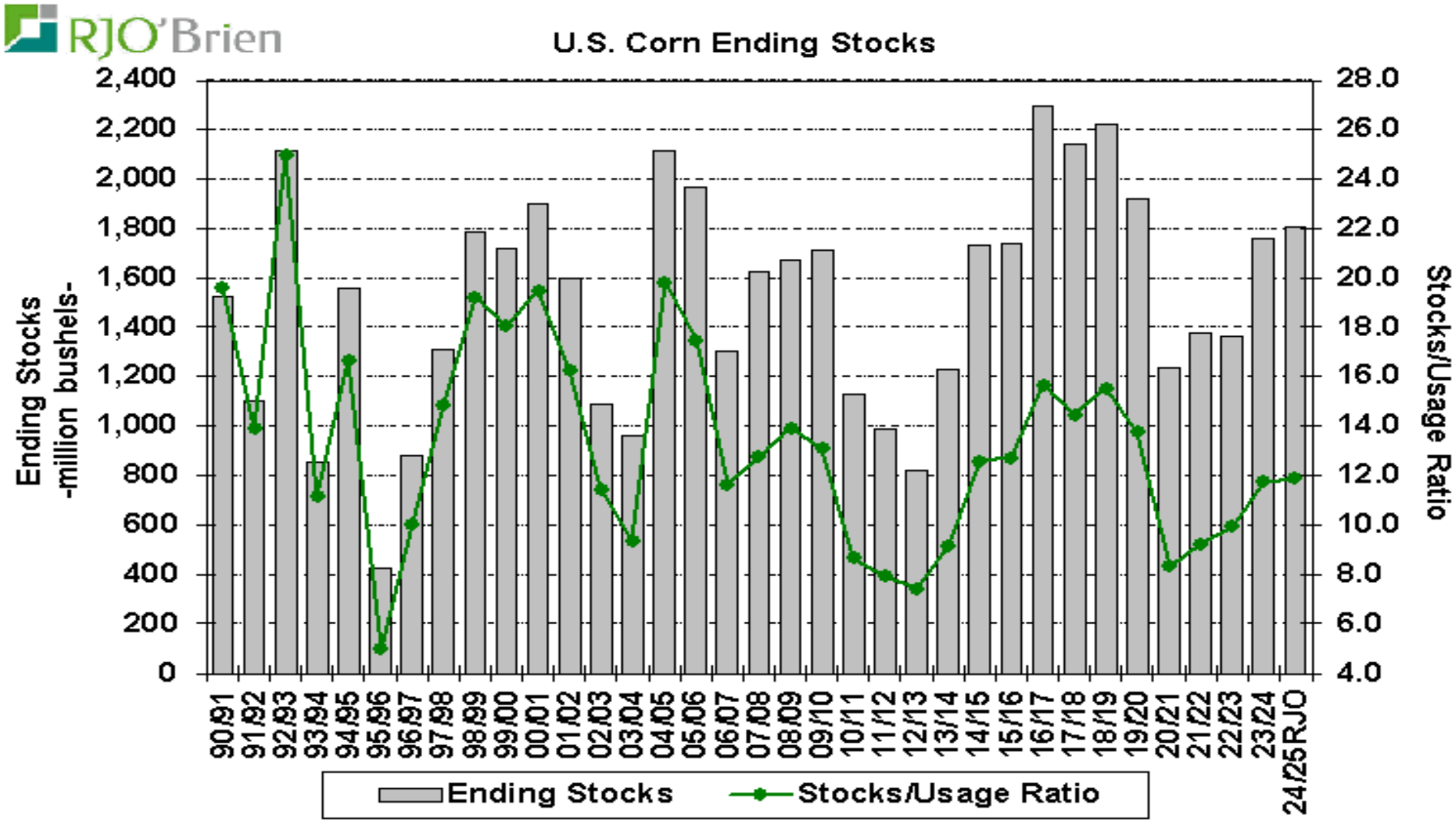


CME Continuation Cattle Board Crush

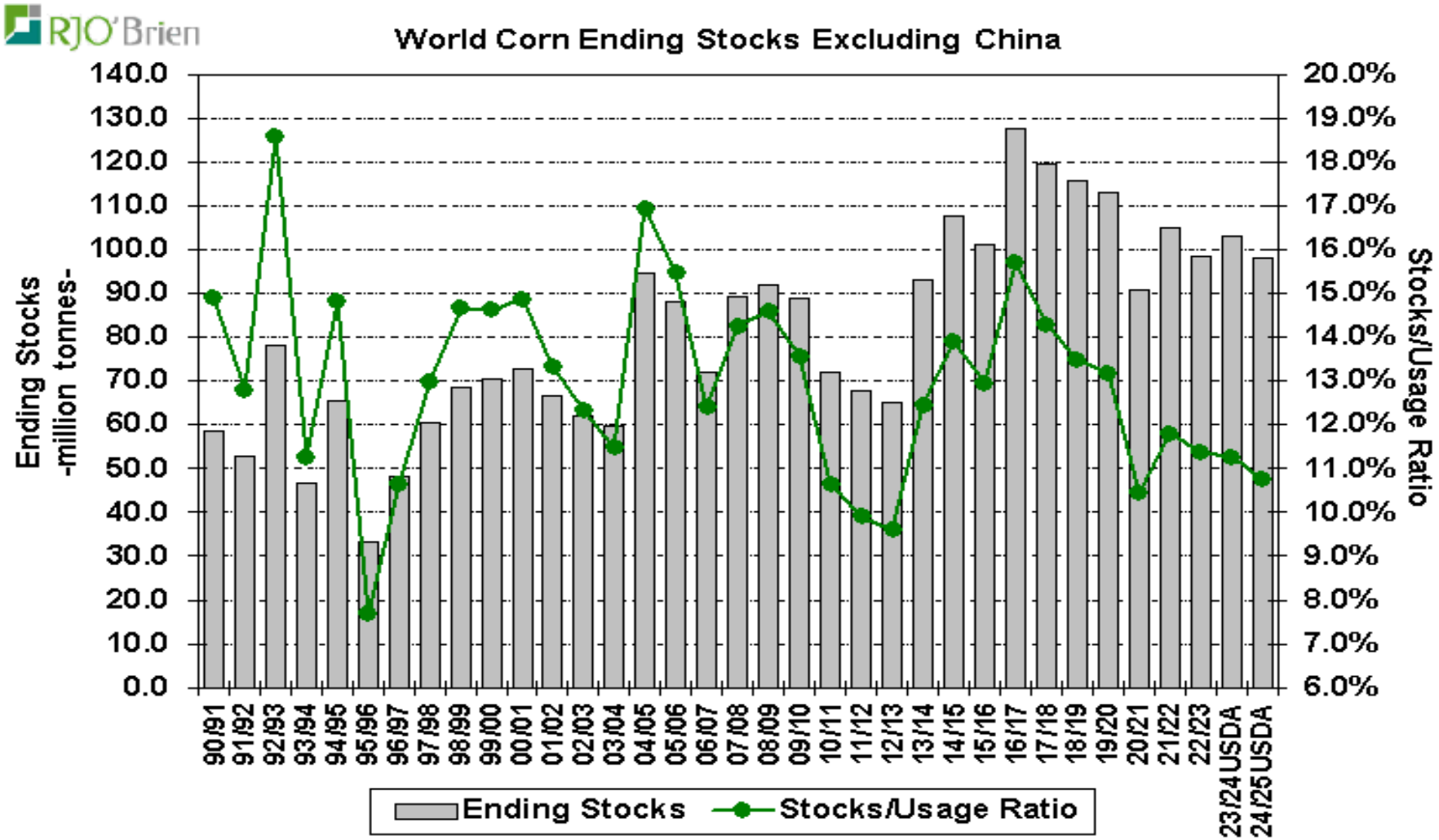
Date	Feeder Cattle Futures		Live Cattle Futures		Corn Futures		Board Crush	
	2024	2023	2024	2023	2024	2023	2024	2023
19-Nov-24	252.000	228.375	184.875	173.825	445.25	499.75	$158.36	$182.04
26-Nov-24	258.100	221.050	185.350	170.675	435.25	485.75	$122.78	$203.99
3-Dec-24	259.300	214.300	186.650	167.600	438.00	501.75	$128.24	$211.56



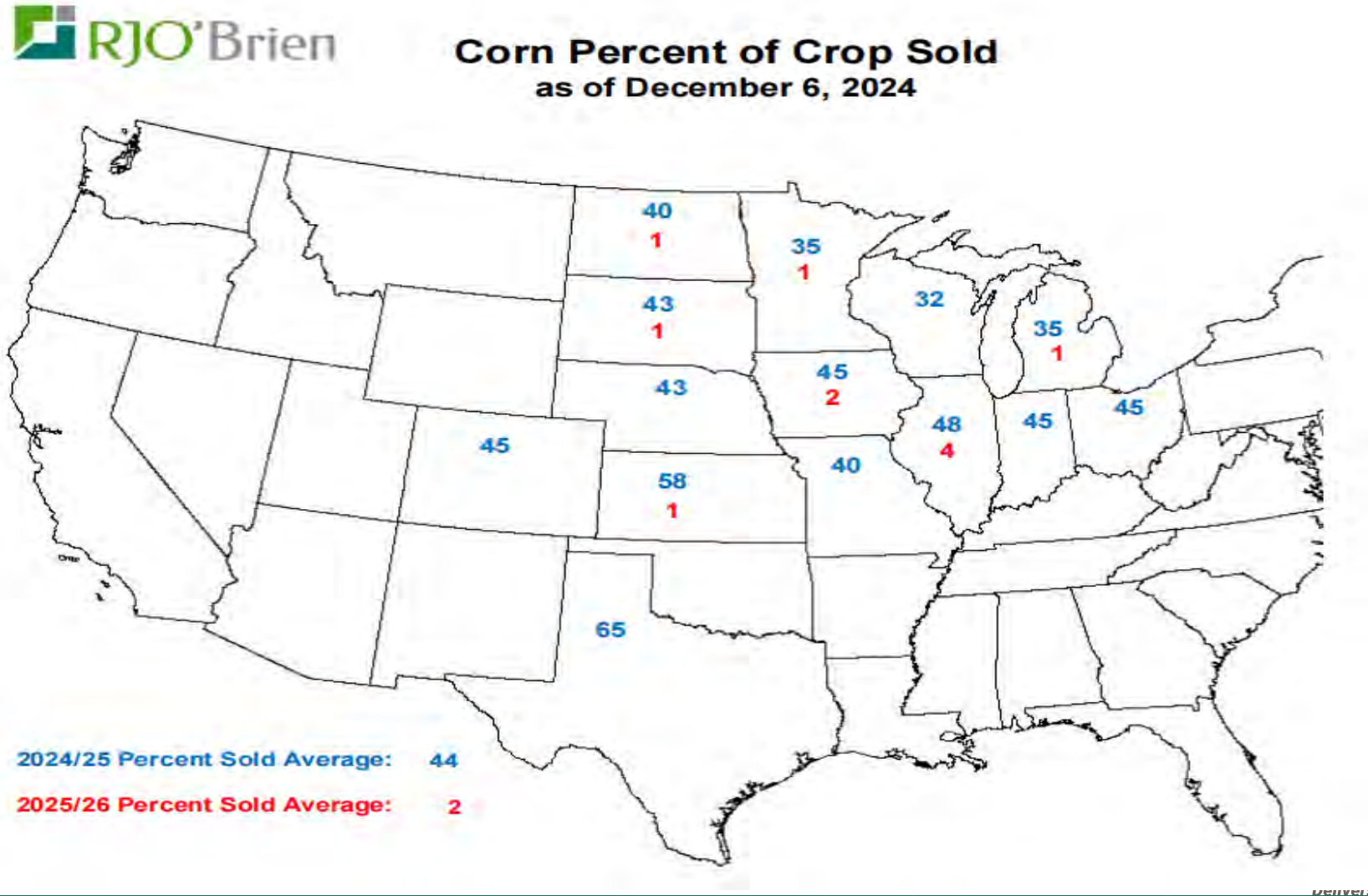
U.S. Corn Ending Stocks
美國玉米年終庫存



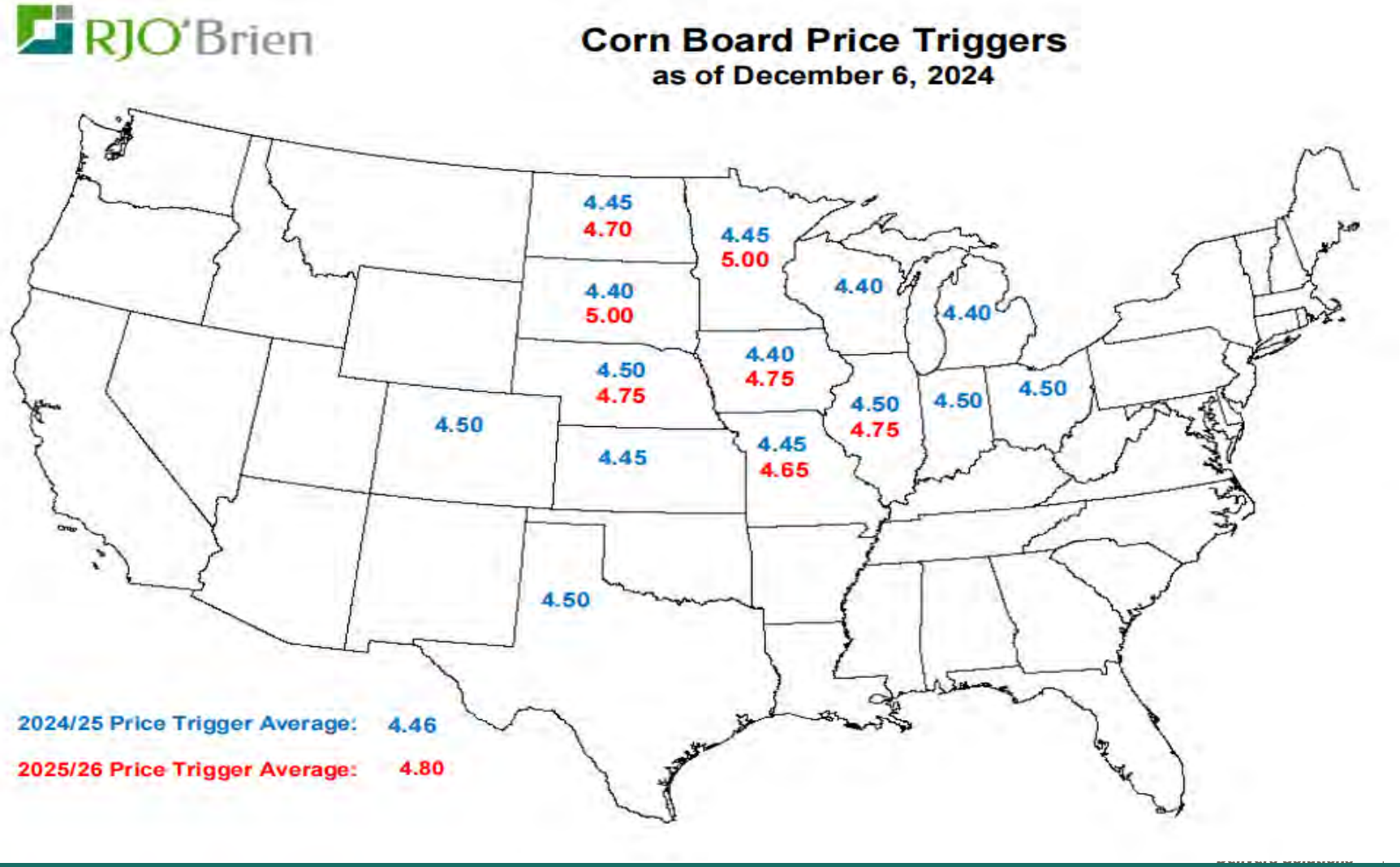
World Corn Ending Stocks Excluding China
全球除中國以外玉米年終庫存



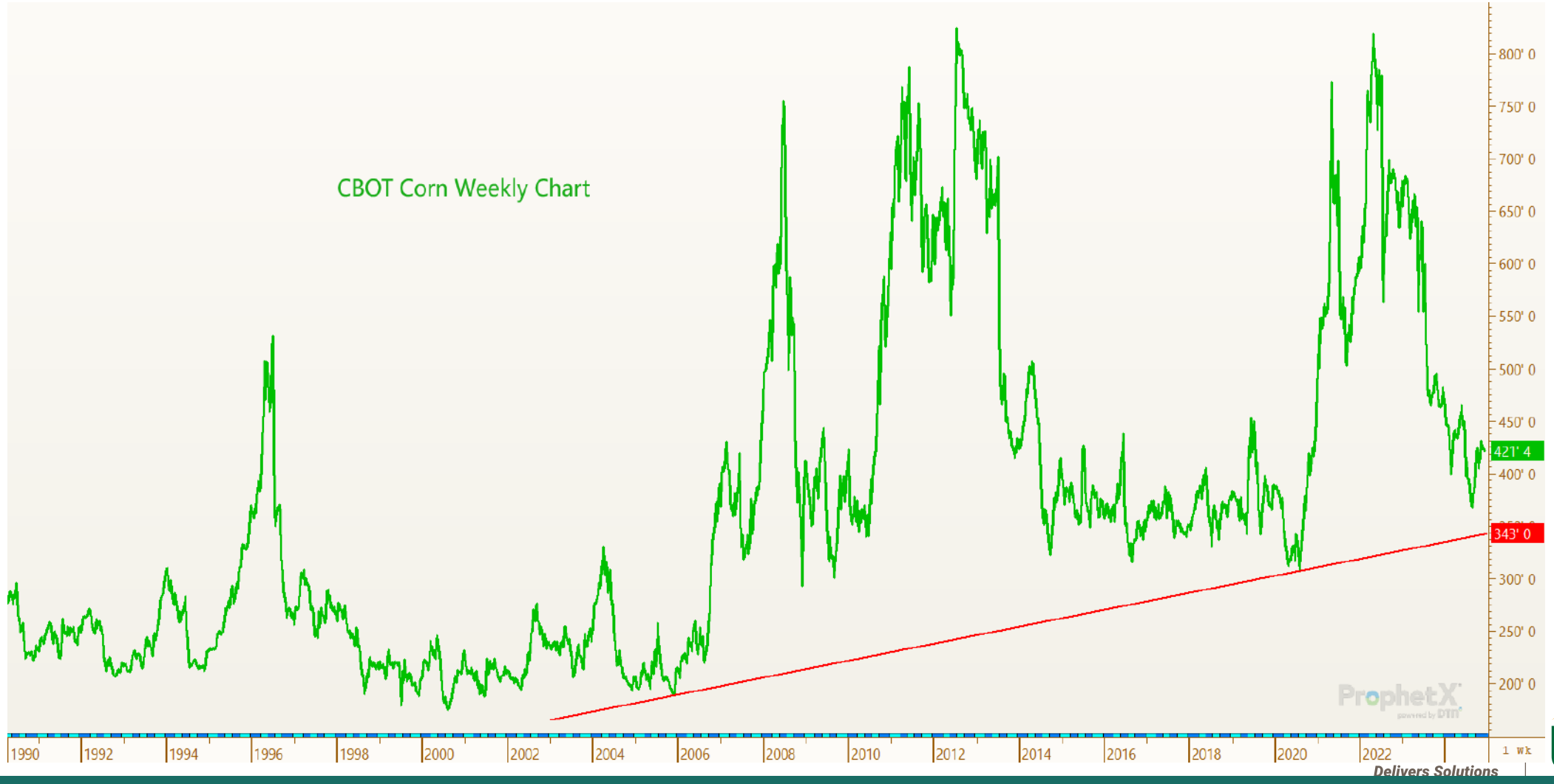
Corn Percent of Crop Sold
美國農民玉米銷售進度-截至2024年12月6日



Corn Board Price Triggers
美國玉米盤面觸發銷售價格-截至2024年12月6日



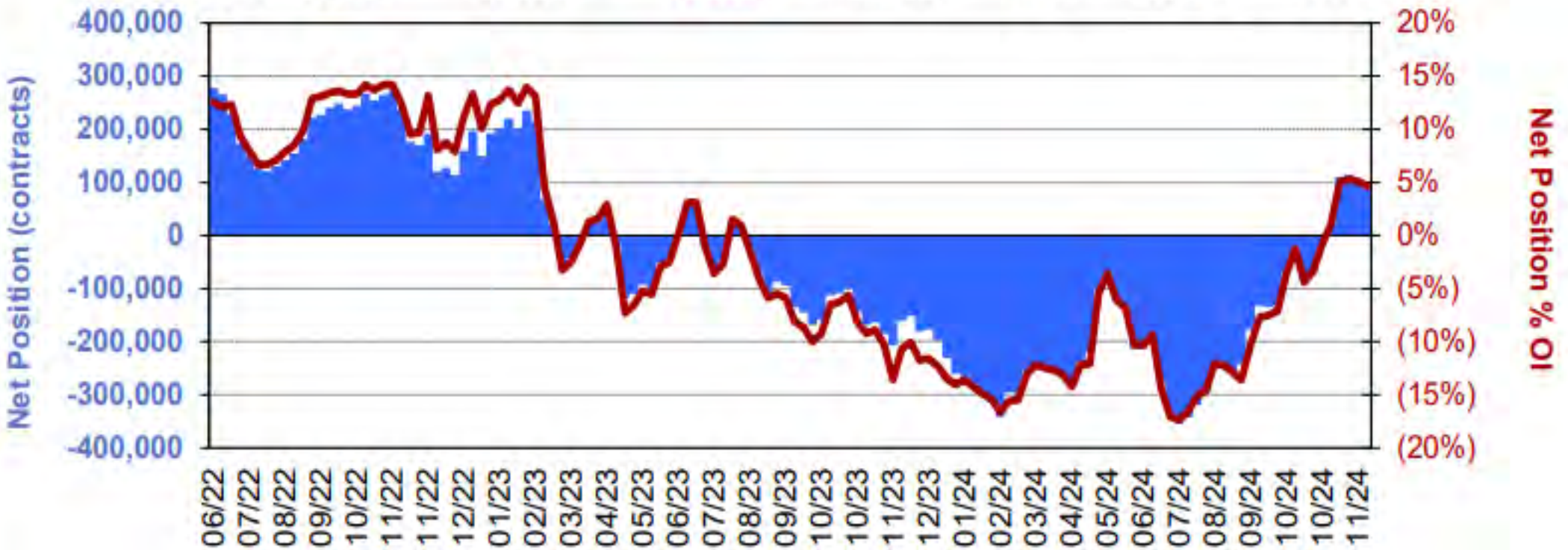
CBOT Corn Weekly Chart
CBOT玉米週線圖



CBOT Corn Disaggregated Futures & Options Combined
-Managed Money-
管理基金玉米期貨和期權持倉量

CBOT Corn Disaggregated Futures & Options Combined

Managed Money		Contracts	Change	Open Int.	% of OI	Record Long	Record Short
26-Nov-24	LONG	97,442	(17,186)	1,903,173	5.1%		
3-Dec-24	LONG	88,220	(9,222)	1,895,924	4.7%	20.9%	17.4%



Soybeans 大豆

USDA US Soybean Revisions Nov vs Oct
USDA11月報告對美國大豆平衡表的調整項

RJO'Brien

USDA US Soybean Revisions

	2023/24			2024/25		
	11-Oct	8-Nov	Change	11-Oct	8-Nov	Change
Area			-Million acres-			
Planted	83.6	83.6	0.0	87.1	87.1	0.0
Harvested	82.3	82.3	0.0	86.3	86.3	0.0
			-Bushels-			
Yield/Harvested acre	50.6	50.6	0.0	53.1	51.7	-1.4
			-Million Bushels-			
Beginning stocks	264	264	0	342	342	0
Production	4,162	4,162	0	4,582	4,461	-121
Imports	21	21	0	15	15	0
Supply, total	4,447	4,447	0	4,939	4,818	-121
Crushings	2,287	2,287	0	2,425	2,410	-15
Exports	1,695	1,695	0	1,850	1,825	-25
Seed	78	78	0	78	78	0
Residual	45	45	0	36	35	-1
Use, total	4,105	4,105	0	4,389	4,348	-41
Ending stocks	342	342	0	550	470	-80
Average Farm Price	$12.40	$12.40	$0.00	$10.80	$10.80	$0.00

US Soybean Supply/Demand Balance
美國大豆平衡表

RJO'Brien

U.S. Soybean Supply/Demand Balance

September/August; thousand acres; million bushels

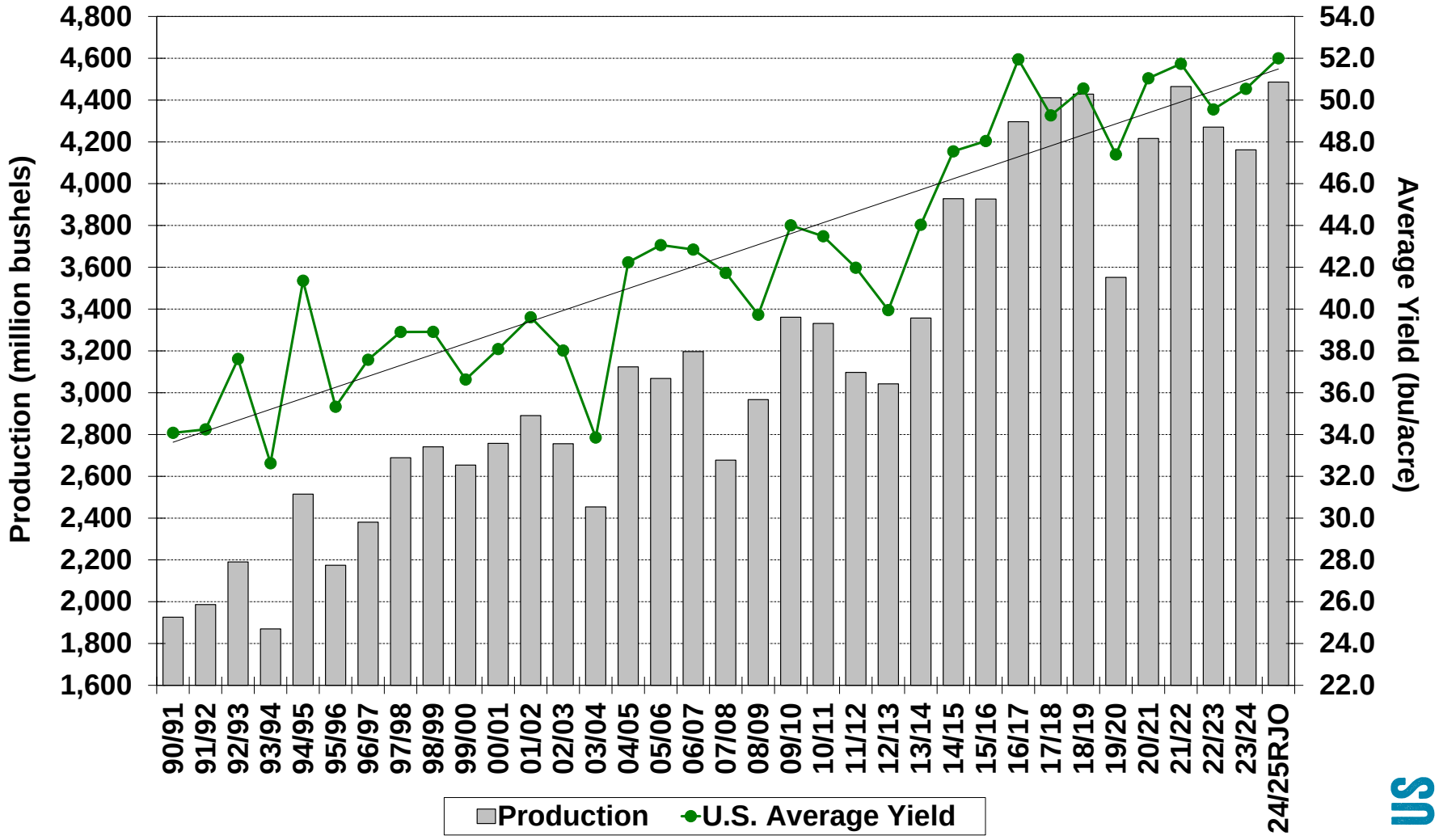
	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	RJO 24/25	USDA 11/08 24/25
Acres Planted	83,296	82,660	83,453	90,162	89,167	76,100	83,354	87,195	87,450	83,600	87,100	87,100
% Harvested	99.2%	98.9%	99.1%	99.3%	98.2%	98.5%	99.1%	99.0%	98.5%	98.5%	99.0%	99.0%
Acres Harvested	82,611	81,742	82,706	89,542	87,594	74,939	82,603	86,292	86,174	82,356	86,271	86,271
Average Yield	47.5	48.0	51.9	49.3	50.6	47.4	51.0	51.7	49.6	50.5	52.0	51.7
Carryin	92	191	197	302	438	925	539	257	274	264	342	342
Production	3,928	3,927	4,297	4,412	4,428	3,552	4,216	4,465	4,270	4,162	4,486	4,461
Imports	33	24	22	22	14	15	20	16	25	21	20	15
Total Supply	4,053	4,141	4,515	4,735	4,880	4,492	4,775	4,737	4,569	4,447	4,848	4,818
Crush	1,874	1,886	1,901	2,055	2,092	2,165	2,141	2,204	2,212	2,287	2,400	2,410
Exports	1,842	1,943	2,166	2,134	1,753	1,683	2,266	2,152	1,980	1,695	1,800	1,825
Seed/Feed	81	81	86	85	71	78	80	79	75	78	77	78
Residual	66	35	60	23	39	29	31	28	39	45	40	35
Total Usage	3,863	3,944	4,214	4,297	3,955	3,954	4,518	4,463	4,305	4,105	4,317	4,348
Carryout	191	197	302	438	925	539	257	274	264	342	531	470
Stocks/Usage	4.9%	5.0%	7.2%	10.2%	23.4%	13.6%	5.7%	6.1%	6.1%	8.3%	12.3%	10.8%

RJO預期美豆最終出口量會略低於 USDA 當前 預測的 18.25 億英斗，我們預測出口量為 18 億蒲(英斗)。

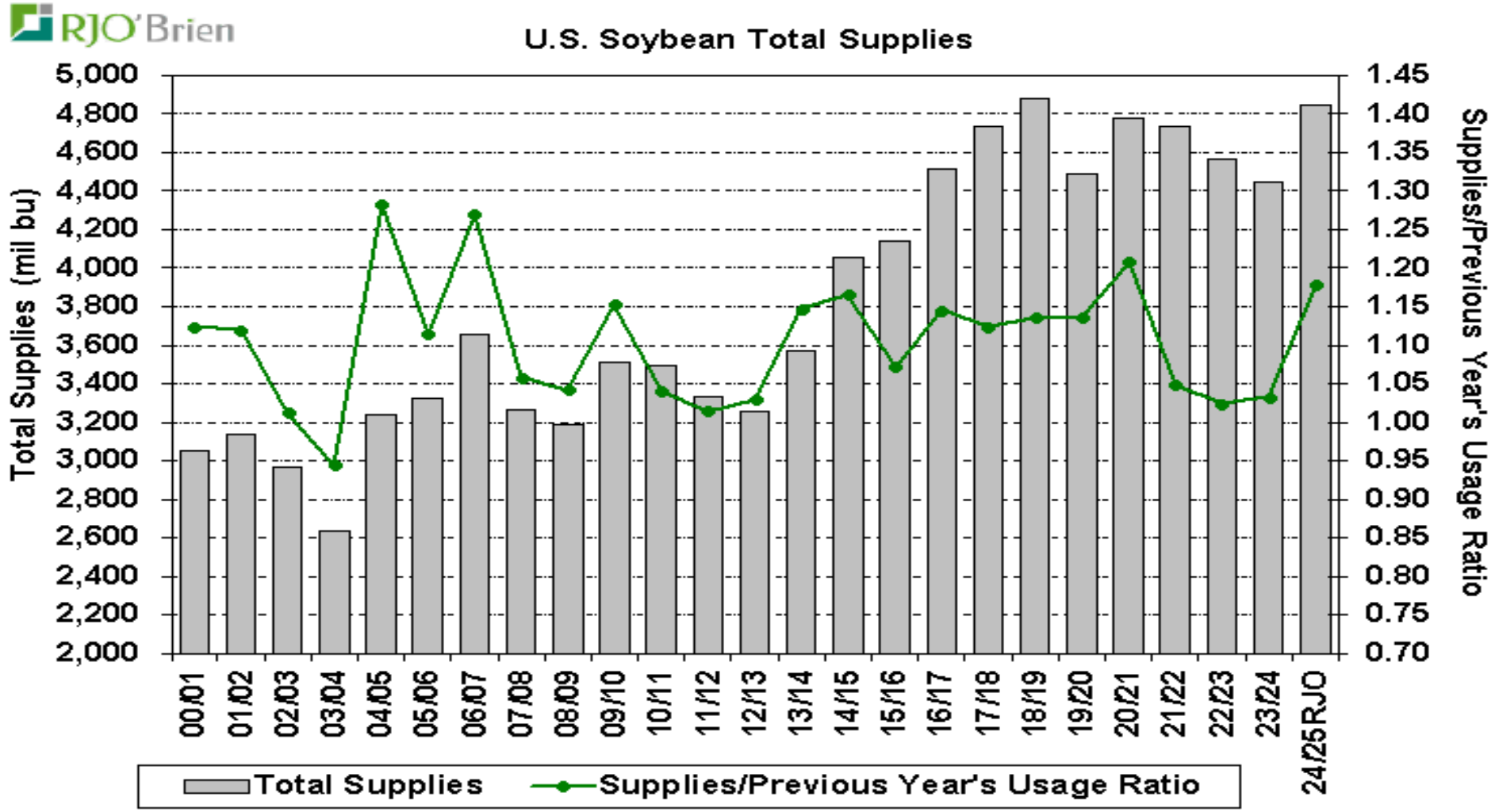
RJO預期美國年度大豆壓榨量為 24 億蒲(英斗)。低於USDA當前的24.1 億蒲(英斗)

RJO預期美豆 24/25 年度年終庫存為 5.31 億 蒲(英斗)，相比 USDA 11月預測為 4.7 億蒲(英斗)。

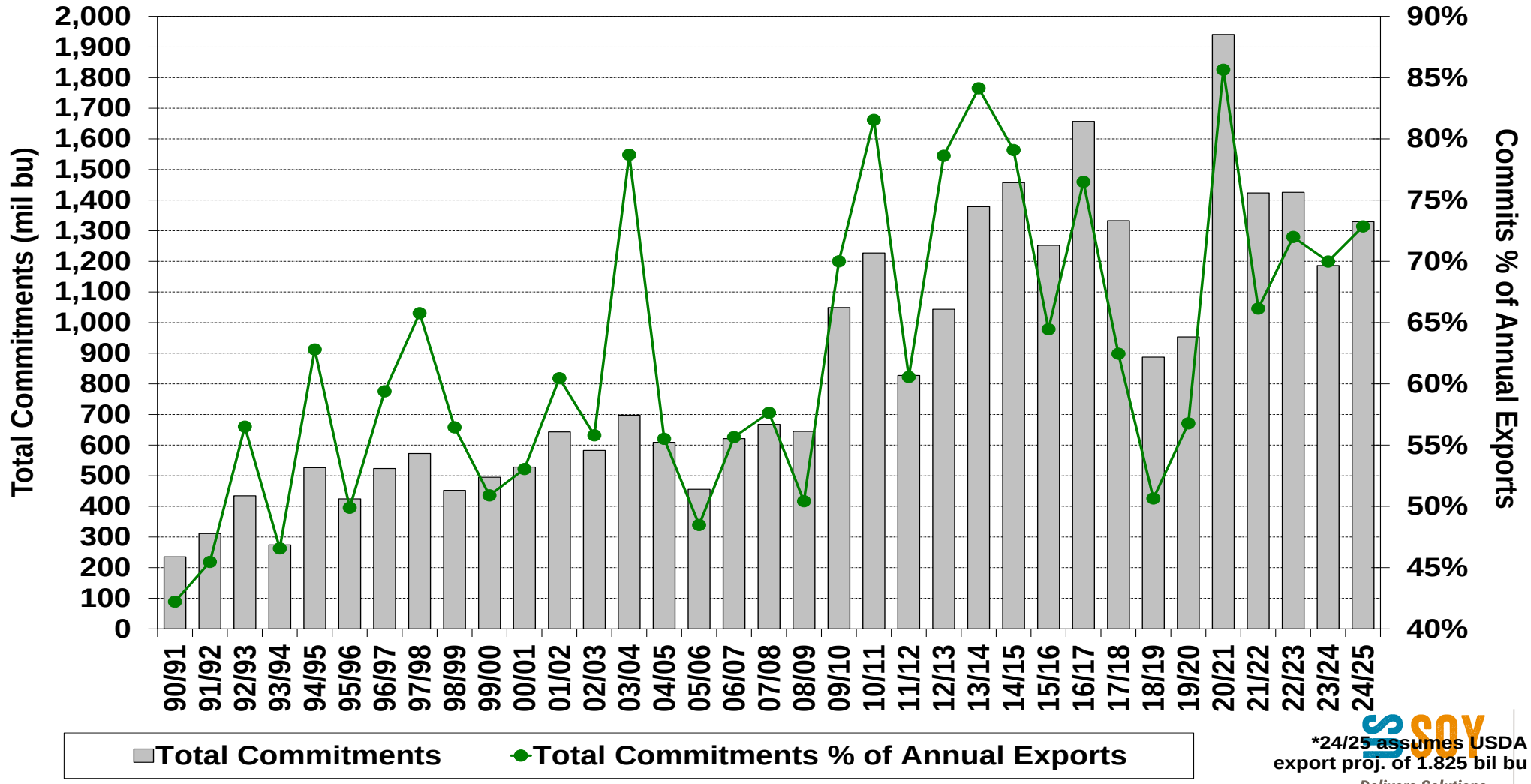
U.S. Soybean Production and Yield
美國大豆產量和單產



U.S. Soybean Total Supplies
美國大豆總供應量



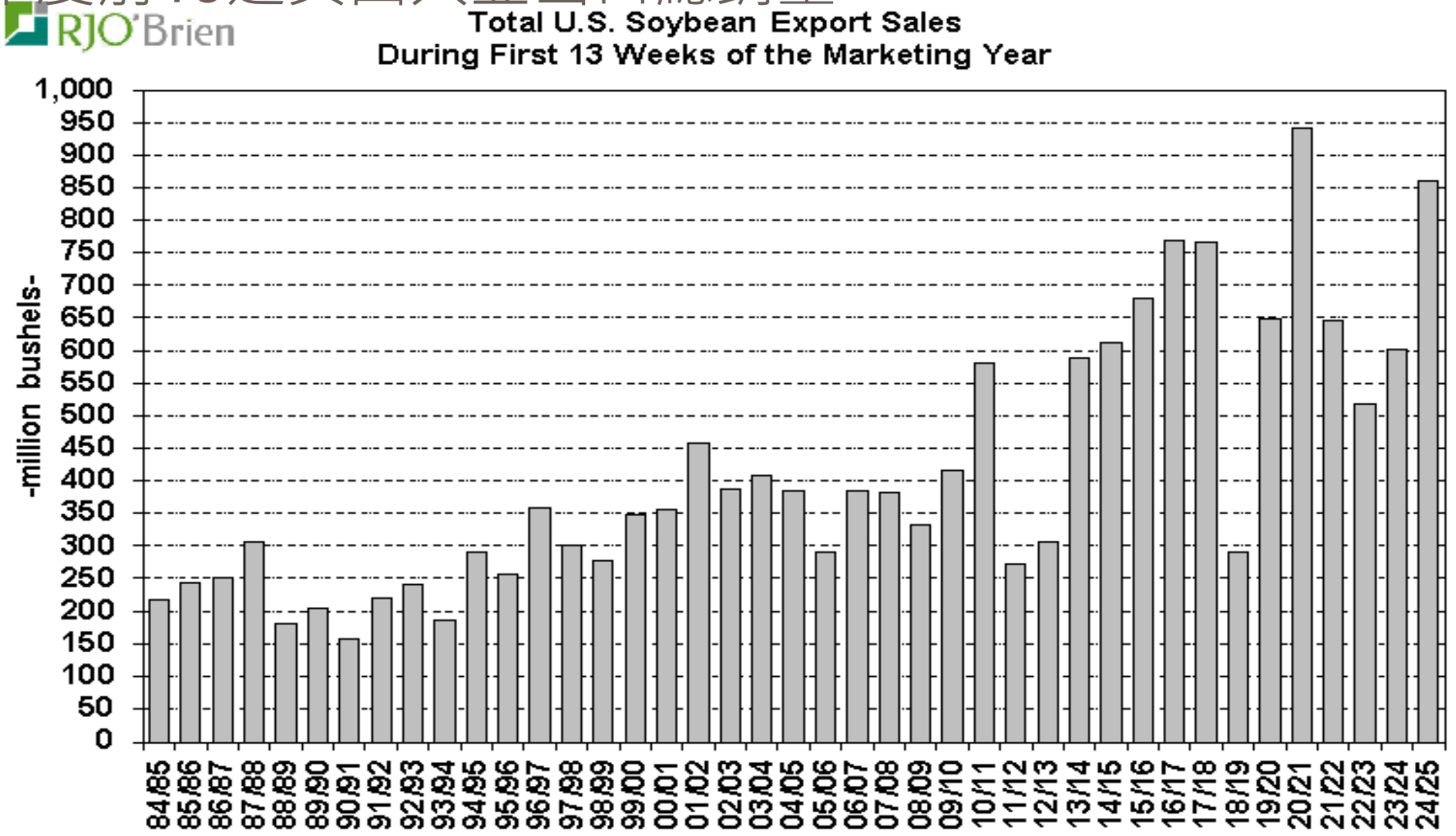
U.S. Soybean Total Export Commitments -as of late November-
美國截至11月底大豆出口總銷量



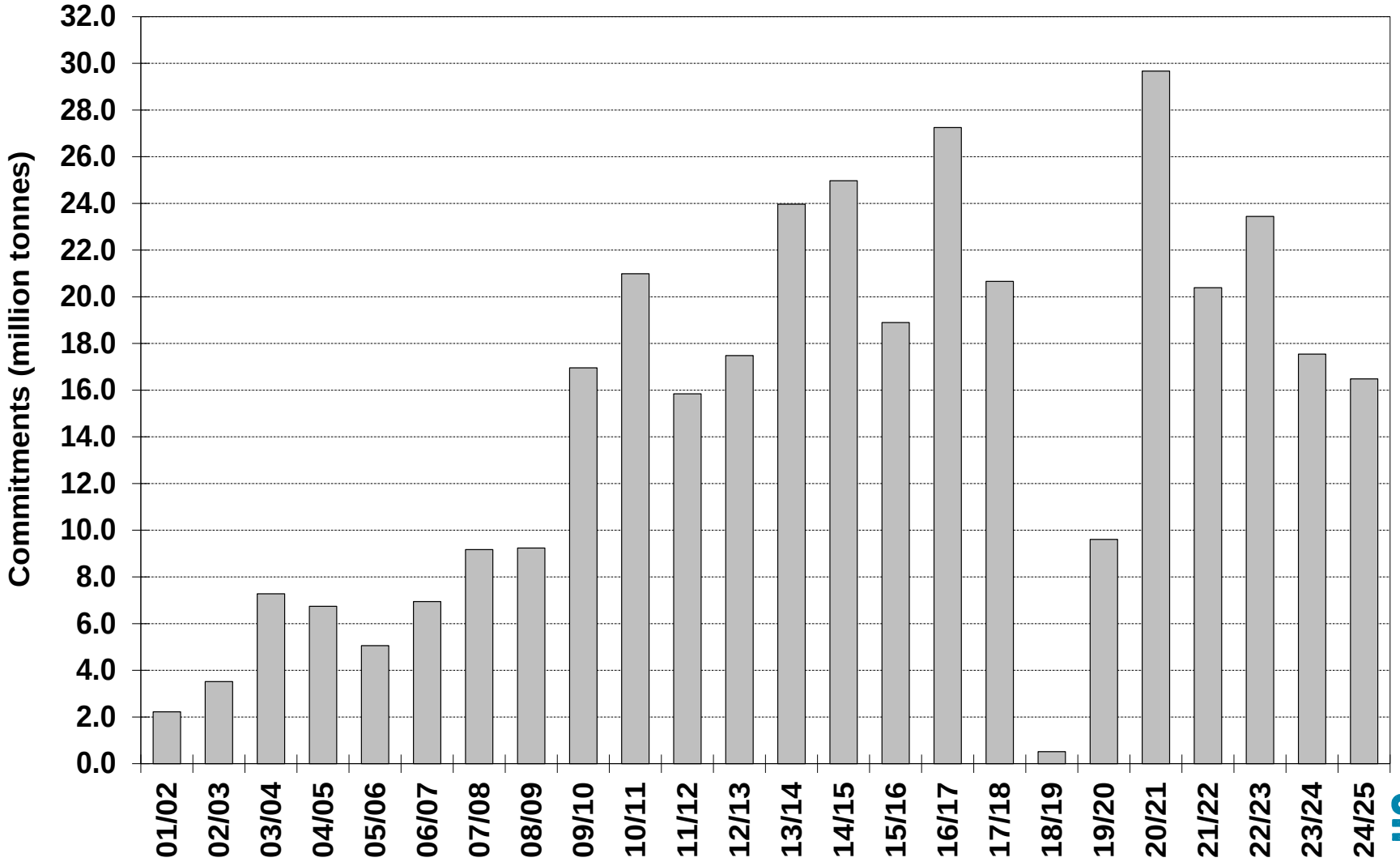
*24/25 assumes USDA export proj. of 1.825 bil bu

U.S. Soybean Total Export Sales During First 13 Weeks of Marketing Year
市場年度前13週美國大豆出口總銷量

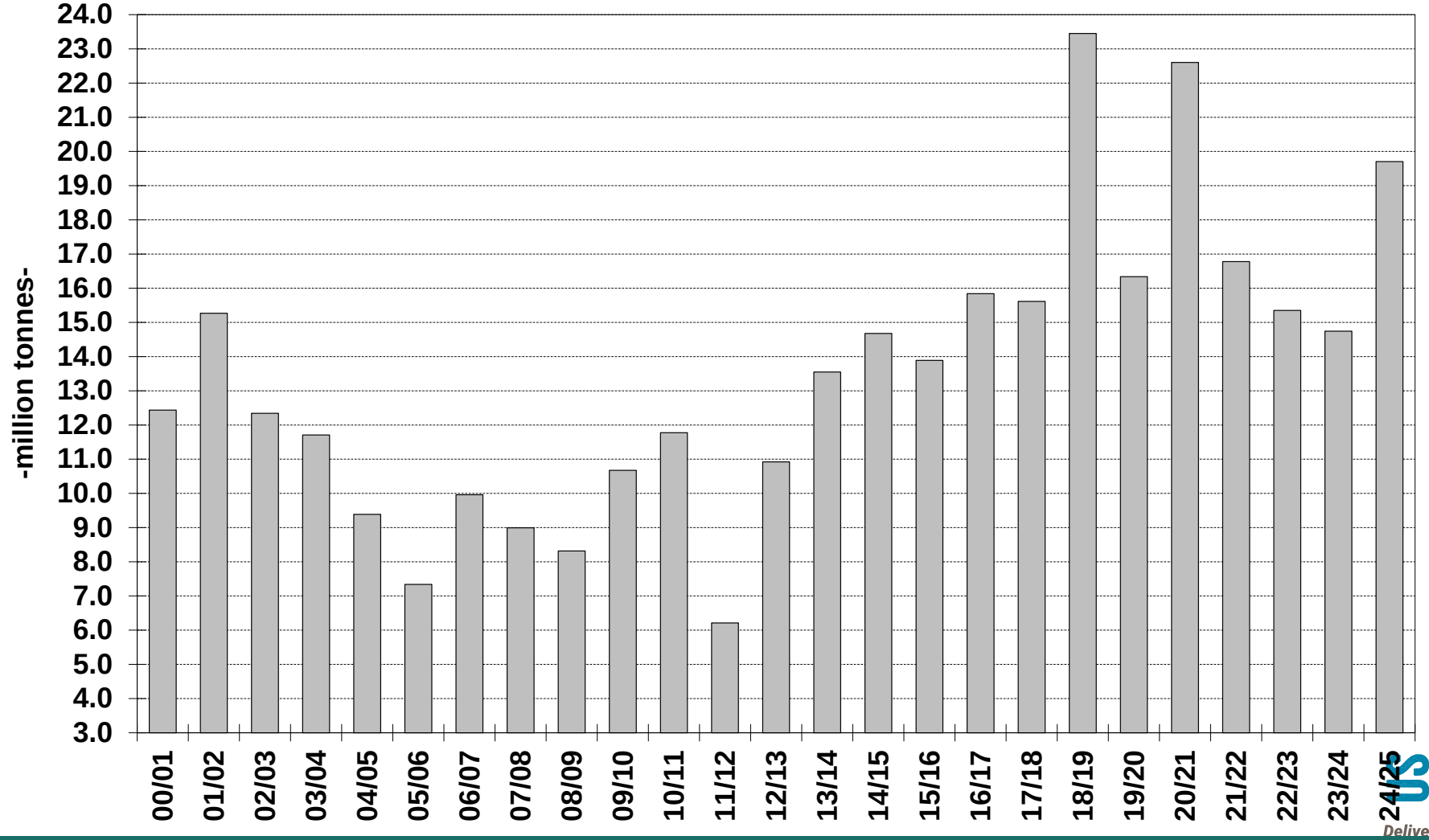
RJO'Brien



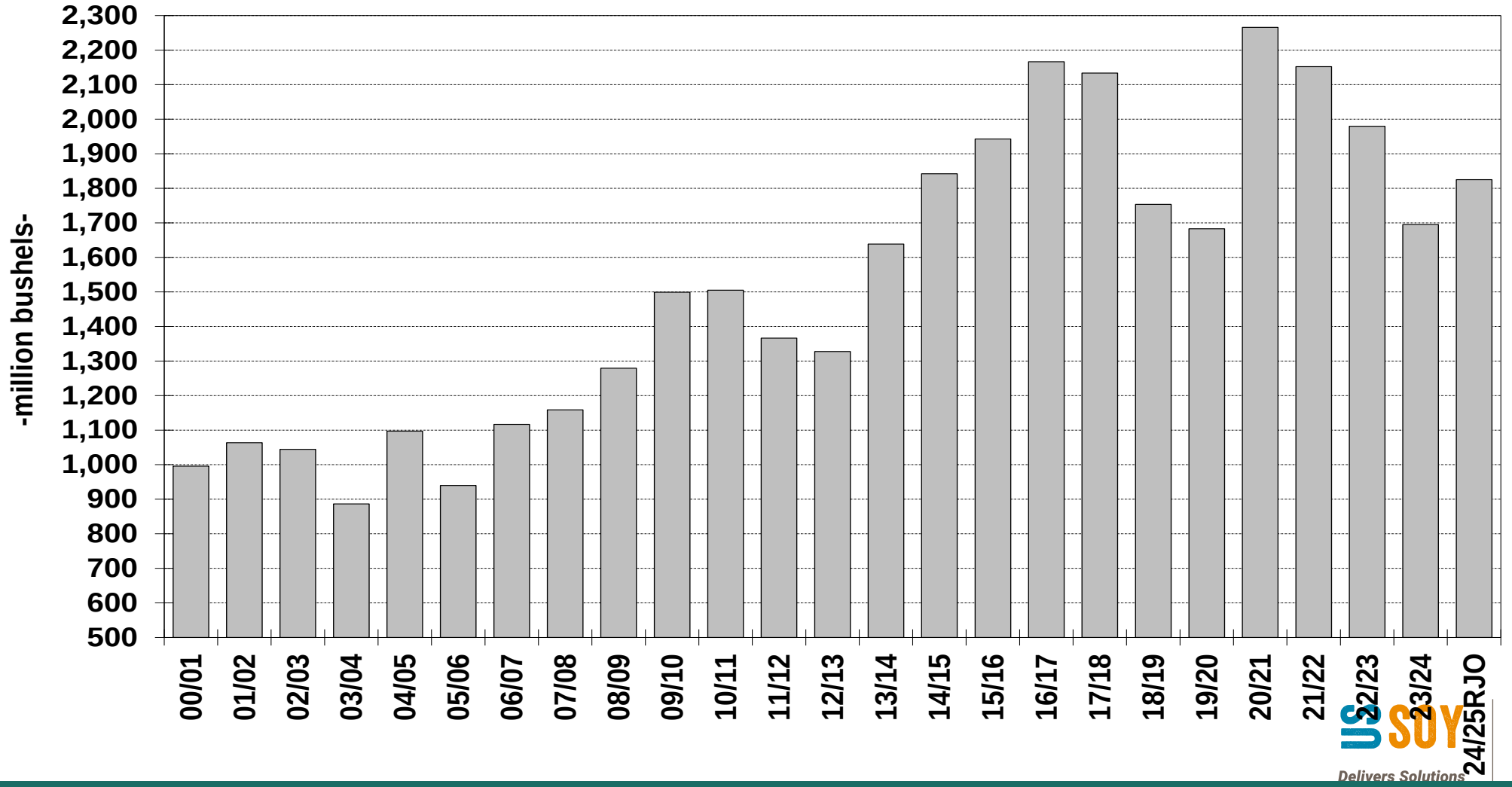
U.S. Soybeans Export Sales to China -as of late November-
美國大豆至中國出口總銷量-截至11月底



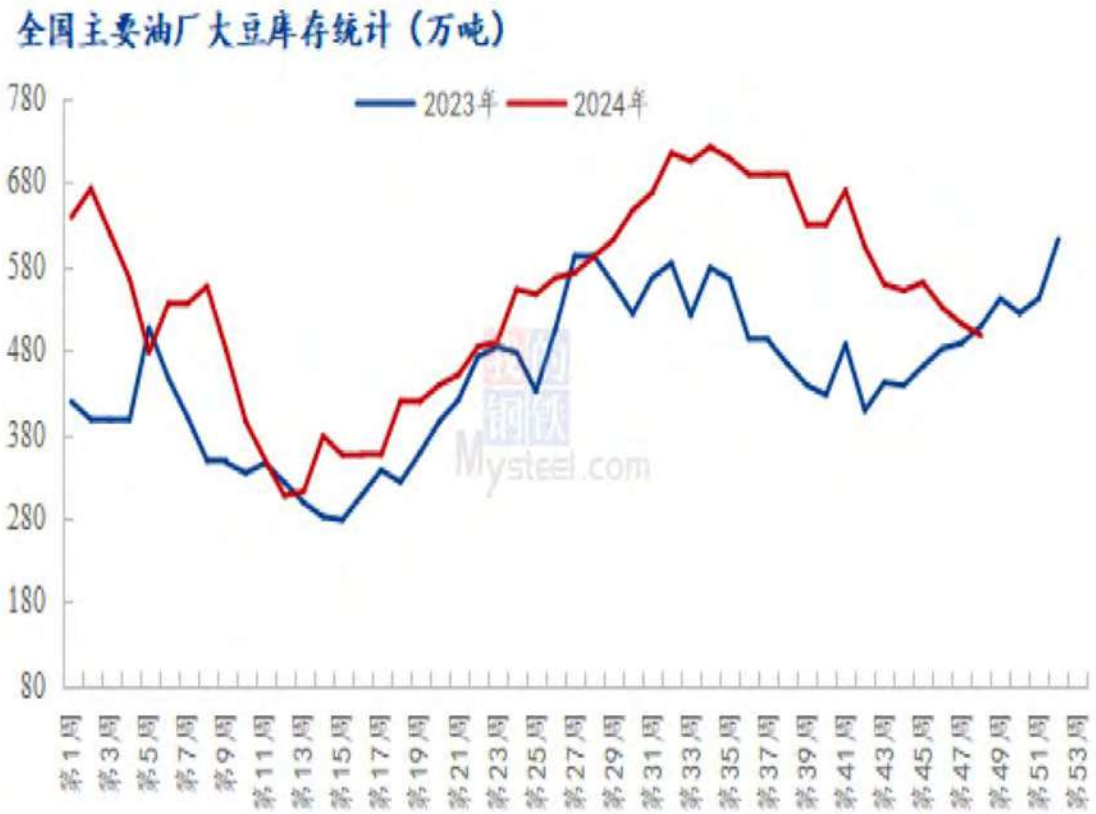
U.S. Soybean Export Sales to All Non-Chinese Destinations
-as of mid-October-
美國大豆至中國以外地區出口總銷量-截至10月中旬

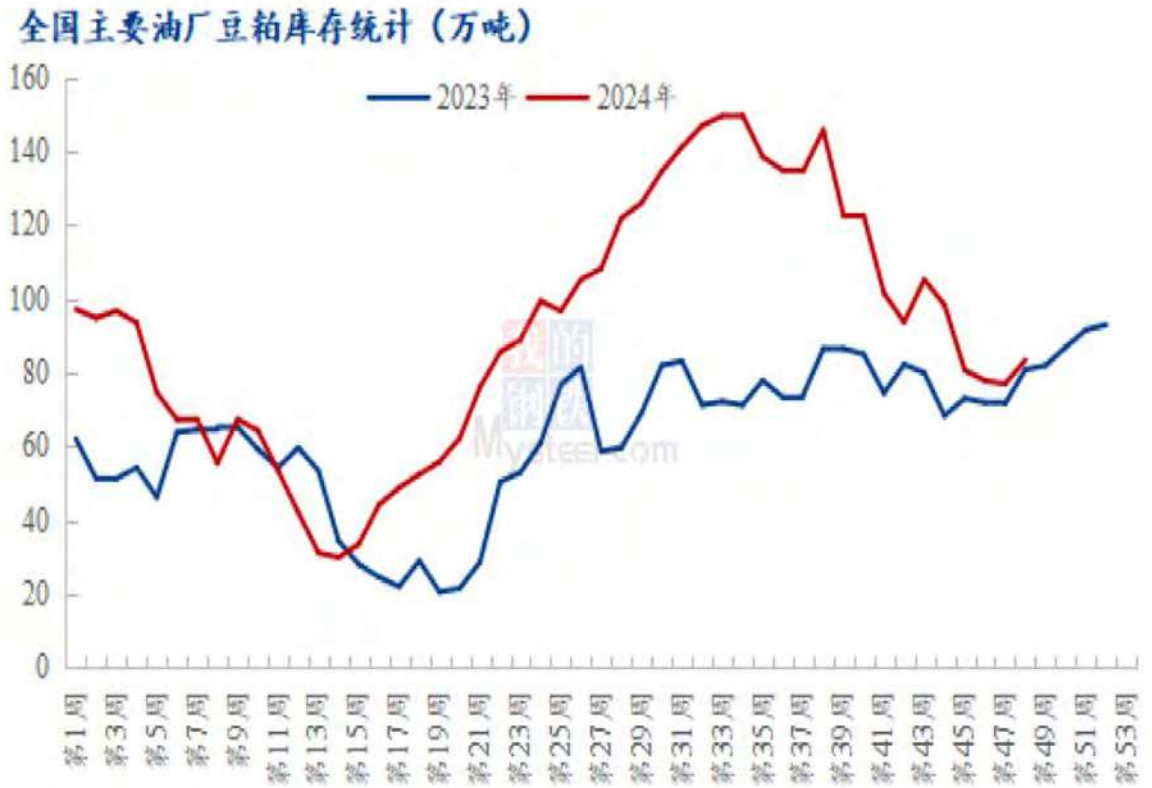


U.S. Annual Soybean Exports
美國大豆每年出口量



China Crusher's Soybean/Soybean Meal Stock
中國油廠大豆/豆粕庫存

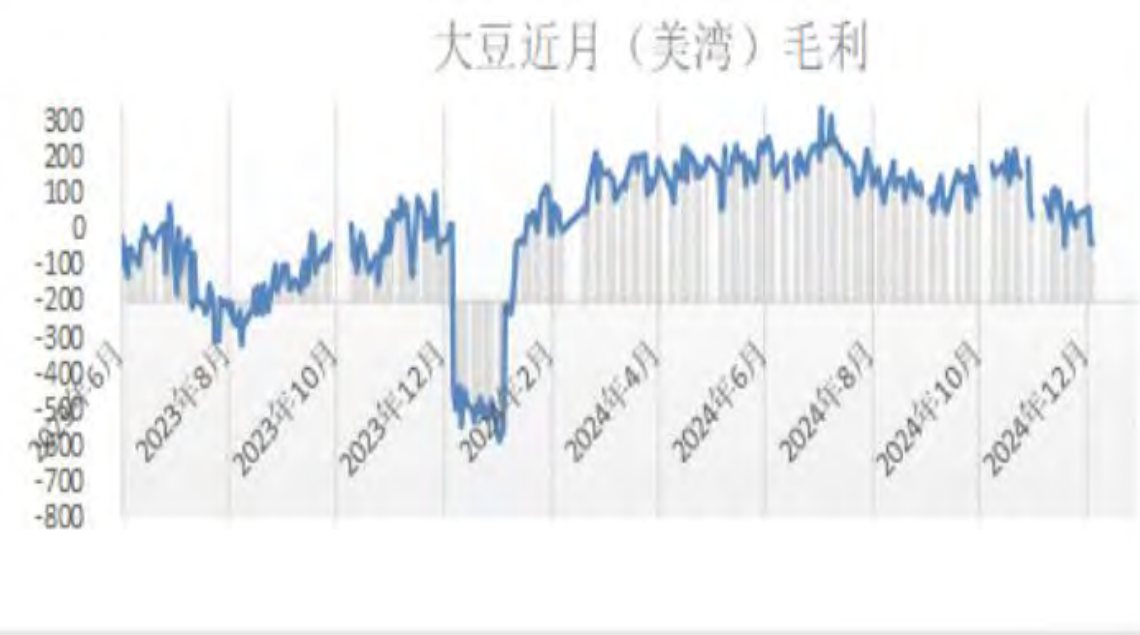




來源：上海鋼聯

China Import Soybeans Board Crush Margin-Yuan/Ton
中國進口大豆壓榨盤面毛利-元/噸

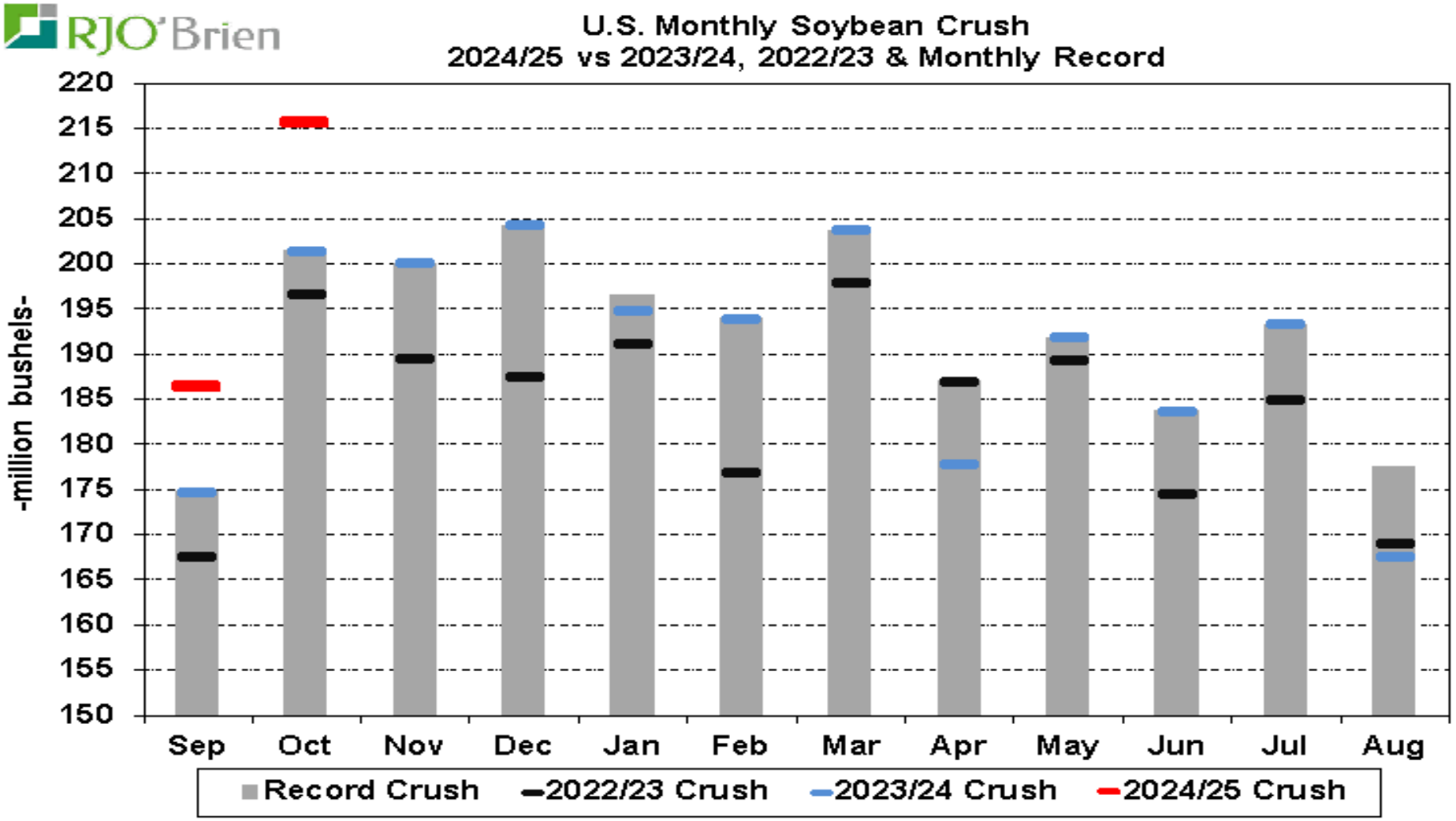
USG Nearby Months Margin



Brazil Forward Months Margin

來源：中糧期貨

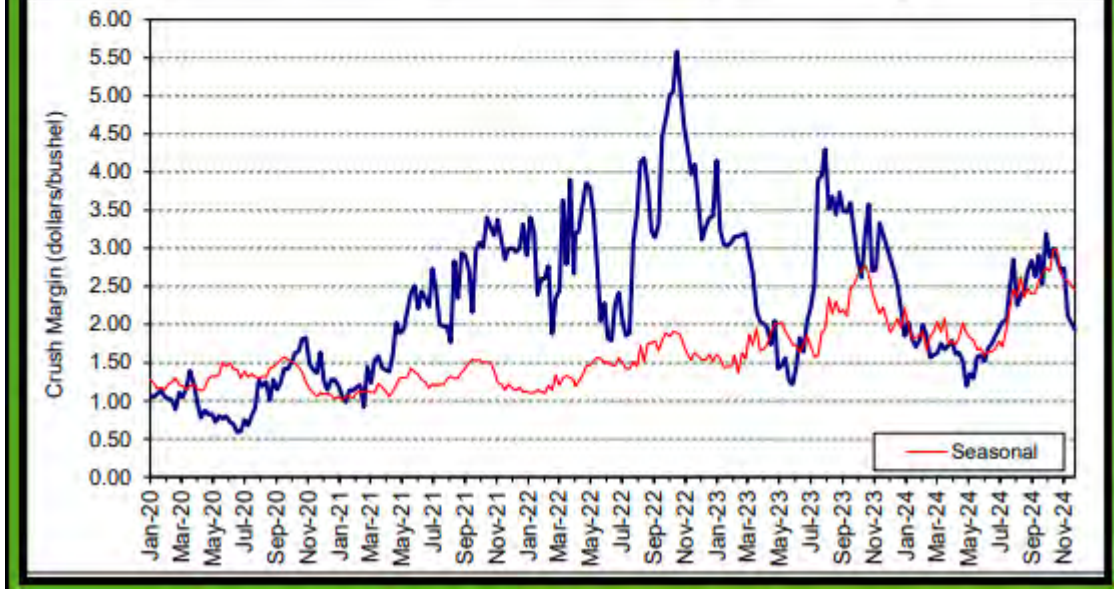
U.S. Monthly Soybean Crush Comparison
美國每月大豆壓榨量比較

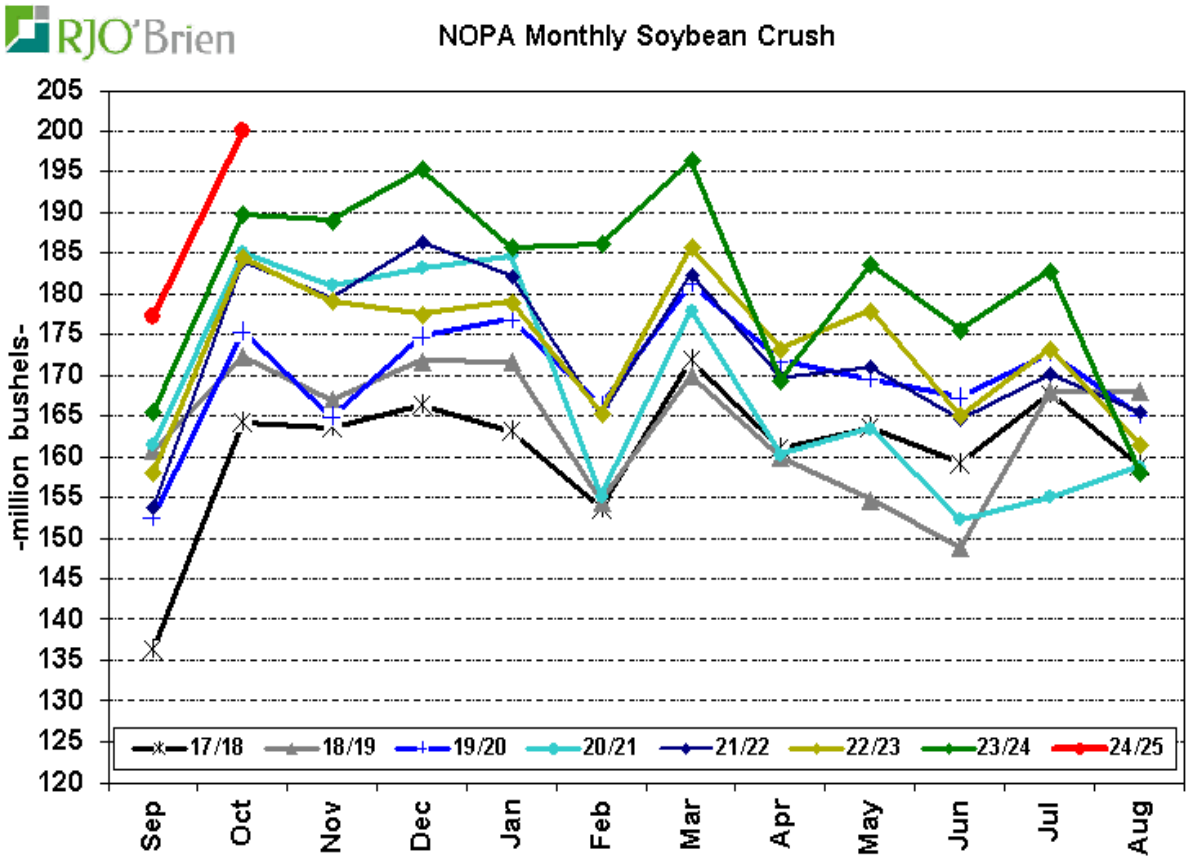


Central Illinois Cash Soybean Crush Margin/NOPA Monthly Soybean Crush
伊利諾伊州中部大豆現貨榨利/NOPA每月大豆壓榨量

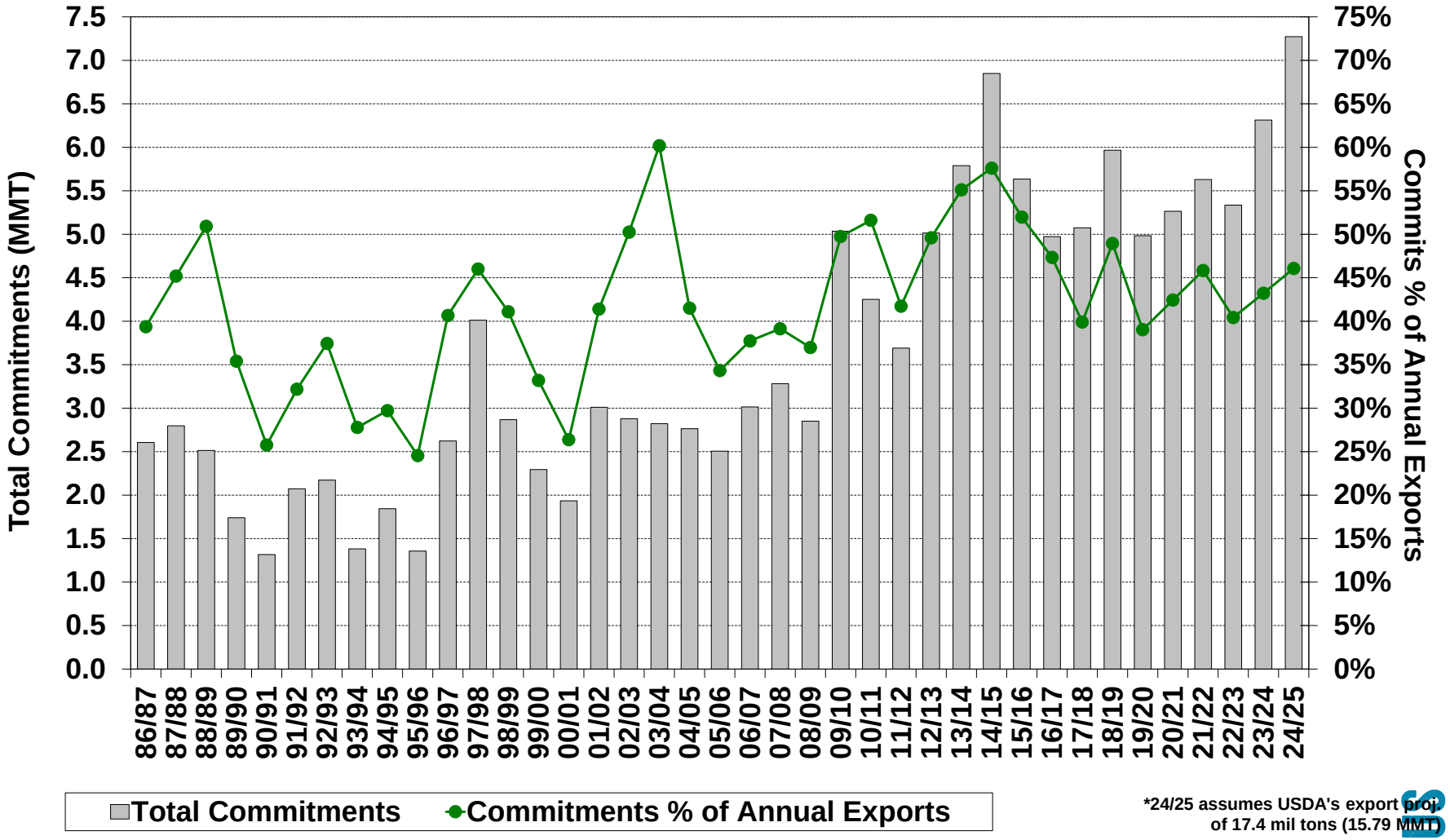
Central Illinois Cash Soybean Crush Margin

Date	Soybeans 2024	Soybeans 2023	Soybean Meal 2024	Soybean Meal 2023	Soybean Oil 2024	Soybean Oil 2023	Crush Margin 2024	Crush Margin 2023
15-Nov-24	$10.02	$13.43	$309.00	$457.60	45.11	52.36	$2.12	$3.33
22-Nov-24	$9.87	$13.34	$309.70	$469.30	42.85	54.68	$2.02	$3.18
29-Nov-24								



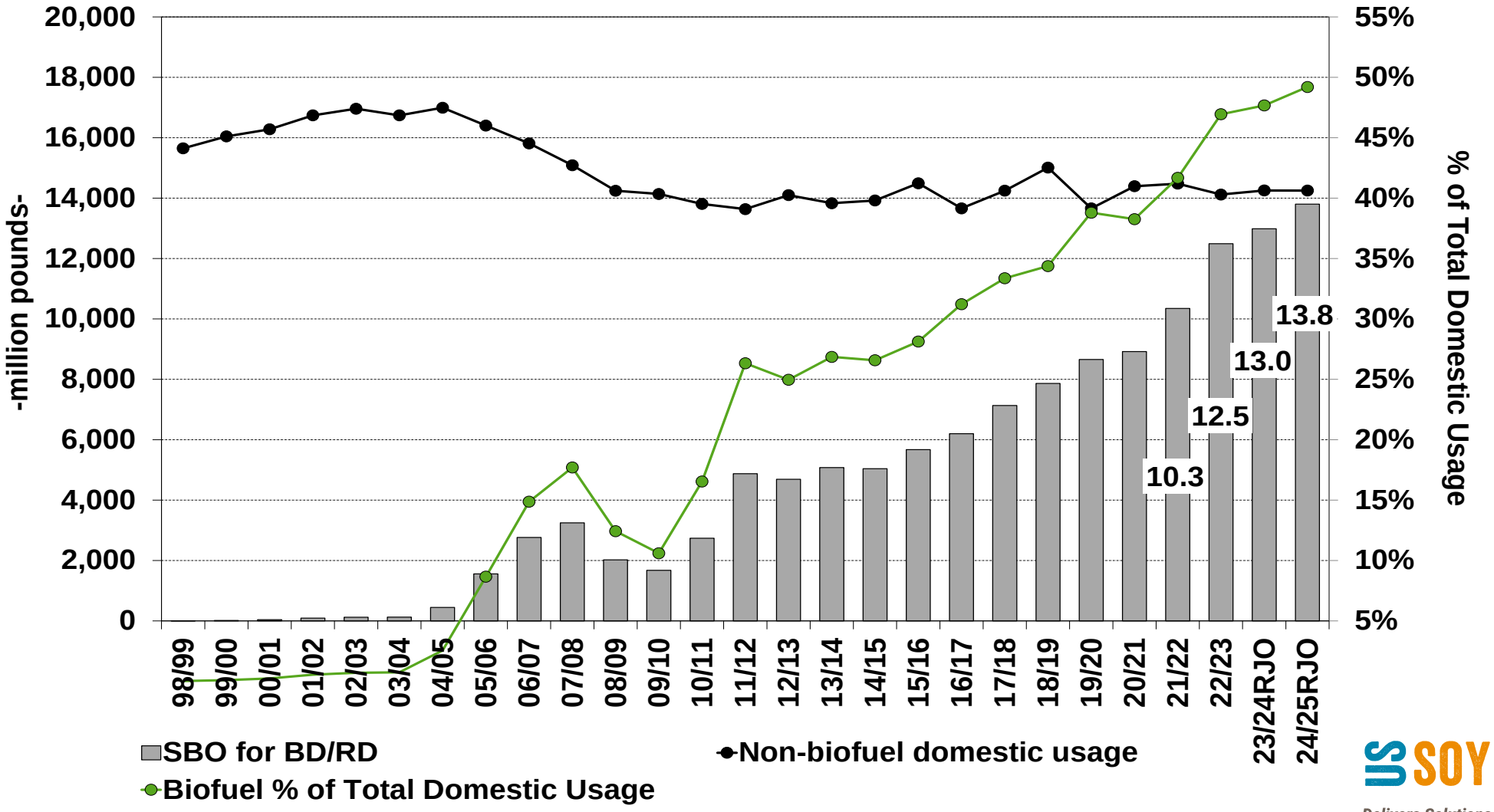


U.S. Soybean Meal Total Export Commitments -as of late November-
美國豆粕出口總銷量-截至11月底

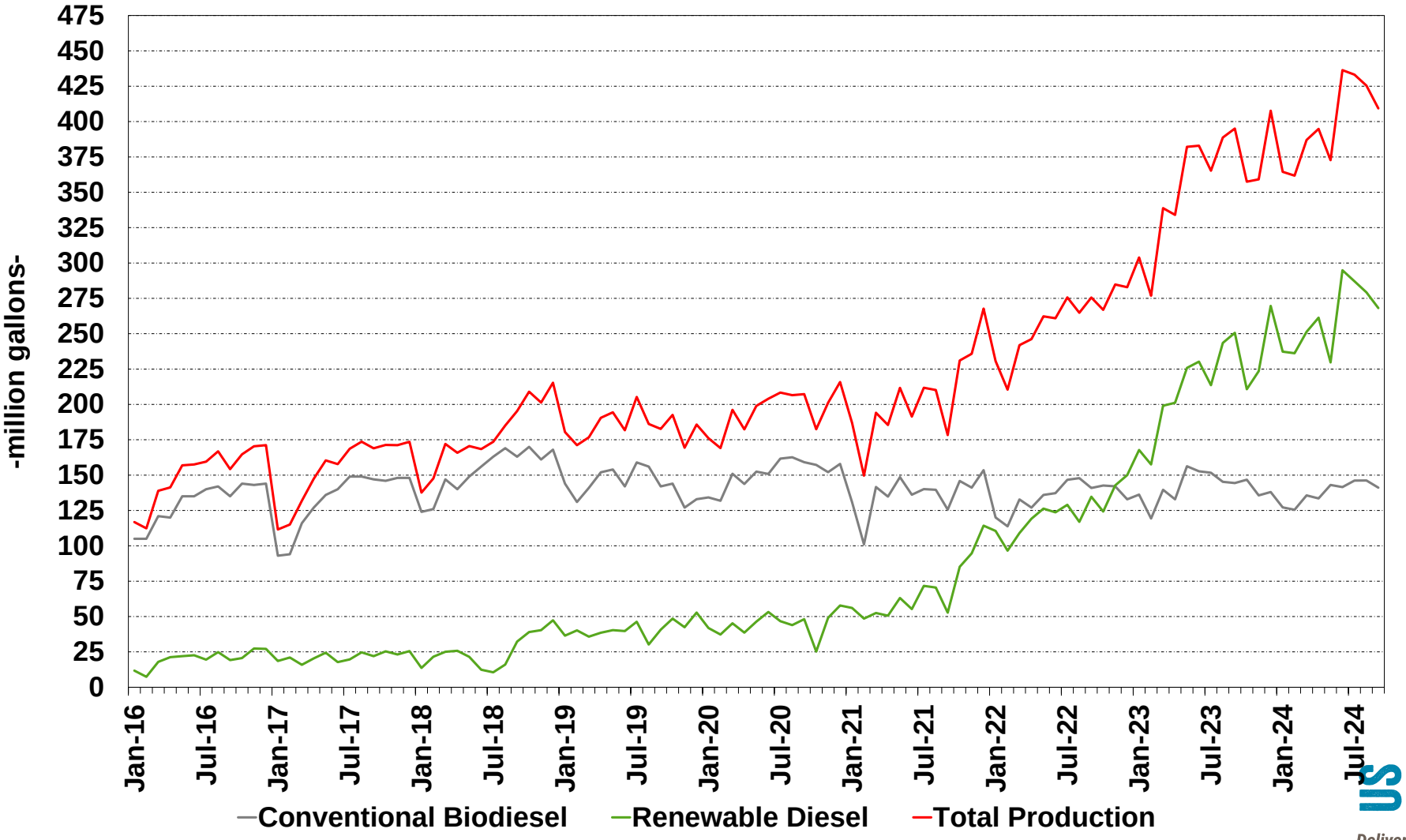


*24/25 assumes USDA's export proj. of 17.4 mil tons (15.79 MMT)

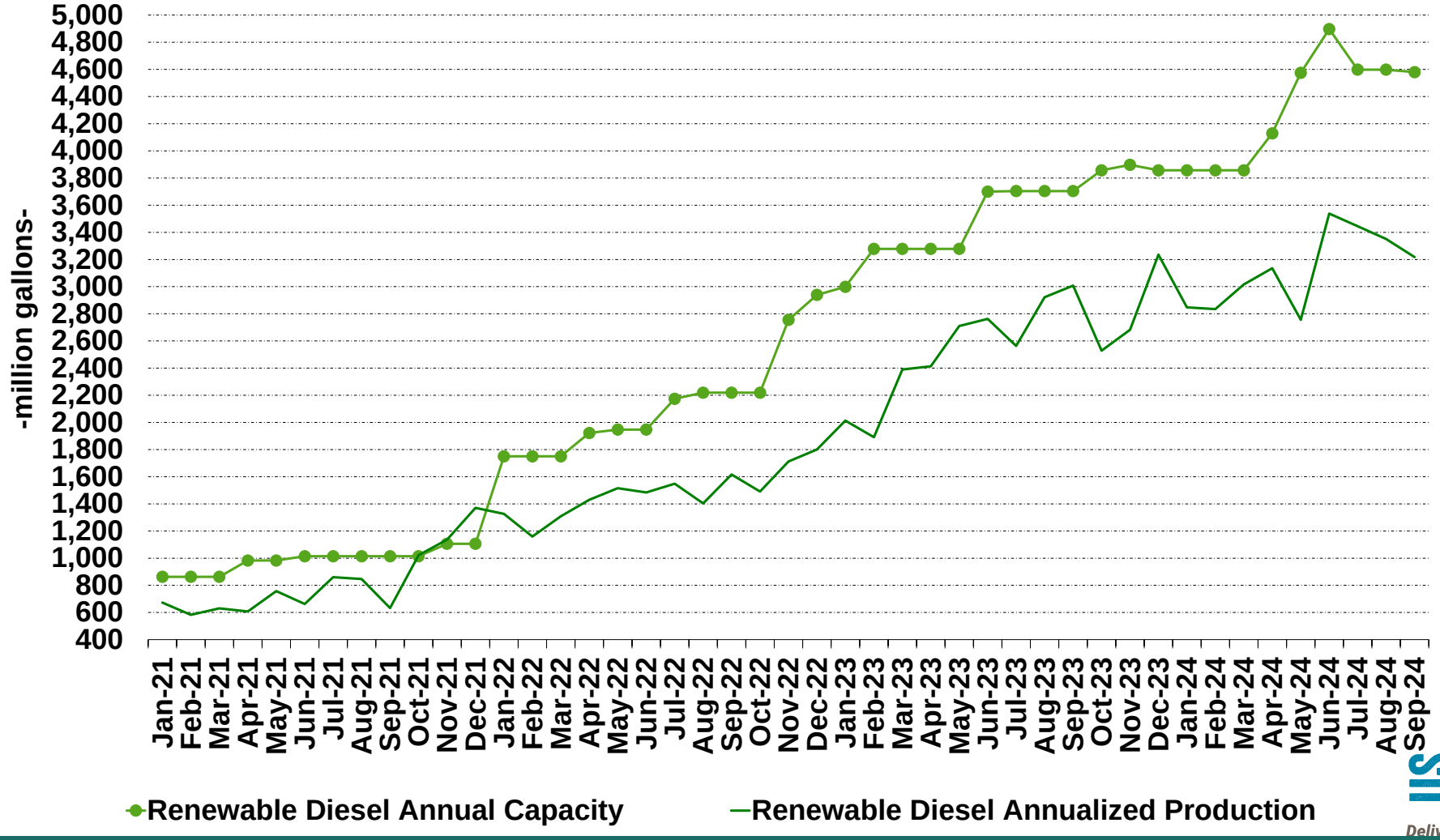
U.S. Soybean Oil Used for Biofuel Production
美國生物燃料生產的豆油用量



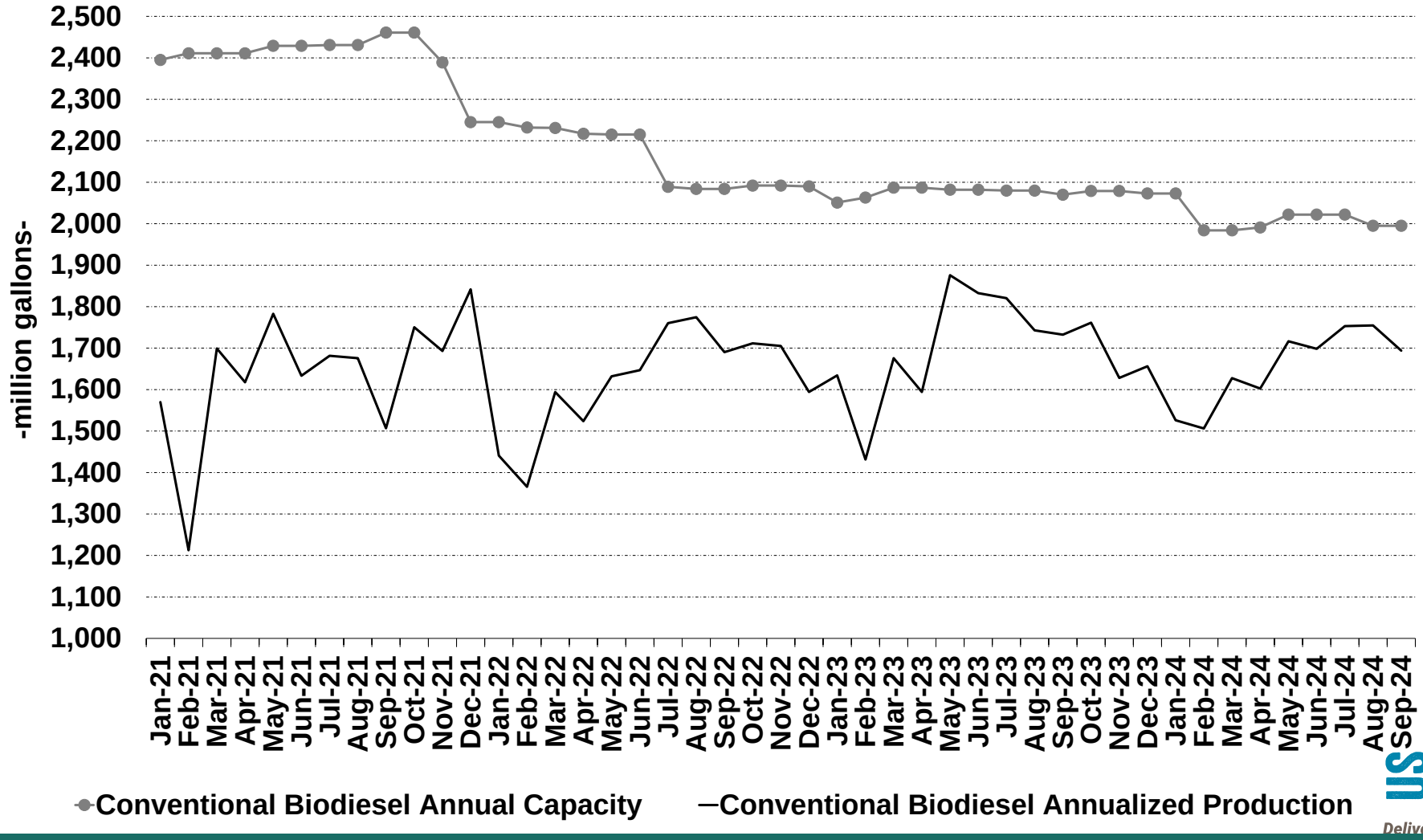
U.S. Monthly Biodiesel/Renewable Diesel Production
美國每月生物柴油/可再生柴油產量



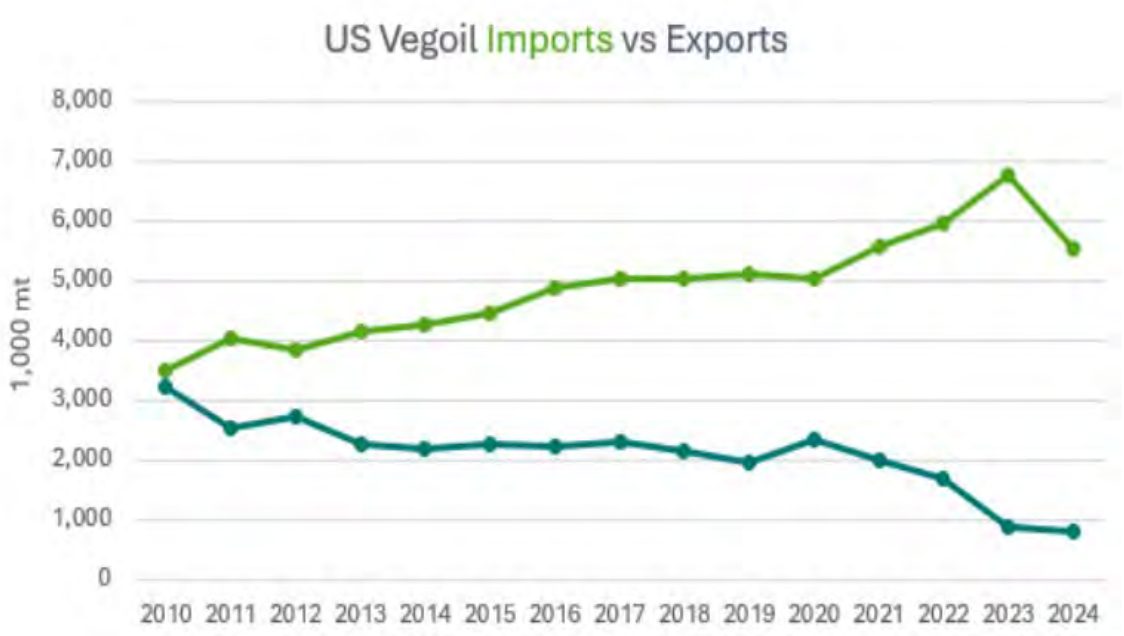
U.S. Renewable Diesel Production vs Capacity
美國可再生柴油產量 vs 產能

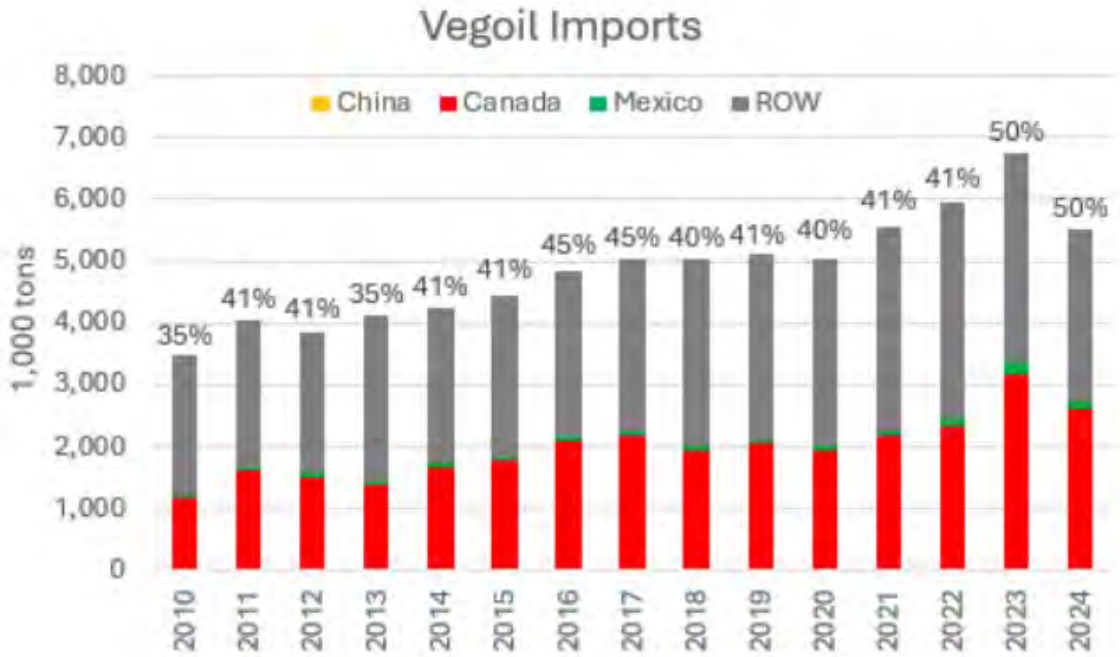


U.S. Conventional Biodiesel Production vs Capacity
美國常規生物柴油產量 vs 產能

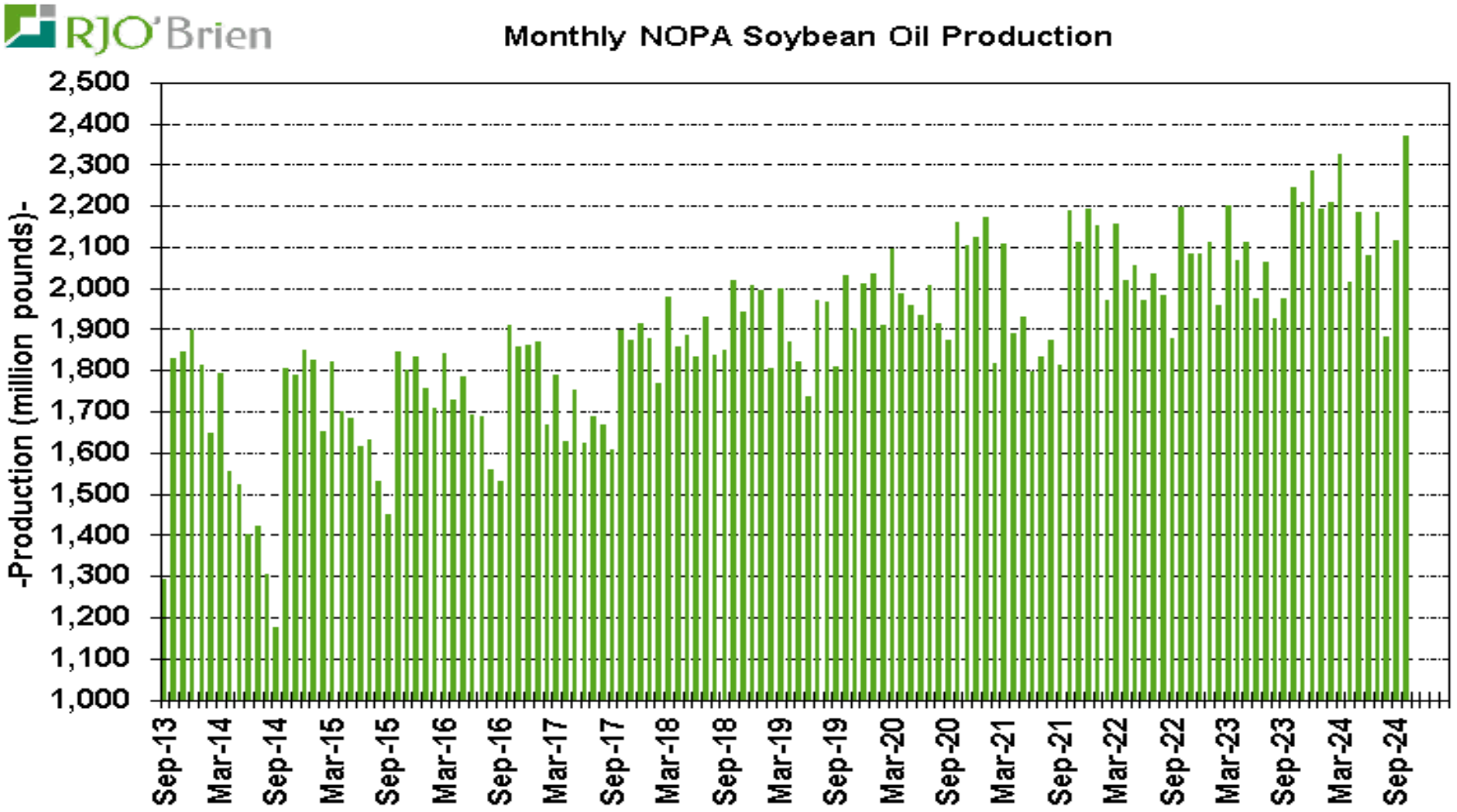


U.S. Vegetable Oil Imports vs Exports
美國植物油進口 vs 出口

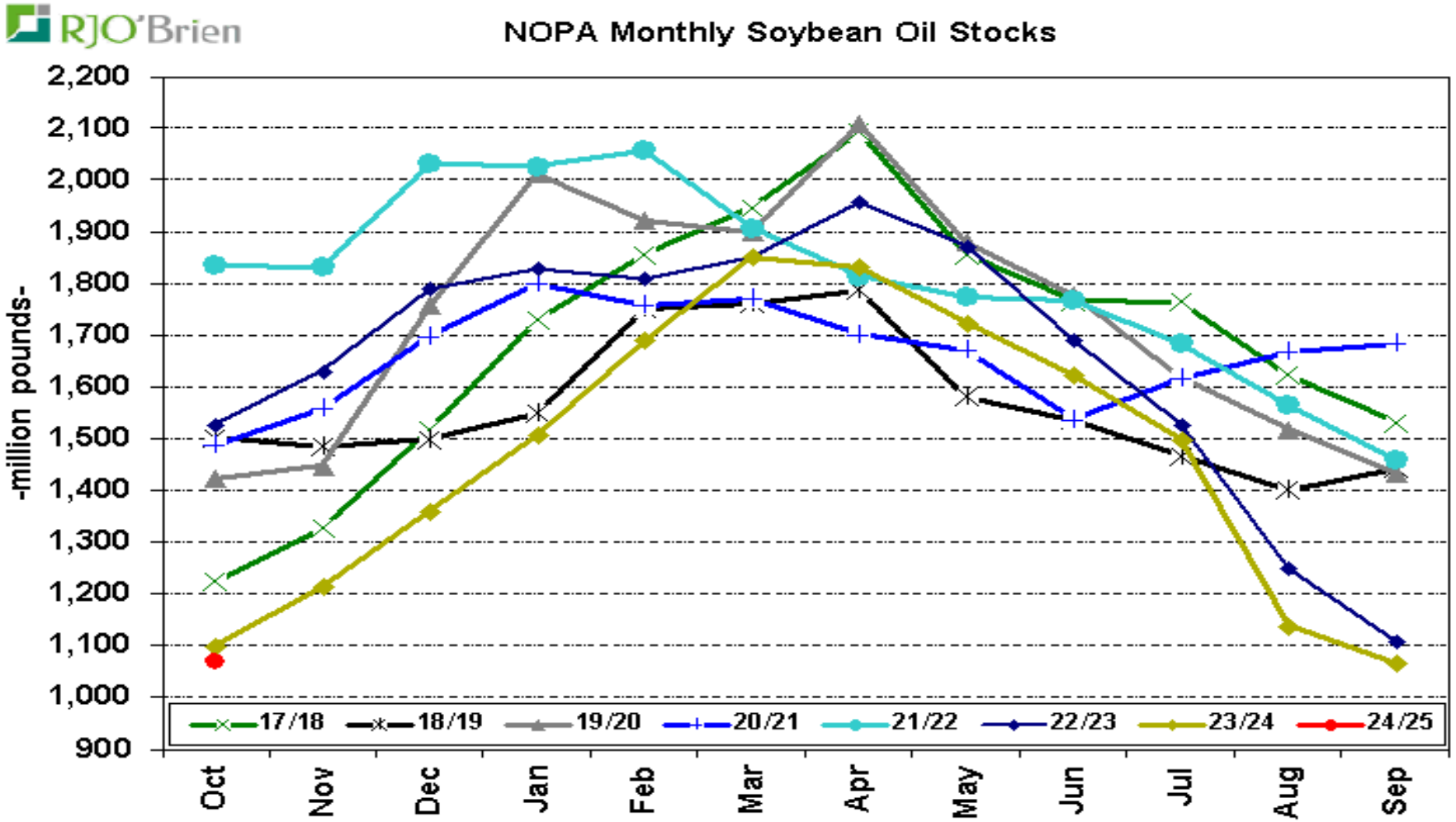




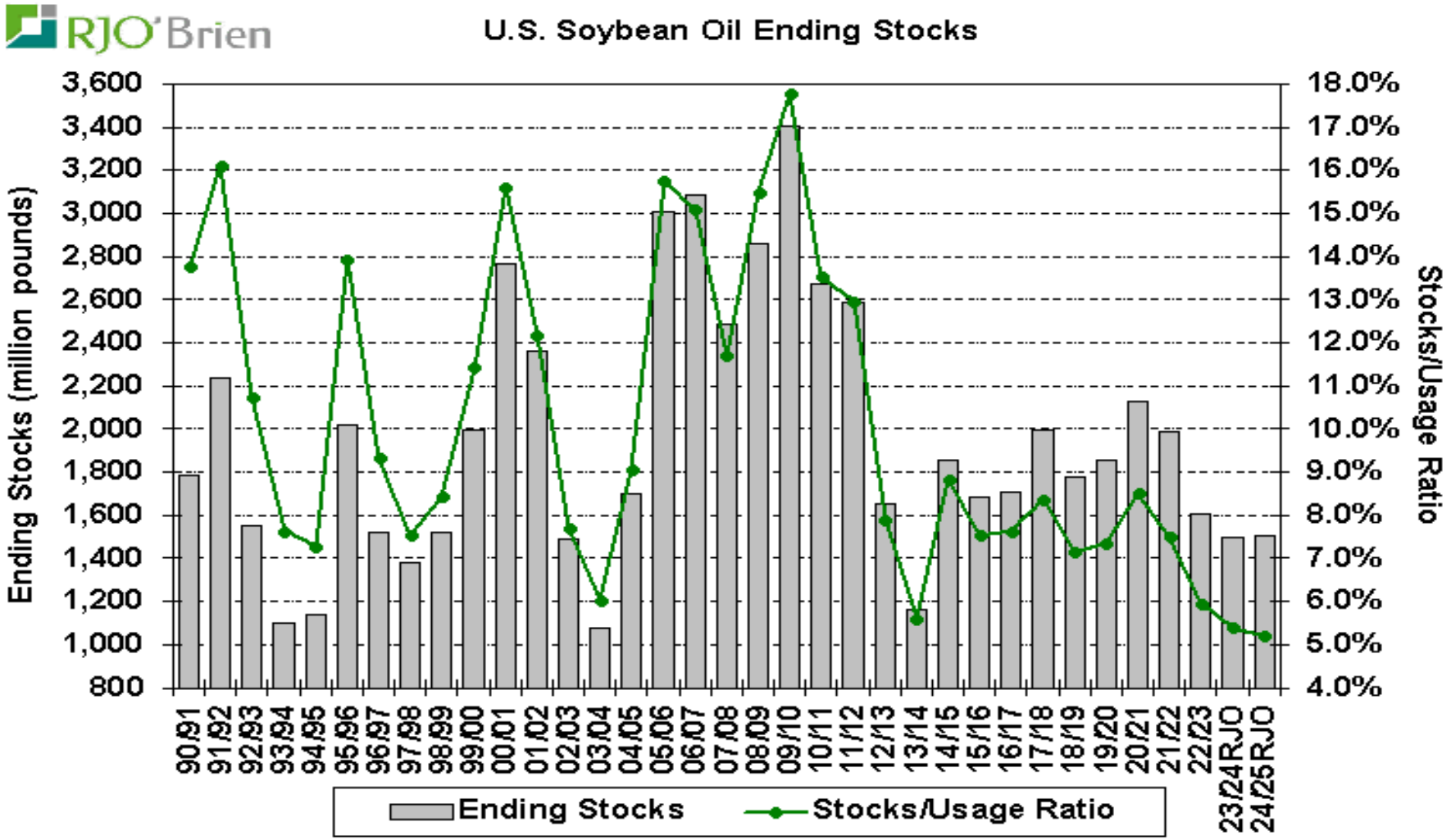
Monthly NOPA Soybean Oil Production
NOPA每月豆油產量



NOPA Monthly Soybean Oil Stocks
NOPA每月豆油庫存



U.S. Soybean Oil Ending Stocks
美國豆油年終庫存



Delivers Solutions

US Soybean Oil Supply/Demand Balance
美國大豆油平衡表

RJO'Brien

U.S. Soybean Oil Supply/Demand Balance

October/September; million pounds

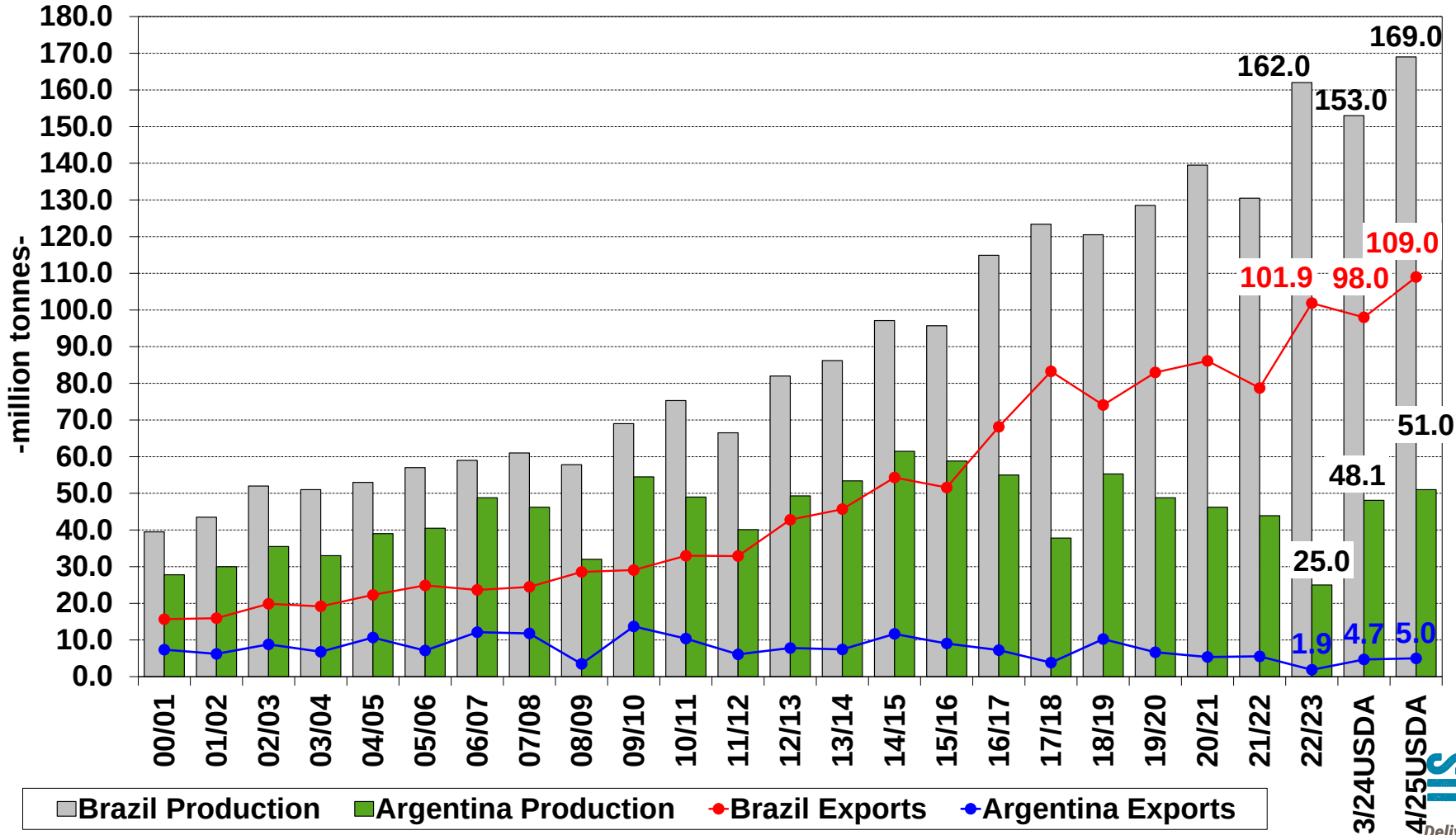
	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	RJO 23/24	USDA 11/08 23/24	RJO 24/25	USDA 11/08 24/25
Beginning Stocks	1,855	1,687	1,711	1,996	1,775	1,853	2,131	1,991	1,607	1,607	1,501	1,501
Production	21,950	22,123	23,772	24,197	24,911	25,023	26,155	26,227	27,130	27,130	28,451	28,335
Imports	287	319	335	398	320	302	303	376	620	621	600	500
Total Supply	24,092	24,129	25,819	26,591	27,006	27,177	28,589	28,594	29,357	29,357	30,552	30,336
Domestic	20,162	19,862	21,380	22,874	22,317	23,314	24,827	26,609	27,239	27,240	28,050	28,200
Biofuel	5,670	6,200	7,134	7,863	8,658	8,920	10,348	12,491	12,986	13,000	13,800	14,000
Food, Feed, Ind.	14,492	13,662	14,247	15,011	13,659	14,394	14,479	14,118	14,253	14,240	14,250	14,200
Exports	2,243	2,556	2,443	1,941	2,837	1,731	1,771	378	617	617	900	600
Total Usage	22,405	22,418	23,823	24,815	25,154	25,046	26,598	26,987	27,856	27,856	28,950	28,800
Ending Stocks	1,687	1,711	1,996	1,775	1,853	2,131	1,991	1,607	1,501	1,501	1,602	1,536
Oct-Sept Crush (mbu)	1,890	1,908	2,079	2,085	2,173	2,134	2,207	2,219	2,299	2,299	2,405	2,410
Yield (lbs/bushel)	11.61	11.59	11.43	11.61	11.46	11.73	11.85	11.82	11.80	11.80	11.83	11.76
Stocks/Usage Ratio	7.5%	7.6%	8.4%	7.2%	7.4%	8.5%	7.5%	6.0%	5.4%	5.4%	5.5%	5.3%

RJO預測美國 2024/25 年度豆油出口量為 9 億磅，相比 USDA11 月預 測為 6 億磅

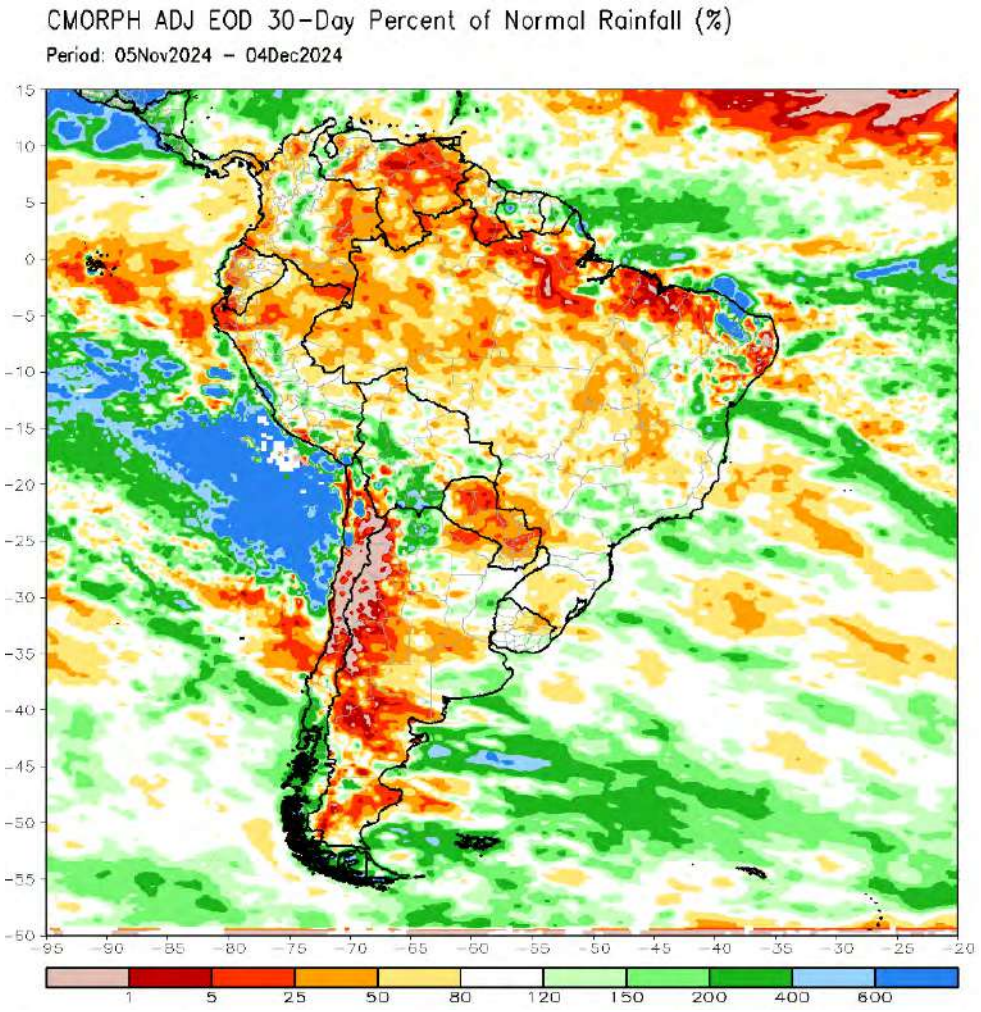
RJO將生物燃料生產用豆油需求量下調至 138 億磅，相比 USDA 當前預測為 140 億磅，23/24 年度為 129.86 億磅

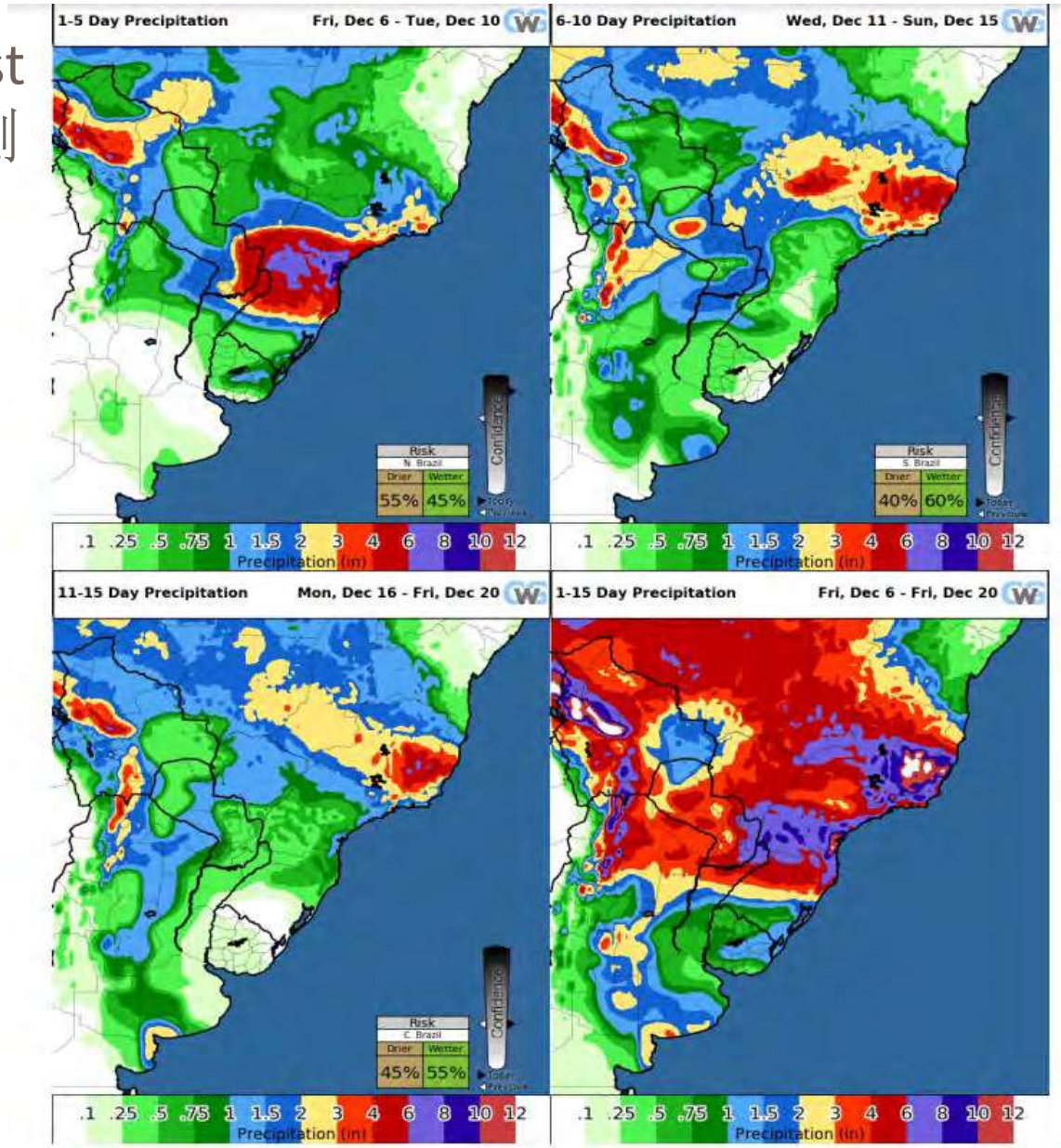
Crude Oil vs Palm Oil
原油 vs 棕櫚油

South America Soybean Production and Exports
南美大豆產量和出口量

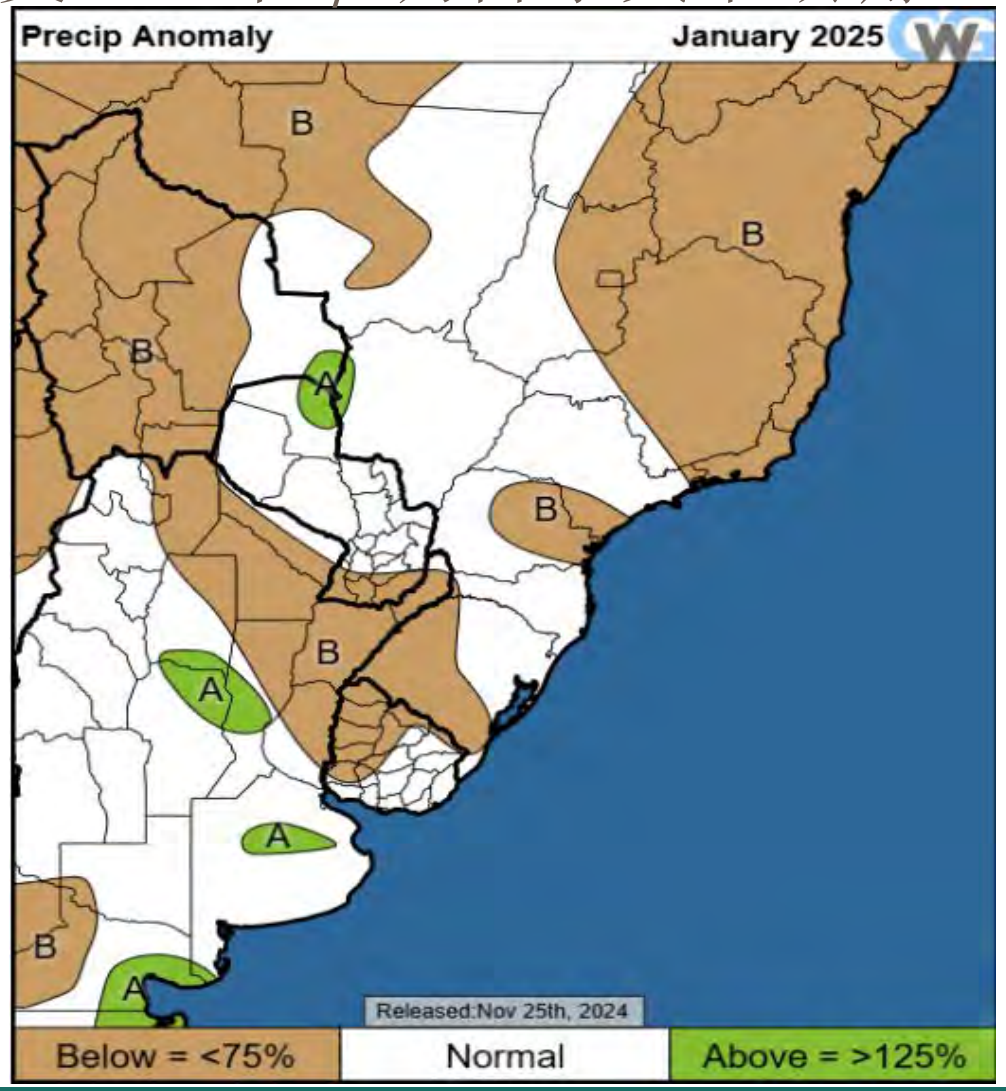


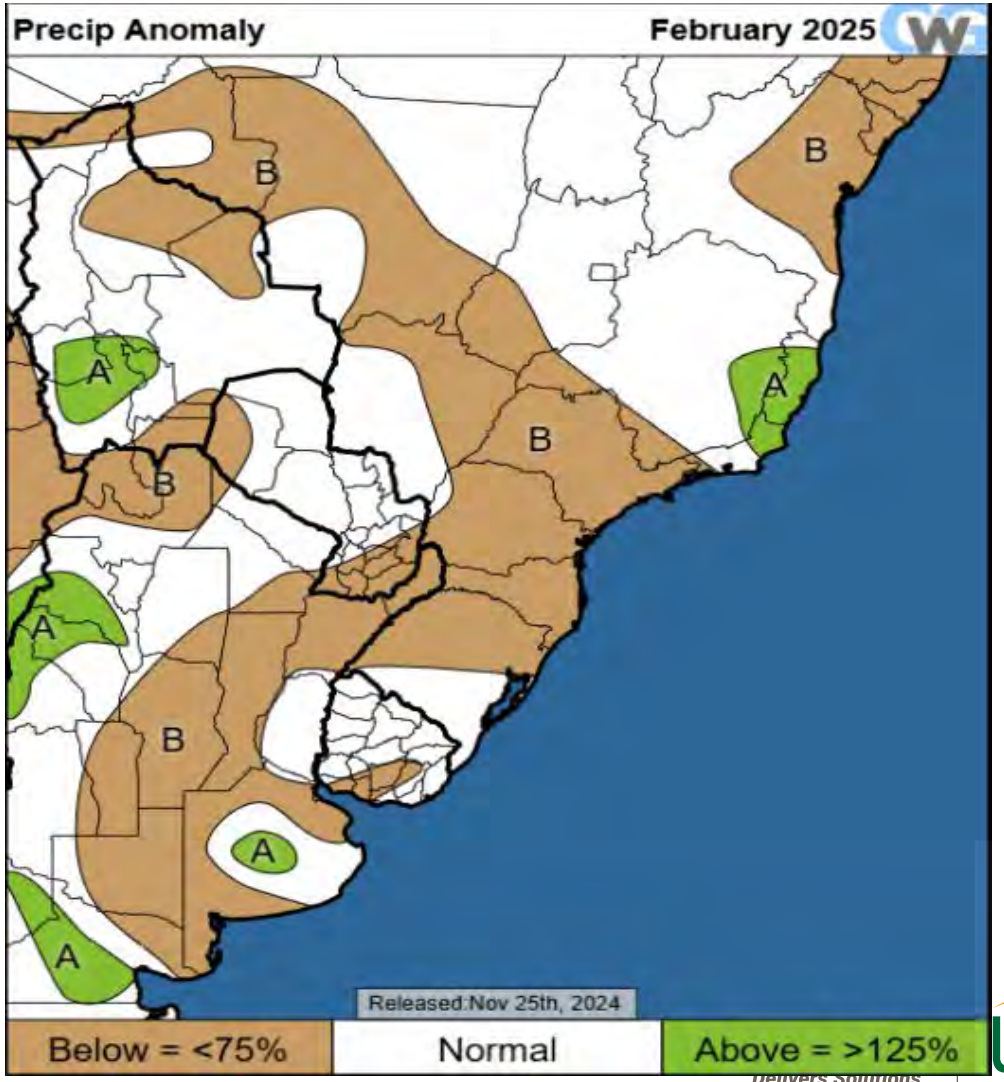
SAM Precip in Past Mon/1-15 Day Forecast
南美過去一個月降水/未來15天降水預測



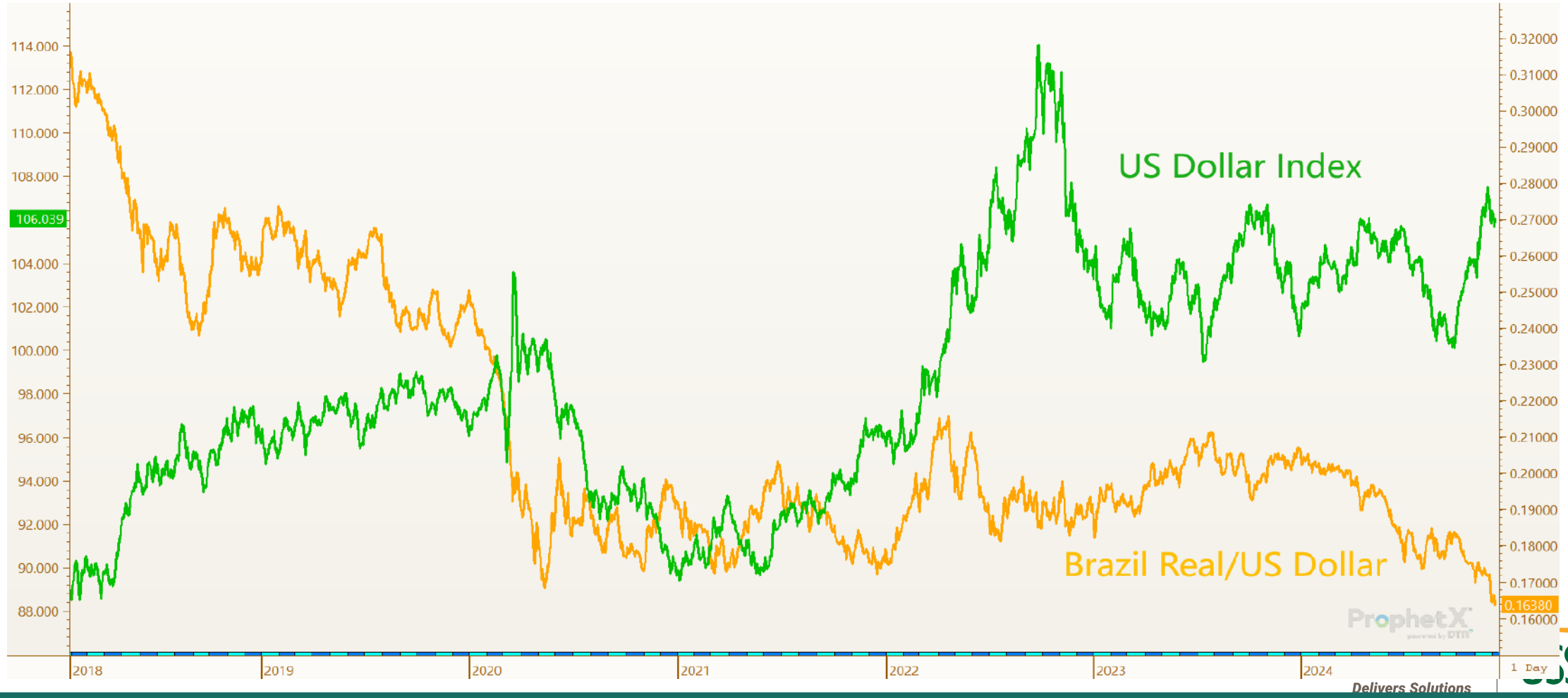


SAM Jan/Feb 2025 Precip Anomaly Forecast
南美2025年1/2月降水異常預測

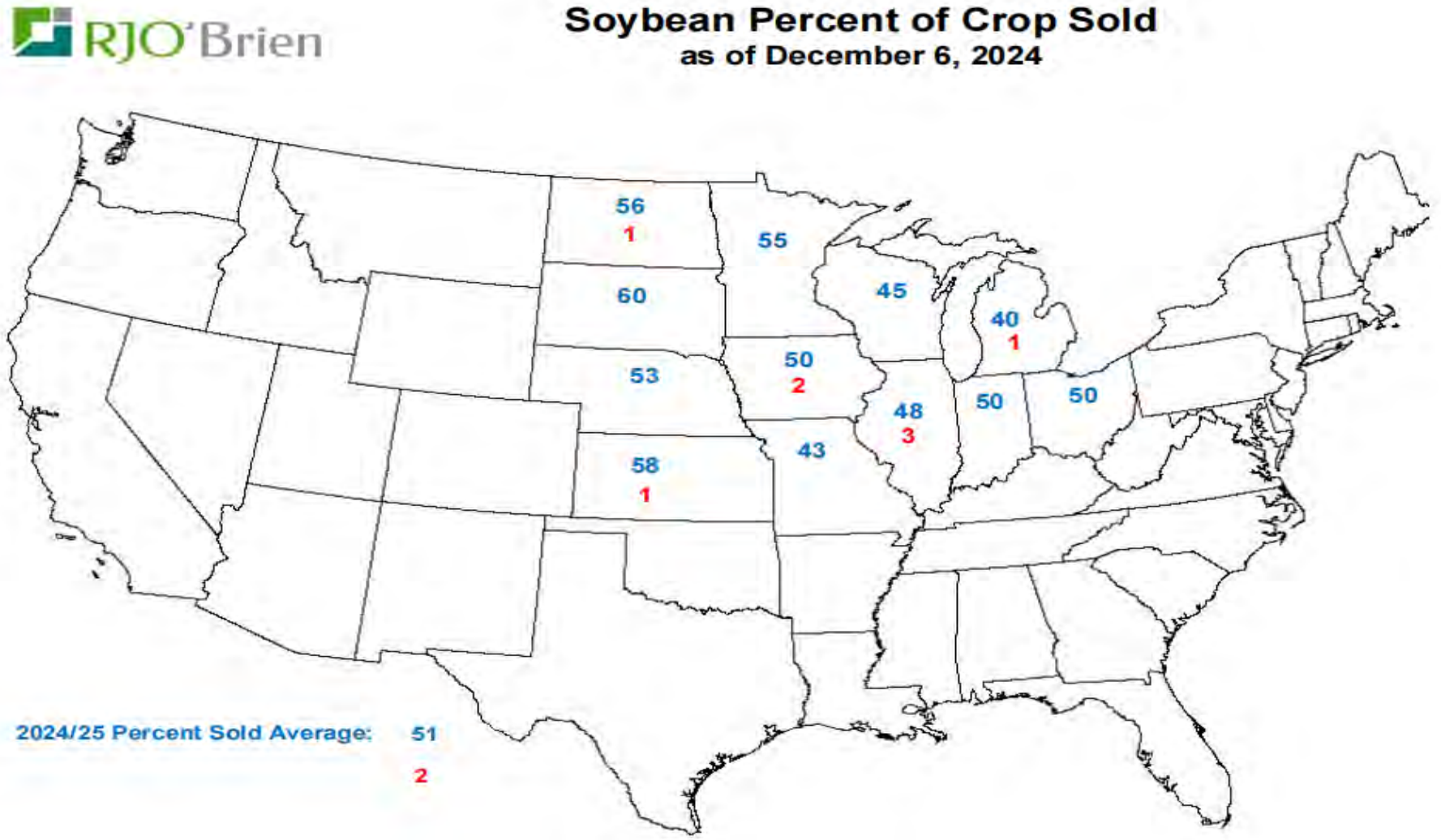




US Dollar Index vs Brazilian Real
美元指數 vs 巴西雷亞爾

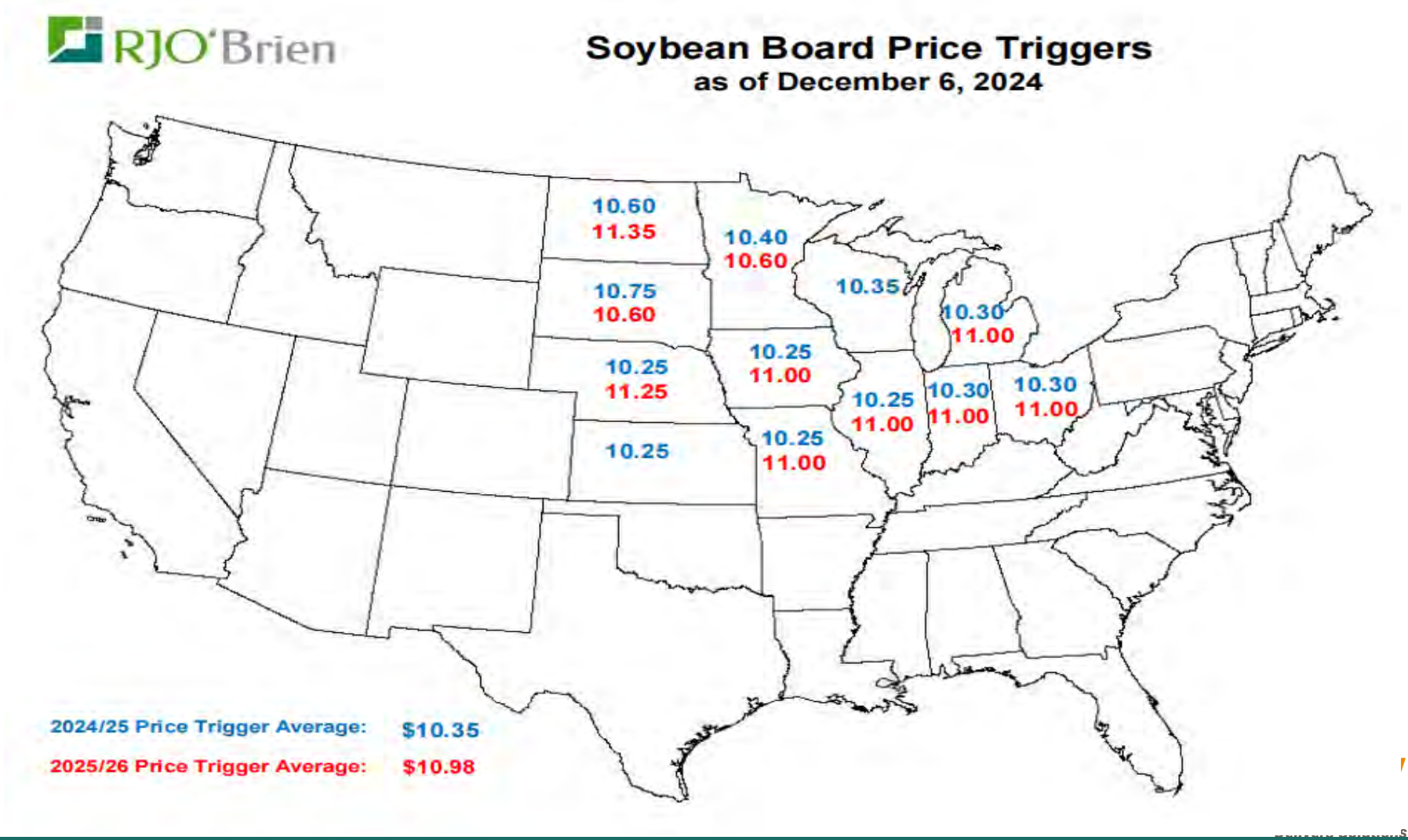


Soybean Percent of Crop Sold
美國農民大豆銷售進度-截至2024年12月6日



Delivers Solutions

Soybean Board Price Triggers
美國大豆盤面觸發銷售價格-截至2024年12月6日



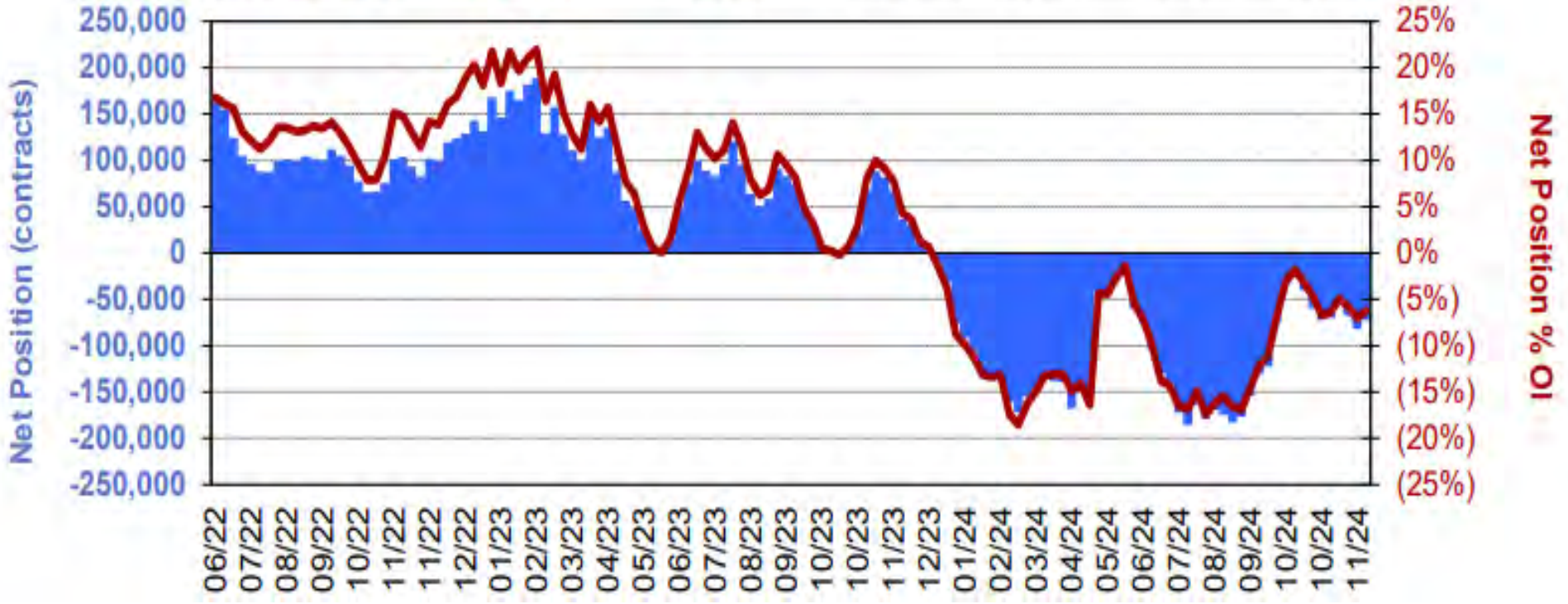
CBOT Soybeans Weekly Chart
CBOT大豆週線圖

CBOT Soybeans/Corn
CBOT大豆/玉米比價圖

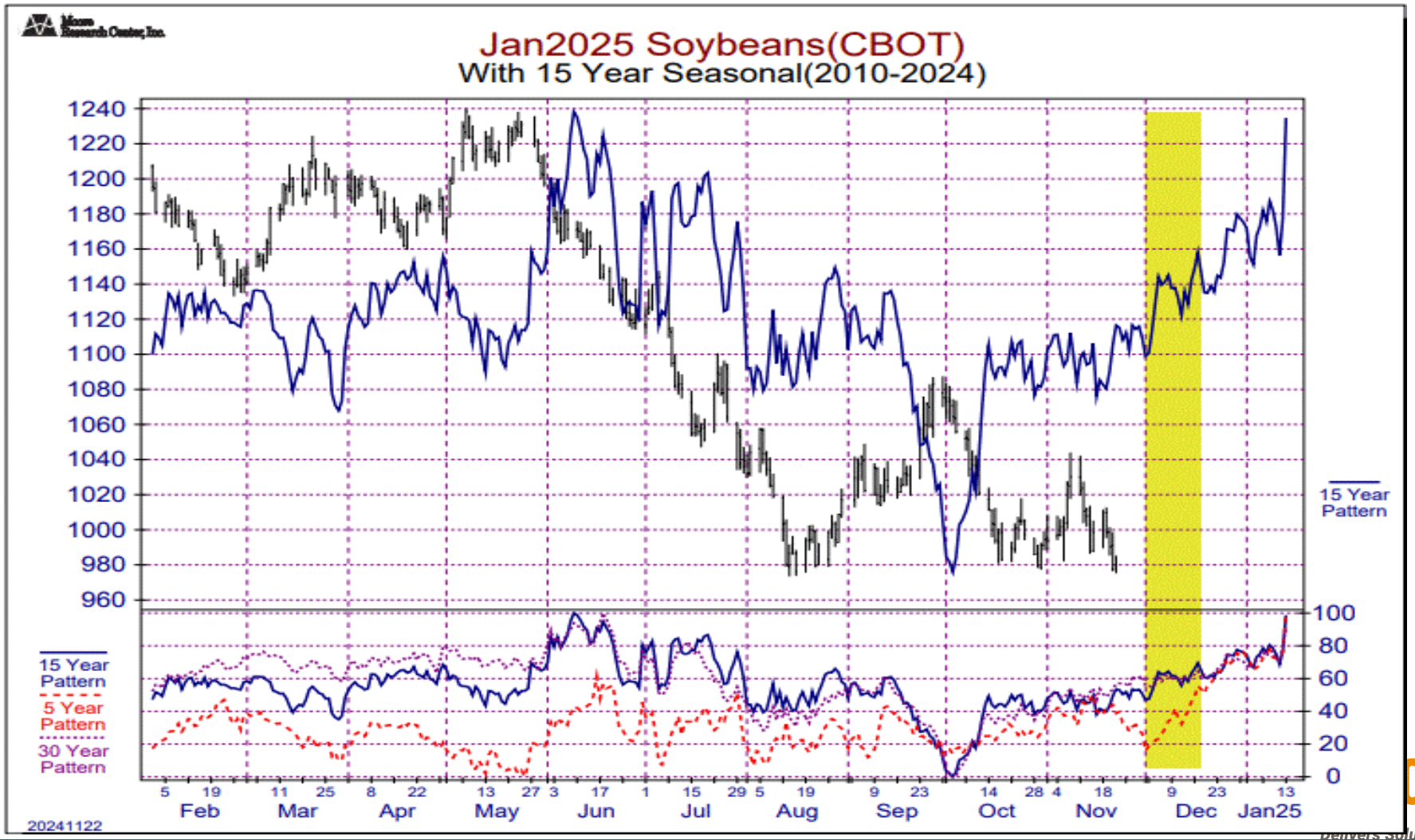
CBOT Soybeans Disaggregated Futures & Options Combined-Managed Money
管理基金大豆期貨和期權持倉量

CBOT Soybeans Disaggregated Futures & Options Combined

Managed Money		Contracts	Change	Open Int.	% of OI	Record Long	Record Short
26-Nov-24	SHORT	(81,472)	(13,771)	1,152,213	-7.1%		
3-Dec-24	SHORT	(72,217)	+9,255	1,162,816	-6.2%	25.1%	18.5%



Jan 2025 Soybeans(CBOT) vs Seasonal
1月大豆期貨季節性圖



Wheat 小麦

USDA US Wheat Revisions Nov vs Oct
USDA11月報告對美國小麥平衡表的調整項

RJO'Brien

USDA US Wheat Revisions

	2023/24			2024/25		
	11-Oct	8-Nov	Change	11-Oct	8-Nov	Change
Area	-Million acres-			-Million acres-		
Planted	49.6	49.6	0.0	46.1	46.1	0.0
Harvested	37.1	37.1	0.0	38.5	38.5	0.0
	-Bushels-			-Bushels-		
Yield/Harvested acre	48.7	48.7	0.0	51.2	51.2	0.0
	-Million bushels-			-Million bushels-		
Beginning stocks	570	570	0	696	696	0
Production	1,804	1,804	0	1,971	1,971	0
Imports	138	138	0	115	120	5
Supply, total	2,512	2,512	0	2,783	2,788	5
Food	961	961	0	964	966	2
Seed	62	62	0	62	62	0
Feed and residual	85	85	0	120	120	0
Domestic, total	1,108	1,108	0	1,146	1,148	2
Exports	707	707	0	825	825	0
Use, total	1,815	1,815	0	1,971	1,973	2
Ending stocks	696	696	0	812	815	3
Average Farm Price	$6.96	$6.96	$0.00	$5.70	$5.60	-$0.10

US Wheat Supply/Demand Balance
美國小麥平衡表

RJO'Brien

U.S. Wheat Supply/Demand Balance

June/May; thousand acres; million bushels

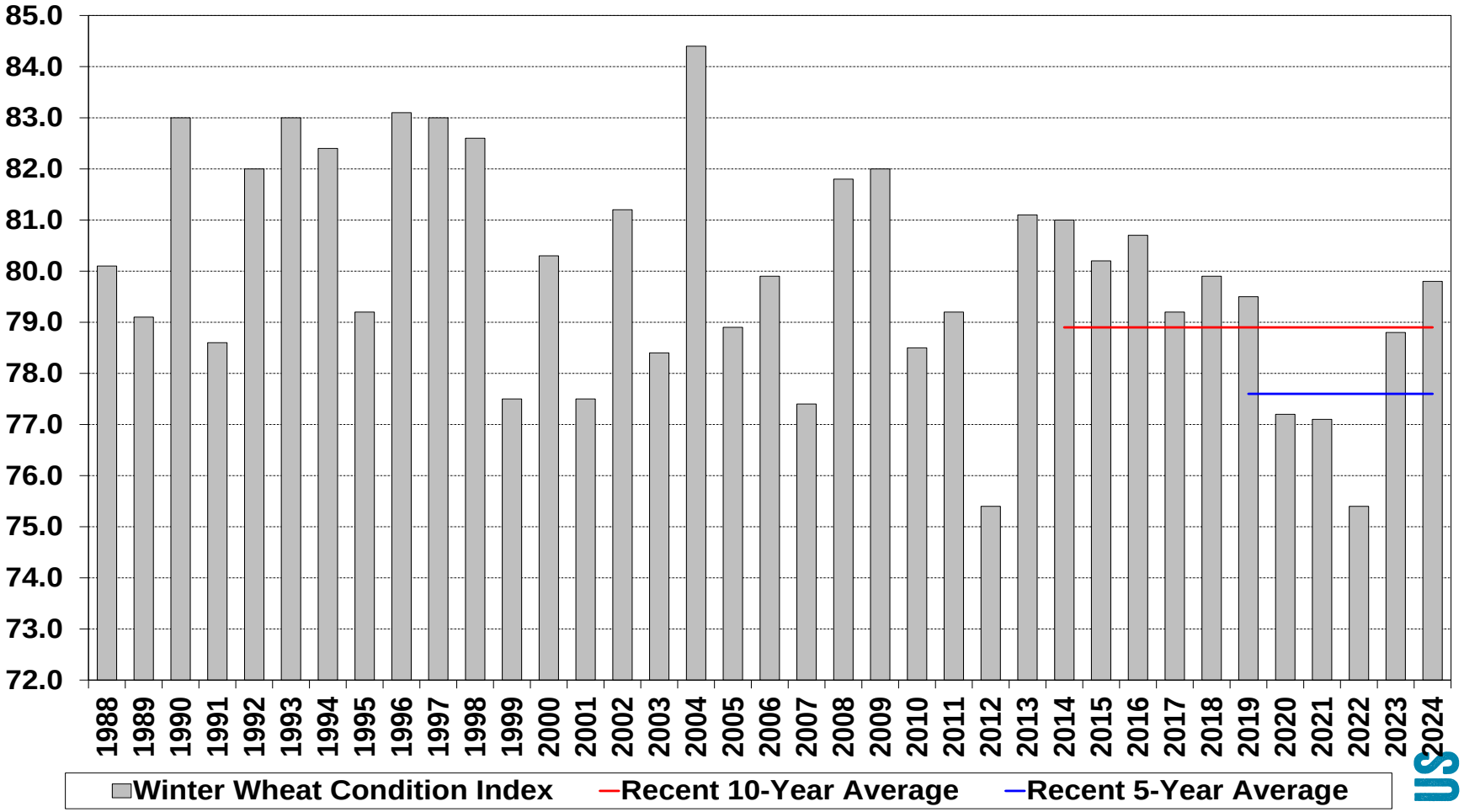
	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23	23/24	RJO 24/25	USDA 11/08 24/25
Acres Planted	56,841	54,999	50,116	46,052	47,815	45,485	44,450	46,703	45,768	49,575	46,079	46,079
% Harvested	81.6	86.0	87.5	81.5	82.8	82.2	82.8	79.6	77.5	74.8	83.5	83.5
Acres Harvested	46,385	47,318	43,848	37,555	39,612	37,394	36,789	37,163	35,485	37,077	38,469	38,469
Average Yield	43.7	43.6	52.7	46.4	47.6	51.7	49.7	44.3	46.5	48.7	51.2	51.2
Carry-In	590	752	976	1,181	1,099	1,080	1,028	845	674	570	696	696
Production	2,026	2,062	2,309	1,741	1,885	1,932	1,828	1,646	1,650	1,804	1,971	1,971
Imports	151	113	118	157	134	103	99	96	122	138	115	120
Total Supply	2,768	2,927	3,402	3,079	3,118	3,115	2,955	2,588	2,446	2,512	2,783	2,787
Food	958	957	949	964	955	962	961	972	972	961	965	966
Seed	79	67	61	63	60	61	64	58	68	62	63	62
Feed	113	149	161	51	89	96	92	89	74	85	85	120
Domestic	1,151	1,174	1,171	1,079	1,103	1,119	1,116	1,118	1,115	1,108	1,113	1,148
Exports	864	778	1,051	901	935	967	994	795	762	707	850	825
Total Usage	2,015	1,952	2,222	1,980	2,038	2,086	2,110	1,914	1,876	1,815	1,963	1,973
Carry-Out	752	976	1,181	1,099	1,080	1,028	845	674	570	696	820	815
Stocks/Usage Ratio	37.3	50.0	53.1	55.5	53.0	49.3	40.1	35.2	30.4	38.4	41.8	41.3

RJO預期美國24/25 年度小麥出口量為 8.5 億蒲(英斗)，高於USDA11月預測的8.25 億蒲(英斗)

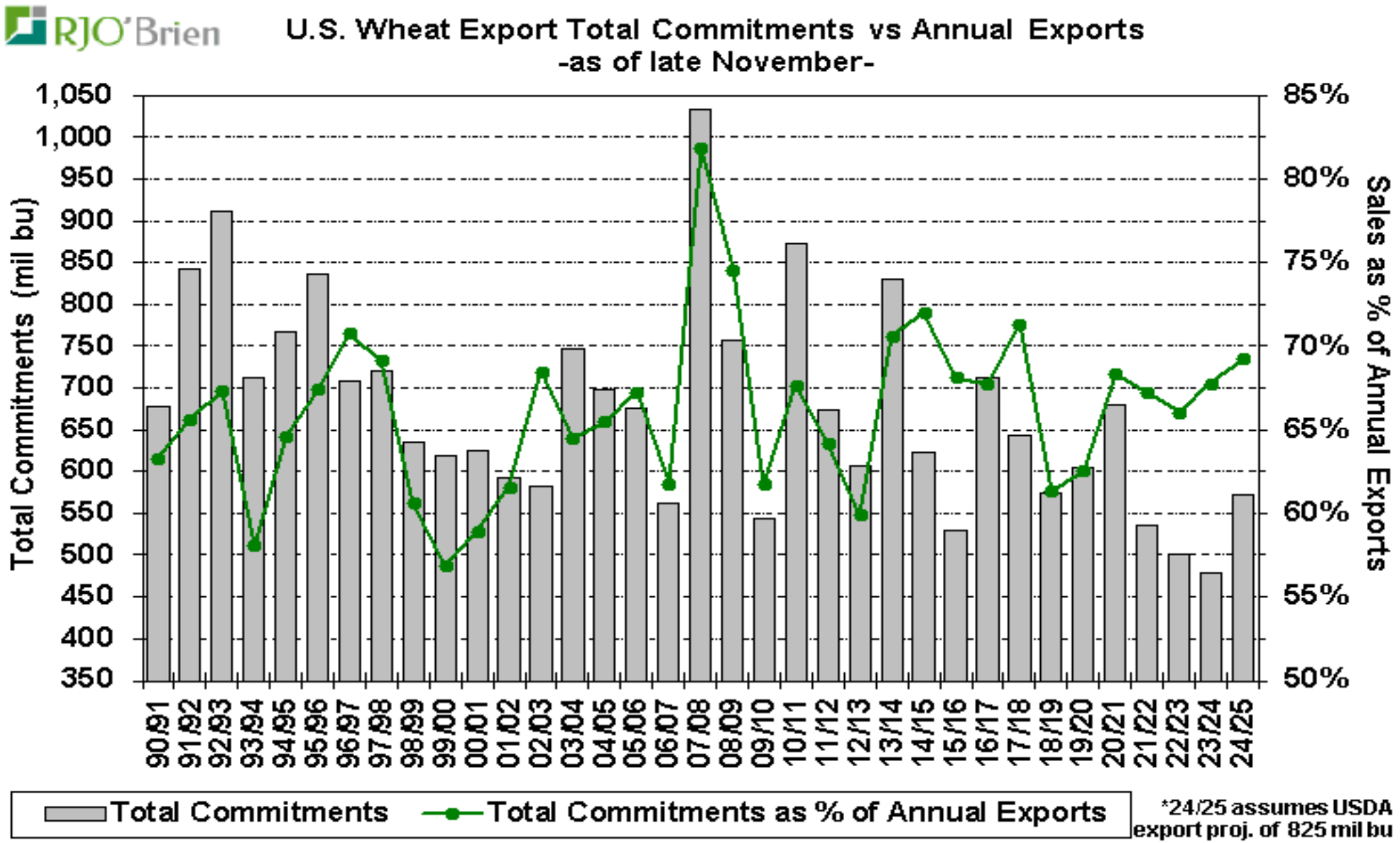
RJO預期的 飼用/調整用量為 8500 萬蒲(英斗)，低於USDA11月預測的1.2億蒲(英斗)

RJO預測美國 24/25 年度小麥年終庫存為 8.2 億蒲(英斗)，相比 USDA 11月預 測為 8.15 億蒲(英斗)

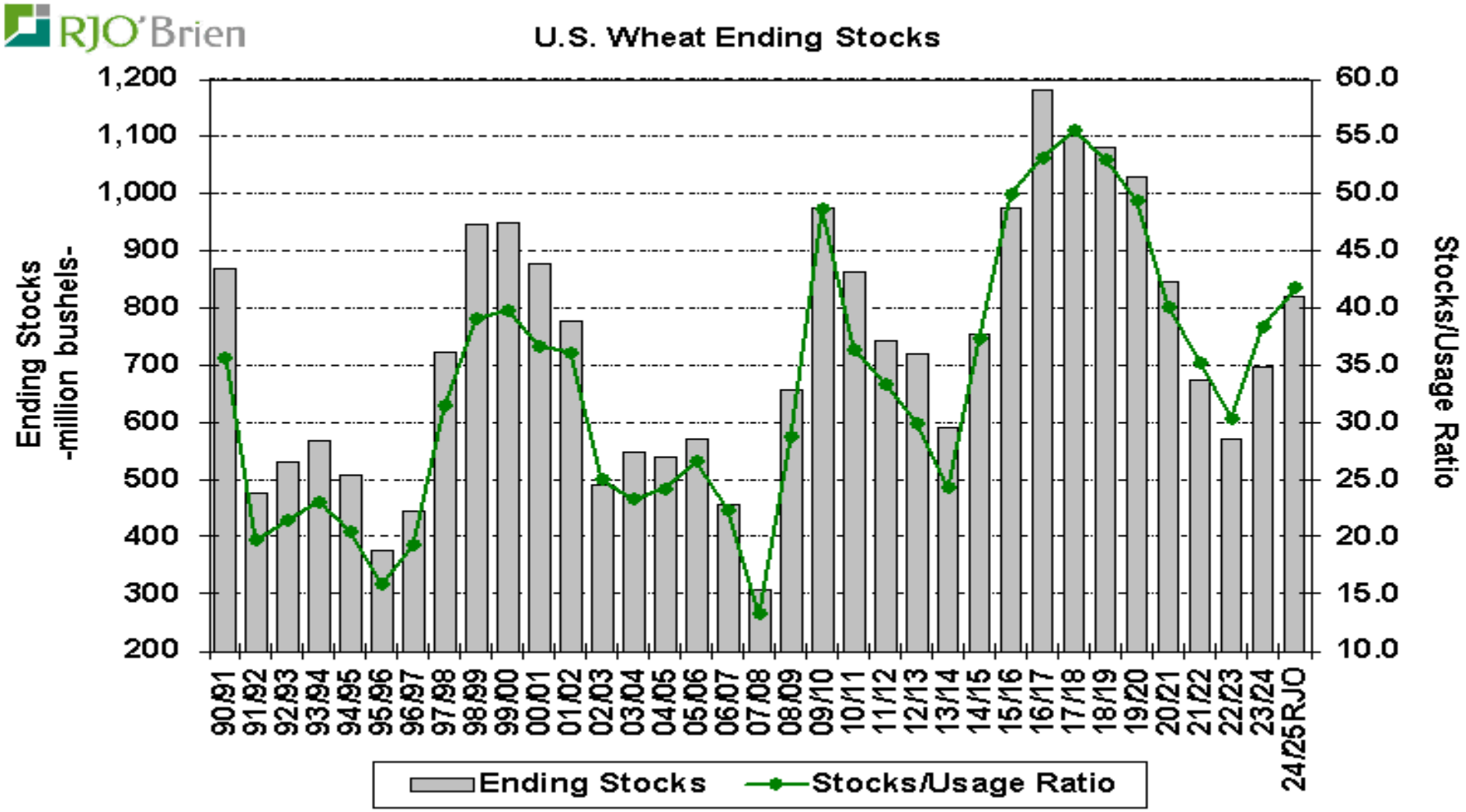
RJO U.S. Winter Wheat Crop Condition Weighted Index
-as of late November-
RJO美國冬小麥優良率加權指數-截至11月底



U.S. Wheat Export Total Commitments vs Annual Exports-as of late November
美國小麥截至11月底出口總承諾量 vs 年度出口量

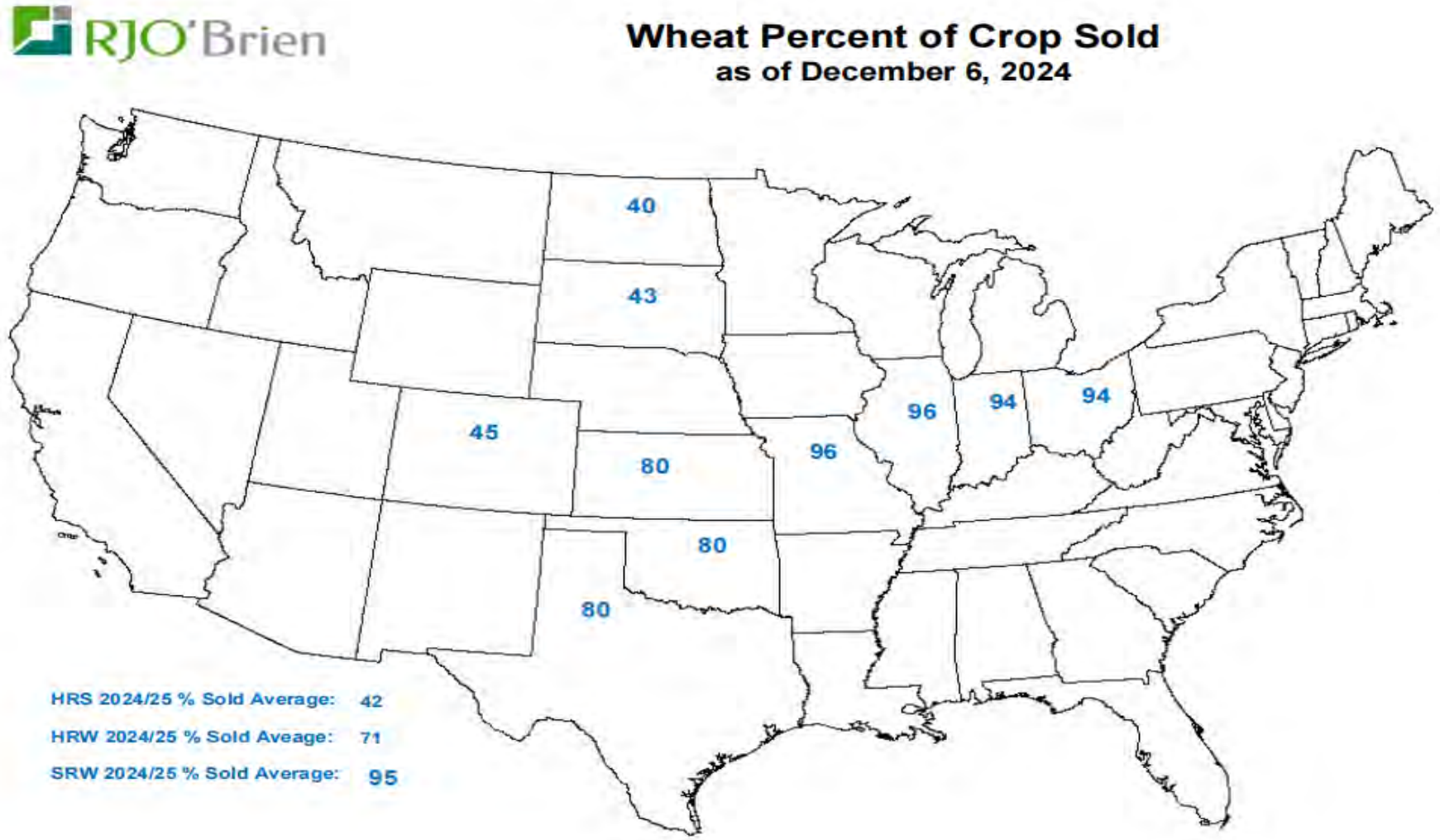


U.S. Wheat Ending Stocks
美國小麥年終庫存

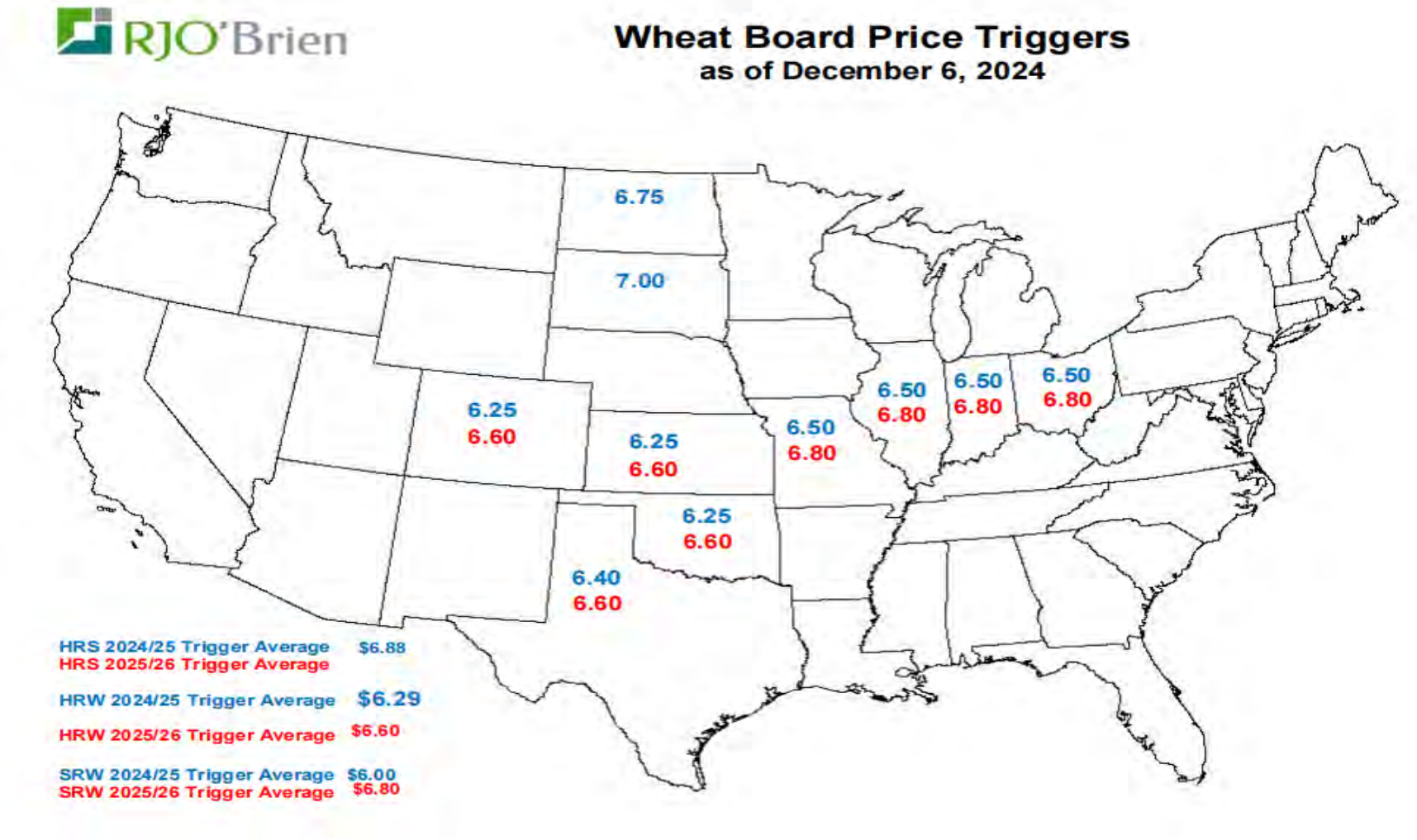


CBOT Wheat Weekly Chart
CBOT小麥週線圖

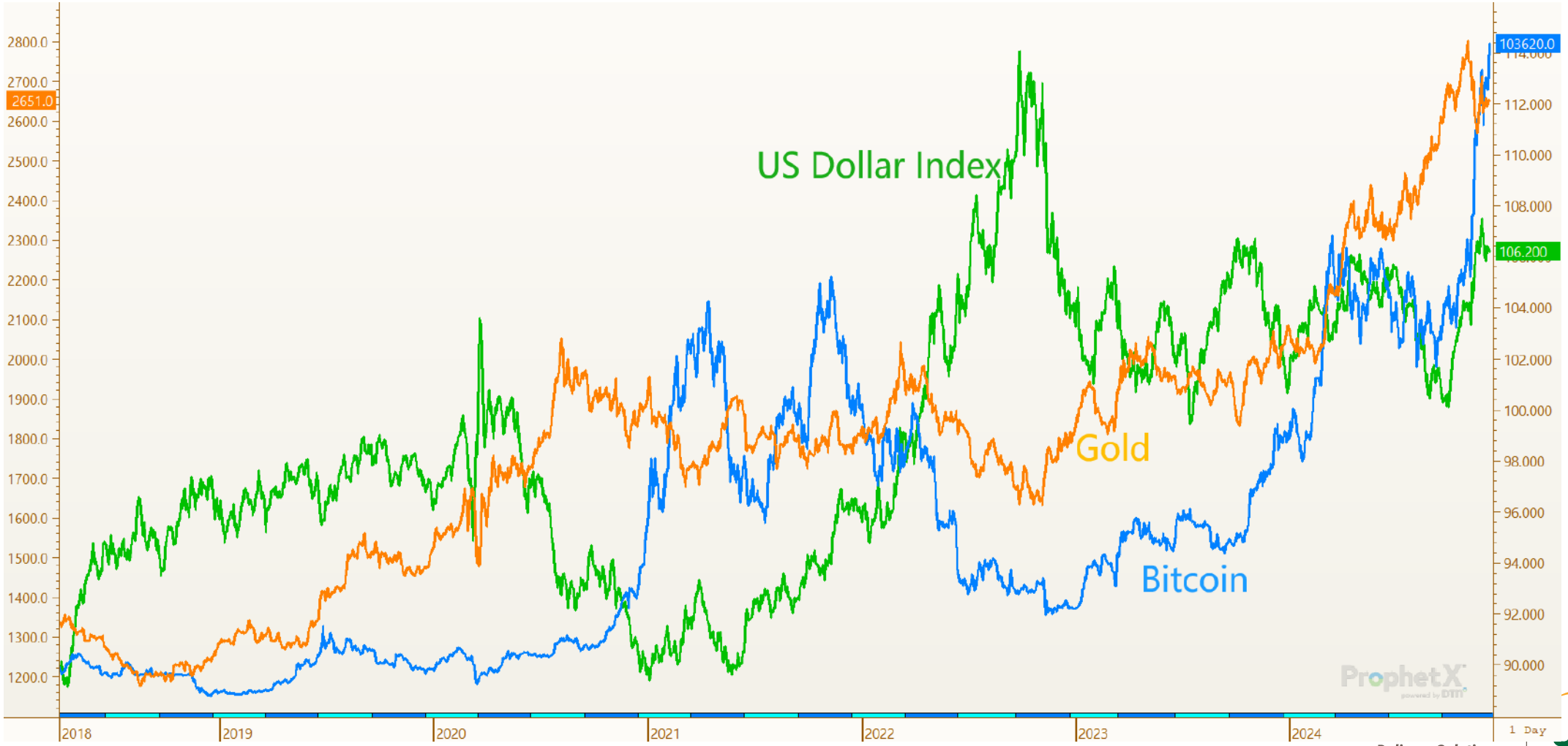
Wheat Percent of Crop Sold
美國農民小麥銷售進度-截至2024年12月6日



Wheat Board Price Triggers
美國小麥盤面觸發銷售價格-截至2024年12月6日

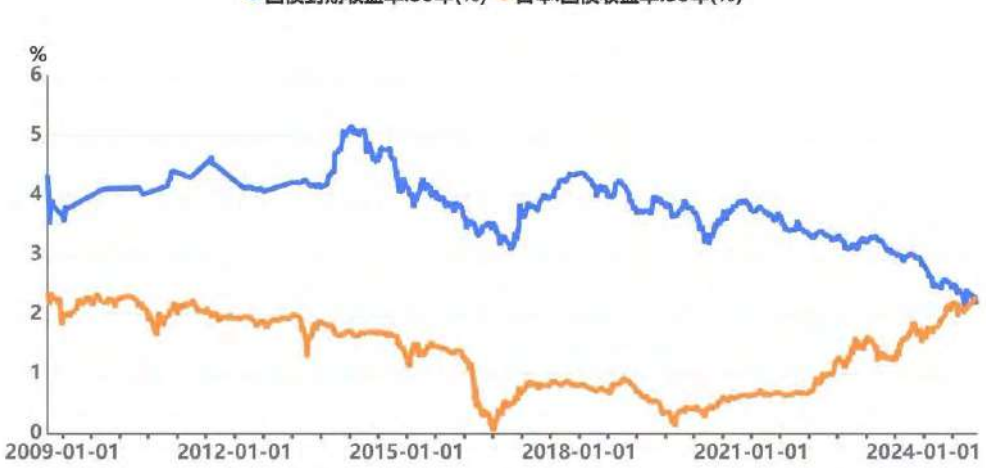


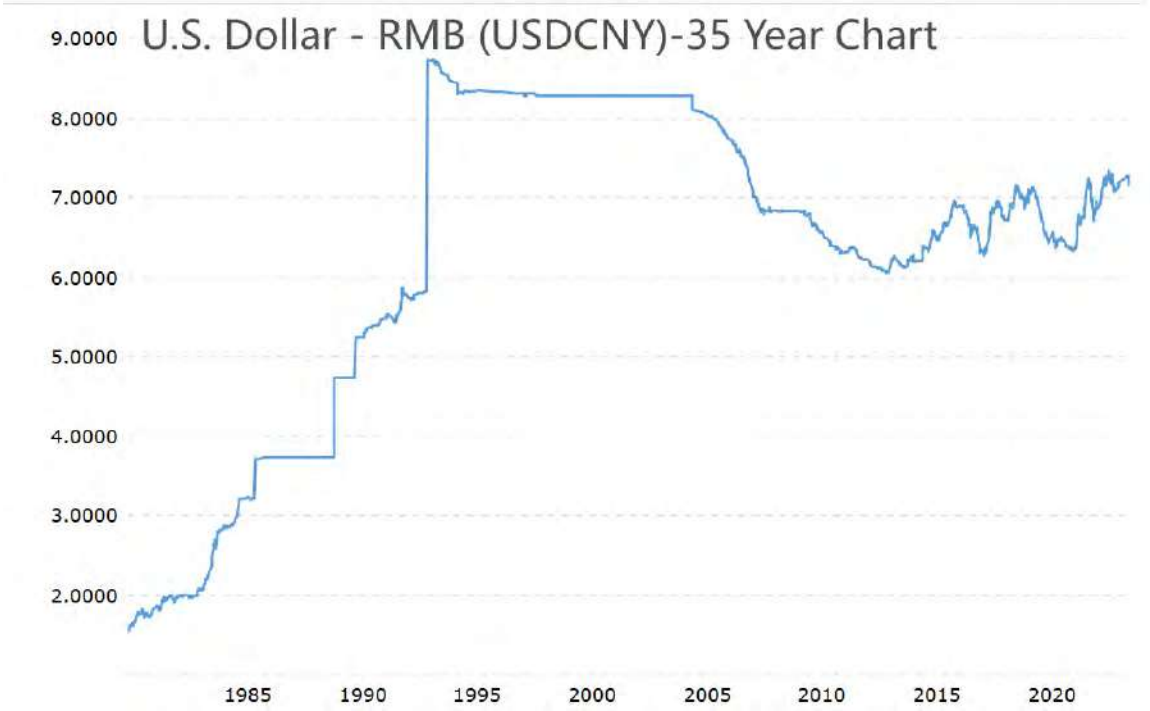
US Dollar Index vs Gold vs Bitcoin
美元指數 vs 黃金 vs 比特幣



Delivers Solutions

China vs US vs Japan treasury bond yield change
中國vs美國vs日本國債收益率變化





Summary & Outlook 總結與展望

Summary & Outlook
總結與展望

北美供應端1月報告前沒有變化，南美目前天氣良好，2024/25年度玉米和大豆豐產預期不斷加強；

美玉米走勢強於大豆，傳聞西班牙進口支撐基差，但上漲會遭遇農民賣貨；

中國目前大豆和豆粕供應相對充足，即將從平衡向明年一季度缺口過渡，商家備貨不多，希望跌下來再買，大豆能否跌至上次貿易戰的8美元/蒲(英斗)？關注美國榨利，巴西vs美國貼水的差異變化；

原油對植物油帶來壓力，而棕櫚油強勢拉動豆油，關注印尼賣貨節奏，目前美國豆油價格處於相對低位；

關注拉美天氣，川普的關稅政策，中國的宏觀刺激效果；

大跌大買，小跌小買。

Contact us
聯繫我們

Website **公司主頁**：www.rjobrien.com

Group email **團隊郵箱**：rjocn@rjobrien.com

Chicago China Team 芝加哥中國市場部

Add 地址：222 South Riverside Plaza, Suite 2700, Chicago, Illinois 60606

Tel 電話：(001) 312-373-5077

Beijing Rep. Office 美國羅傑歐期貨有限公司北京代表處

14/F Unit 37, China World Tower 1

1 Jianguomenwai Ave

Chaoyang District, Beijing 100004 China

北京朝陽區建國門外大街1號國貿寫字樓1座14層37室（100004）

Tel 電話：(86-10) 8454-9311或8454-9321


USSEC
U.S. SOYBEAN EXPORT COUNCIL
2024 Members
As of 03/15/2024


Thank you!
謝謝聆聽！

免責申明

本材料由R.J. O'Brien & Associates, LLC.的銷售或交易員工或代理人編制，屬或具有宣傳性質。本材料不是RJO研究部門編寫的研究報告。通過接受信息，您同意您是期貨市場的一名經驗豐富的用戶，能夠做出獨立的交易決策，並同意您在做出交易決策時沒有、也不會僅僅依靠此信息。

在某些司法管轄區，法律可能禁止或限制分銷。間接擁有此信息的人員應自行瞭解並遵守任何此類禁止或限制。如果您是間接收到本信息的，並且在您的司法管轄區內禁止未經登記的宣傳，則本信息中的市場評論不應視為宣傳

期貨和/或期權交易的損失風險很大，每個投資者和/或交易員必須考慮這是否是一項合適的投資。過去的表現，無論是實際的還是模擬的歷史策略測試所顯示的，都不能代表未來的結果。交易建議基於從交易和統計服務以及RJO認為可靠的其他來源獲得的信息。我們不保證此類信息的準確性或完整性，因此不應以此為依據。交易建議反映我們在特定時間的誠信判斷，如有更改，恕不另行通知。我們提供的建議不能保證會帶來有利可圖的交易。

USSEC Global Trade Program

OUR CONNECTED WORLD OF SOY

美國黃豆支持永續農業產業鏈

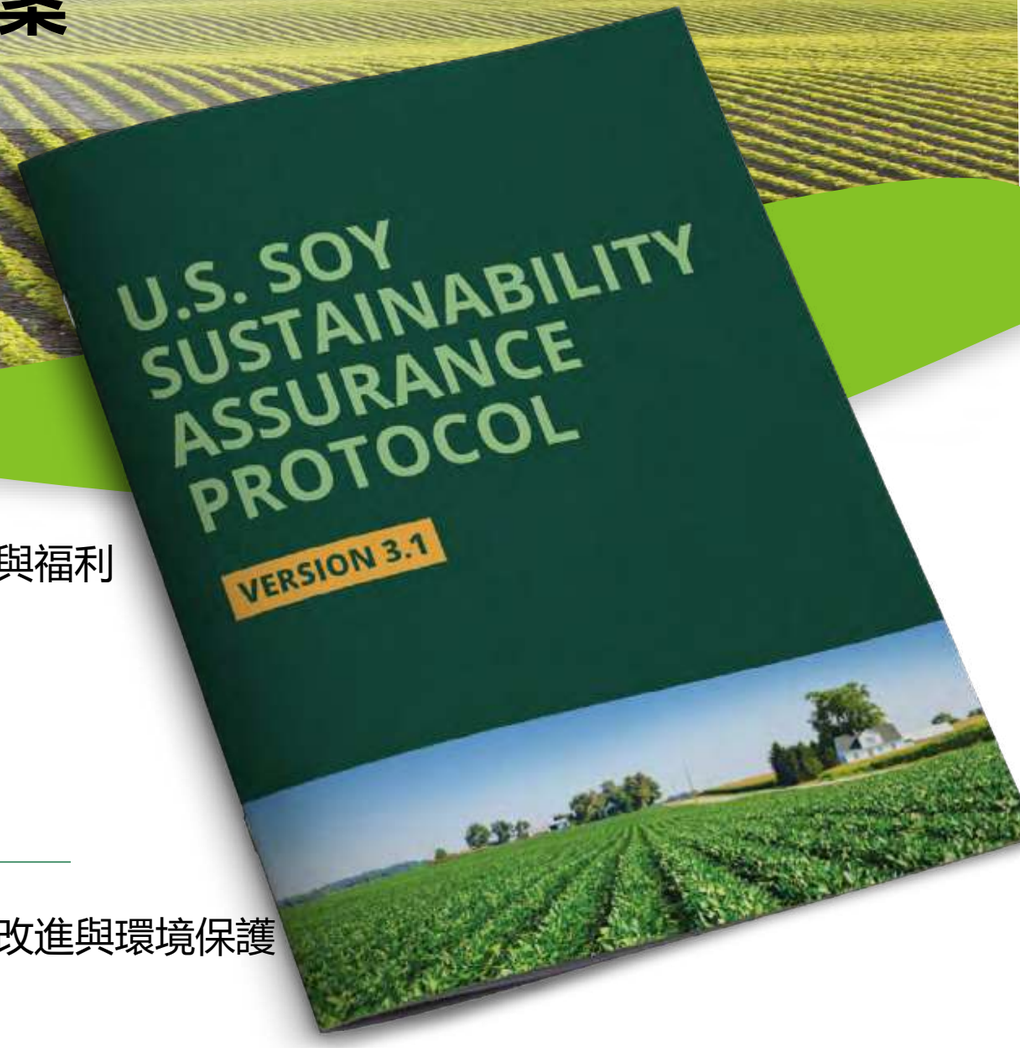
U.S. Soybeans Support Sustainable Agricultural Industry Chains

美國黃豆出口協會駐台代表　林裕祥
Julian Lin, Taiwan Market Director, U.S. Soybean Export Council (USSEC)

US SOY EXPERIENCES　FASA American Soybean Association International Marketing®　UNITED SOYBEAN BOARD™

美國黃豆永續保障計劃- 美國黃豆產業的解決方案

SSAP – A Solution Delivered by U.S. Soy Industry



指令一：生物多樣性、高碳匯生產

- 土地使用、敏感棲息地與生物多樣性

指令二：生產方式

- 土壤健康與產能
- 作物健康與農業最佳管理實踐
- 廢物與污染
- 溫室氣體排放、原油使用與空氣質量

指令三：公共與勞工健康與福利

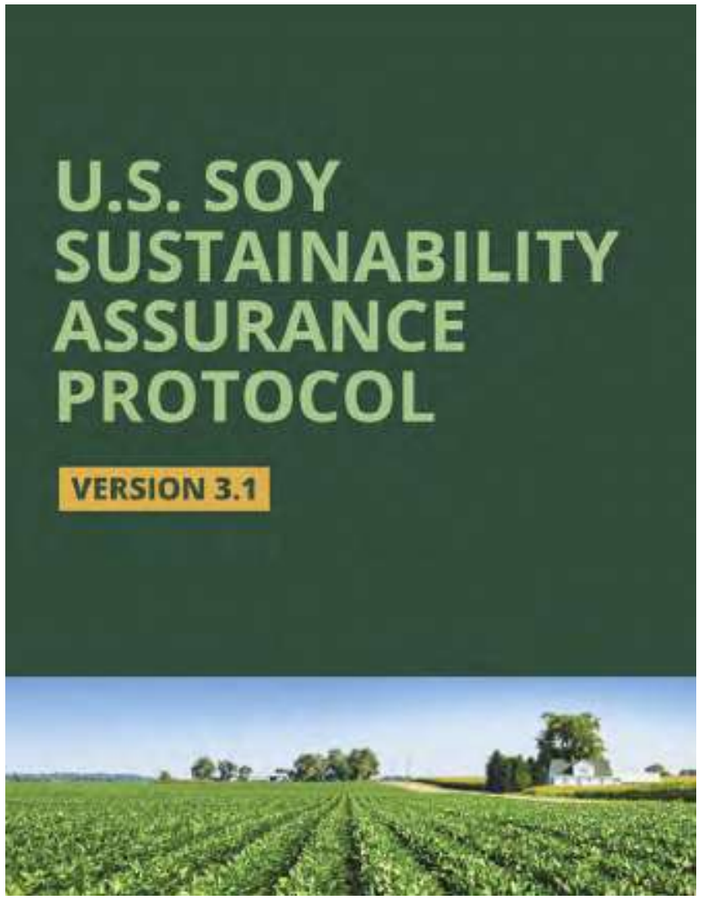
水的質量與體量
植物保護與養分管理
工作條件與勞工關係
工人與公共安全
社區關係

指令四：持續生產方式的改進與環境保護

持續改進

SOY EXPERIENCES

美國黃豆永續保障計劃 - 美國黃豆產業的解決方案
SSAP – A Solution Delivered by U.S. Soy Industry



- 指令一：生物多樣性、高碳匯生產
  - 土地使用、敏感栖息地與生物多樣性
- 指令二：生產方式
  - 土壤健康與產能
  - 作物健康與農業最佳管理實踐
  - 廢棄物與污染
  - 溫室氣體排放、原油使用與空氣質量
- 指令三：公共與勞工健康與福利
  - 水的質量與體量
  - 植物保護與養分管理
  - 工作條件與老公關係
  - 工人與公共安全
  - 社區關係
- 指令四：永續生產方式的改進與環境保護
  - 持續改進

一

SUSTAINABLE DEVELOPMENT GOALS

二

三

四

SOY EXPERIENCES

來源：美國可持續黃豆認證処

SSAP目前的全球認可一覽

FEFAC

TOKYO 2020

EU Renewable Energy Directive
SSAP-RED

The Consumer Goods FORUM

Global Seafood ALLIANCE

Best Aquaculture Practices

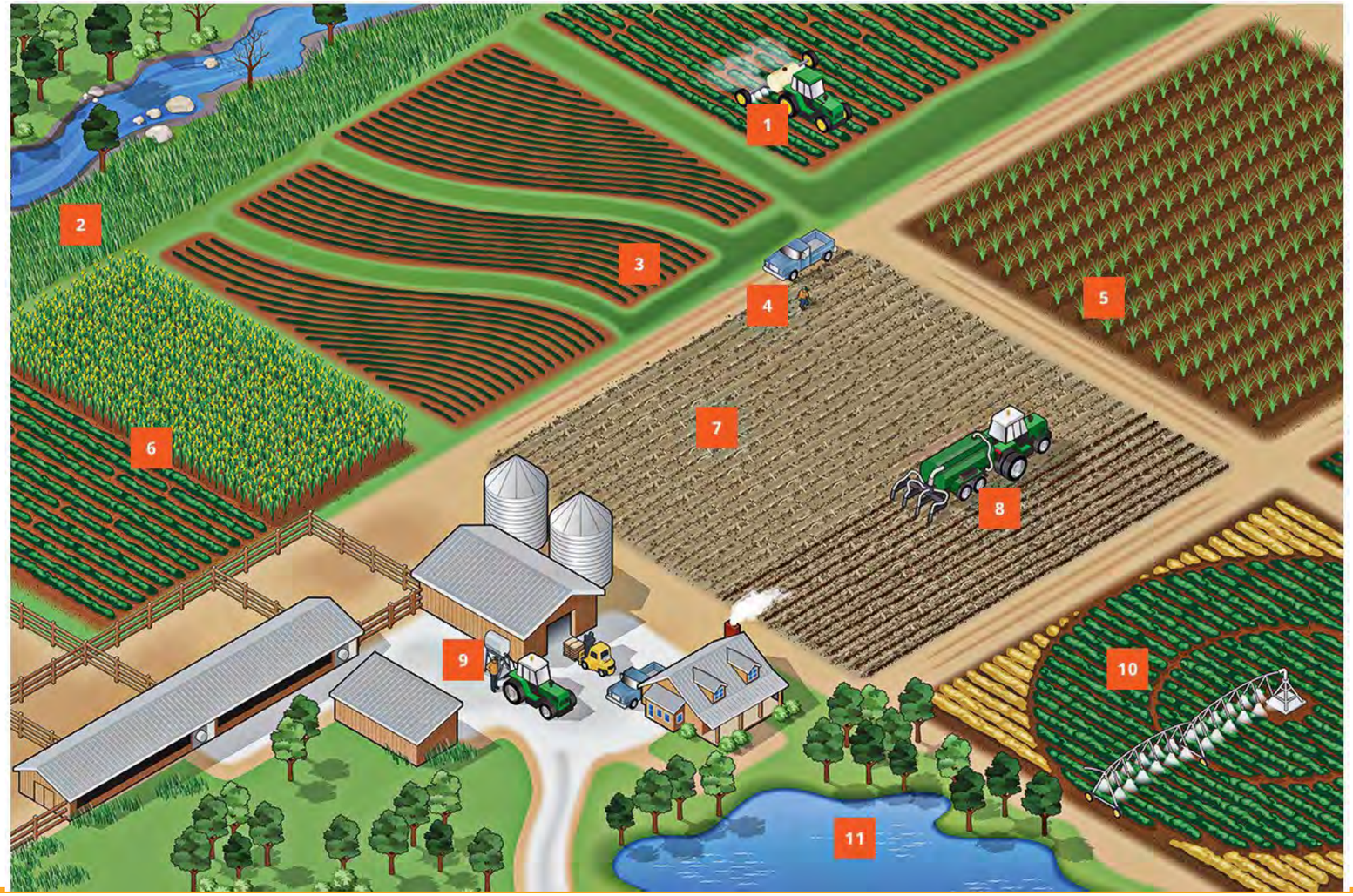
fsa Farm Sustainability Assessment

UK Roundtable on Sustainable Soya

SOY EXPERIENCES

來源：美國黃豆永續認證處

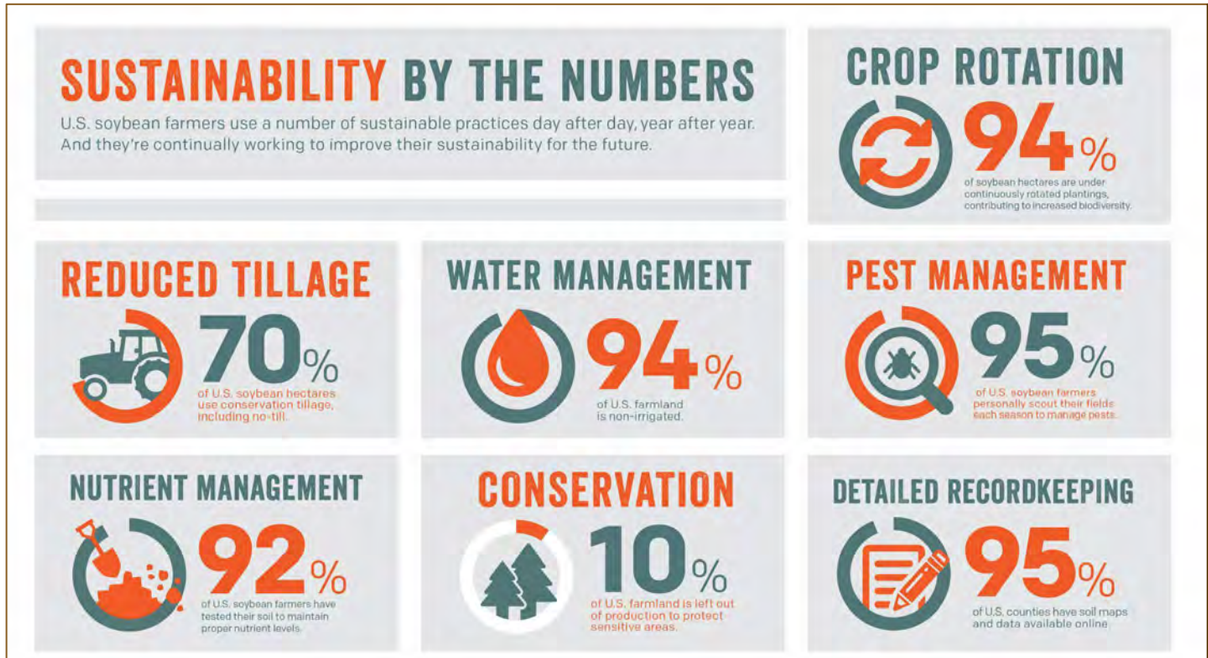
永續生產農作的主要框架

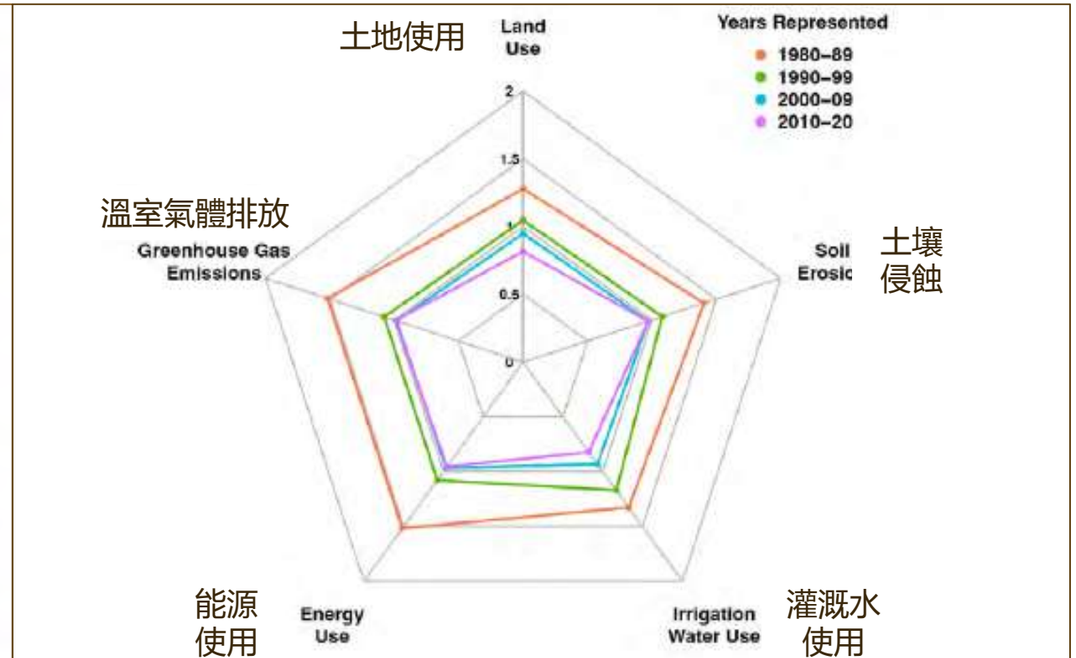


1. 精準施藥
2. 休耕還林
3. 修築梯田
4. 土壤勘察
5. 覆蓋性作物
6. 多樣耕作
7. 免耕法
8. 精準施肥
9. 節能減排
10. 科學灌溉
11. 人工蓄水

SOY EXPERIENCES

低碳足跡 - 數字中的美國黃豆永續成就與目標
U. S. Soy's Low Carbon Footprint by the Numbers





美國黃豆產業2025年目標

10%	25%	10%	10%
土地使用影響	水土流失	溫室氣體排放	能源使用效率

SOY EXPERIENCES

來源：美國可持續黃豆認證処

美國黃豆低碳足跡-
到台灣美國黃豆碳足跡(加入土地利用變遷因素) (二氧化碳當量/公斤)

土地利用變遷因素

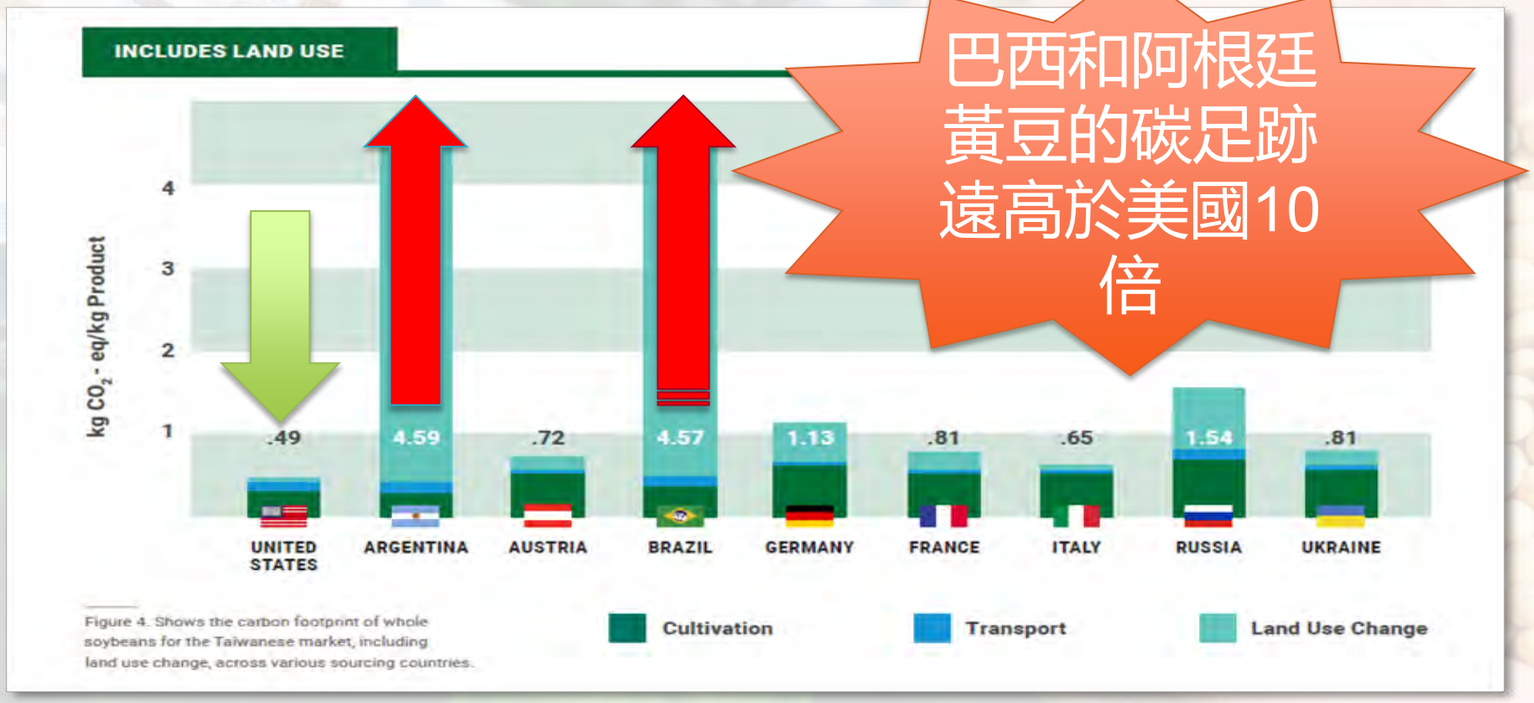


Figure 4. Shows the carbon footprint of whole soybeans for the Taiwanese market, including land use change, across various sourcing countries.

巴西和阿根廷黃豆的碳足跡遠高於美國10倍

Calculations are country averages. Specific supply chains may have different carbon footprint results.

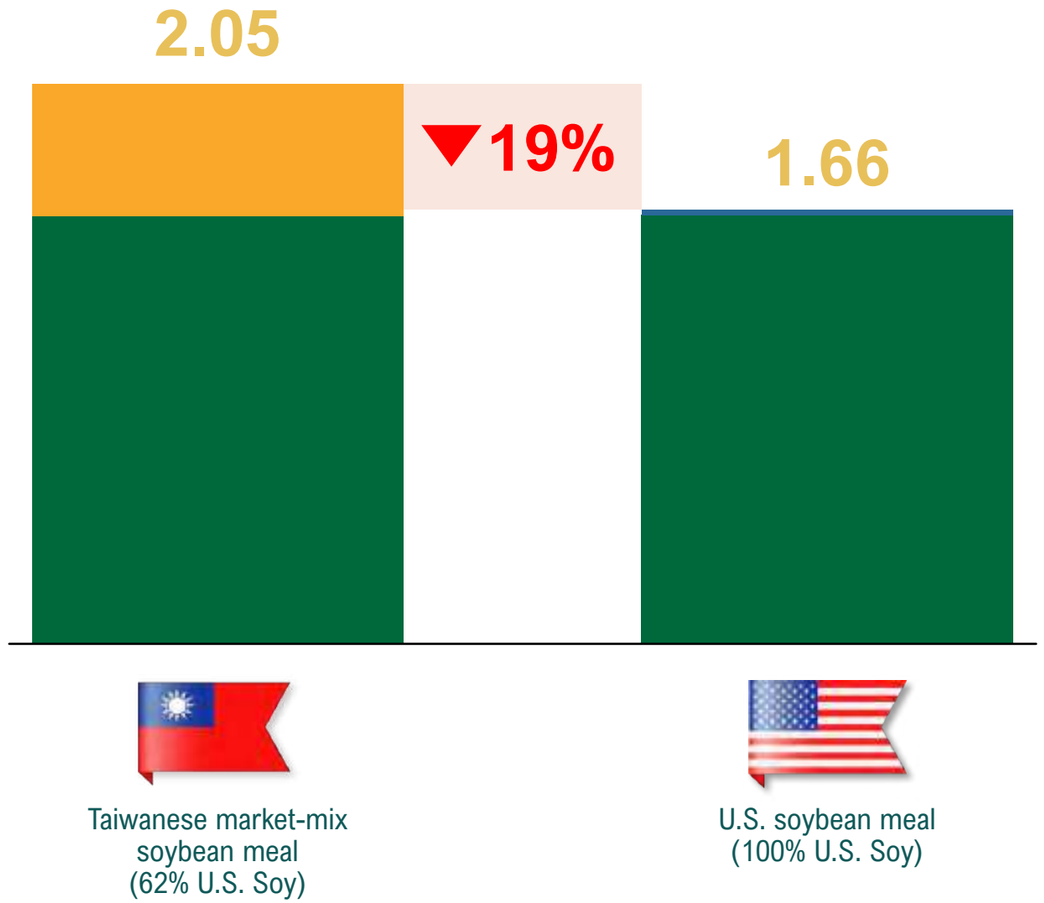
SOY EXPERIENCES

來源：荷蘭Blonk諮詢機構 https://blonksustainability.nl/tools

碳足跡結果基於國家平均統計數據，供應商特定信息可改變結果質量

Carbon footprint of poultry production in Taiwan

Carbon Footprint (including LUC) of kg CO_2 –ep/kg live weight chicken

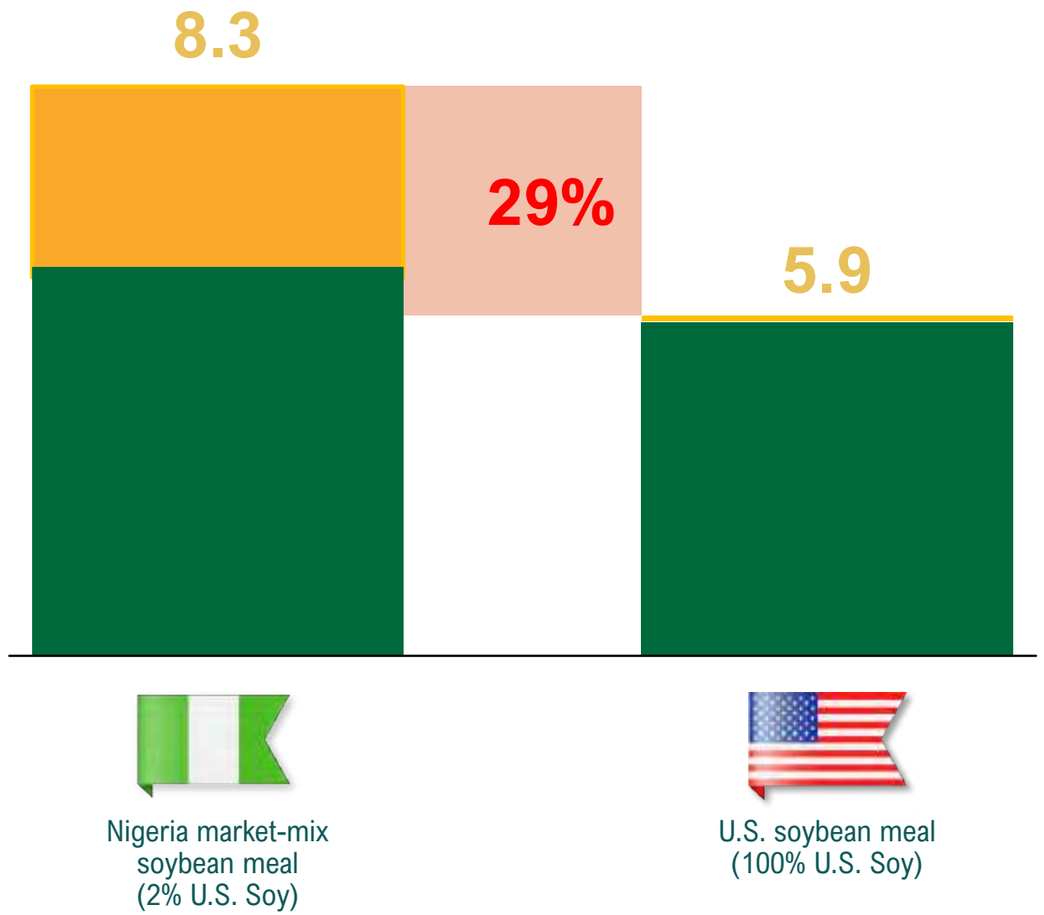


**Poultry production model is developed by Blonk Consultants based on 2019 FAO statistics about compound feed composition and industry expert judgement. System boundary is from cradle-to-farm gate. Background data on feed ingredient production is used from Agri-footprintTM 5.0®.*

Blonk CONSULTANTS

Carbon footprint of poultry production in Nigeria

Carbon Footprint (including LUC) of kg CO_2 –ep/kg live weight chicken



**Poultry production model is developed by Blonk Consultants based on 2019 FAO statistics about compound feed composition and industry expert judgement. System boundary is from cradle-to-farm gate. Background data on feed ingredient production is used from Agri-footprintTM 5.0®.*

國際認證
International Verification

- 黃豆出口永續認證處（SES）為美國黃豆提供詳細的貨運記錄和文件信息。
- 作為“計劃書”的開發者/所有者/執行者，黃豆出口永續性認證處每年將根據授權審核機構提供的數據信息，確定符合本“保障計劃”的美國黃豆總量。
- 對所有在美國種植的黃豆、以及出口的美國黃豆產品，包括基改、非基改和有機產品的永續生產進行驗證。
- 永續生產的美國黃豆”的可供量銷售年度由每年的9月1日開始。
- 對所有黃豆產品，銷售年度起止時間相同。
- SES將在網路上**免費**提供“永續生產美國黃豆”的證書。


Certificate of
SUSTAINABILITY
ACCORDING TO THE U.S. SOYBEAN SUSTAINABILITY ASSURANCE PROTOCOL
This is to verify that soybeans or soy products described herein were produced in compliance with U.S. laws, regulations, production practices, and audit process as listed in the U.S. Soy Sustainability Assurance Protocol.
NAME OF SELLER
USSEC TEST
SELLER REPRESENTATIVE
TARIK ELURI
CUSTOMER NAME
GFLI TEST CUSTOMER 1
CERTIFICATE NUMBER
SES-SSAP-US24-000000287
CARBON FOOTPRINT: 479.288 KG CO2 EQ
METRIC TONS
1.000
DATE OF DELIVERY
JANUARY 11, 2024
DATE OF CERTIFICATION
JANUARY 10, 2024
CARRIER IDENTIFICATION
TEST
PRODUCT
SOYBEAN
SES
SOY EXPORT SUSTAINABILITY, LLC
CERTIFICATE VALIDATION AND CODE
2622799D3C08900E81F0

在本計劃下出口的每批合規且記錄在數據庫中的美國黃豆都將生成一份獨一無二的證書。

SOY EXPERIENCES

利用網路申請的黃豆出口永續生產證書（SES）發證流程

- 出口商均可申請，無需費用
- 出口商將其作為貨物單證的一部分與進口商共用
- 已認證黃豆之文件效力可以涵括其下游產品-豆漿、豆腐、黃豆油、黃豆粉和飼料等製品
- 證書僅對裝貨進行詳細說明 – 不提供可追溯性，總量平衡
- 證書針對特定裝運批次發放，且在銷售管道內實現4次轉讓。
- 僅針對在美國採購並裝運的黃豆發放。
- 進口商需提前向出口商申請證書
- 裝運期開始前7天或裝運期後60天內可以頒發永續生產證書，可轉讓證書在裝運期後180天內可申請。

SOY EXPERIENCES

美國黃豆永續生產證書及標章申請流程

進口商採購美國黃豆後，可向出口商索取”永續認證證書"

出口商準備文件

與到貨文件一同抵台

進口商收到證書後，可向美國黃豆出口協會申請標章

進口商需準備產品包裝及標章輸出給協會審核

協會審核通過並簽署文件即可使用於產品上

SUSTAINABLE U.S. SOY™

SOY EXPERIENCES

將永續價值更多地分享給產業鏈下游
Transferable Certificates Empower Green Development of Agricultural Chain

2022年9月SSAP認證證書實現可轉讓，隨著黃豆交易的進行，一份專屬的認證證書可以持續傳遞給下游客戶一至四次。
以往該認證證書僅向採購美國黃豆的最上游買方簽發，如今後續買家也可以其名義獲得該證書

SOY EXPERIENCES

美國黃豆永續認證體系助力打造低碳環保的綠色價值鏈

U.S. SSAP Certification Program to Facilitate Building a Green Value Chain

SUSTAINABLE U.S. SOY™

黃豆農戶 → 出口企業 → 進口企業

進口企業 → 食品企業 → 銷售平臺

進口企業 → 壓榨企業 → 飼料企業 → 養殖企業 → 加工企業 → 銷售平臺

銷售平臺 → 消費者

SOY EXPERIENCES

台灣黃豆進口商申請證書和標章的好處

- 向消費者和股東宣傳　貴公司在採購程序上也盡到自己社會責任
- 加工業者將其生產的產品貼標-“美國黃豆永續生產標章”吸引消費者了解他們所食用的產品是運用永續生產、保護地球方式耕作的原料製作。不論是基因改造黃豆或非基因改造黃豆都可以申請
- 與本協會簽訂一份協定就可以使用”美國黃豆永續生產”標章，增加品牌競爭力和消費者認同。
- 本協會不定期舉辦實體或網路活動來協助申請標章的廠商。

我們在全球經認證的產品
Certified Products Worldwide

我們的標識

SUSTAINABLE U.S. SOY

SOY EXPERIENCES

來源：美國永續黃豆認證處

Who Applied the Certificates and Logo

More than 11 Major Soy Related Companies applied

Central Union Oil Corp. 中聯油脂

Ever Light Oil Industrial Co., Ltd. 長輝事業

Formosa Oilseed Processing Co., Ltd. 福懋油脂

Fwusow Industry Co., Ltd. 福壽實業

Great Wall Enterprise Co., Ltd. 大成長城

Tai Hwa Oil Industrial Co., Ltd.泰華油脂

Taisun Enterprises Co., Ltd 泰山企業

Taiwan Sugar Corp. 台灣糖業

TTET Union Corp 大統益

Uni-President enterprise Co., Ltd 統一企業

Wei-Chuan Foods Corp. 味全公司

And….

- Central Union Oil Corp. 中聯油脂
- Farm Around You 農場晃晃/吉升飼料
- Fung Jung Industry Corp. 峰成食品
- Fwusow Industry Co., Ltd.福壽實業
- Great Wall Enterprise Co., Ltd.大成長城
- Huang Feng Food Co., Ltd. 惠豐食品
- Yidou Industry Co., Ltd. - 一豆實業
- Taisun Enterprises Co., Ltd 泰山企業
- TTET Union Corp 大統益
- Rei-Yuan Soy Food Co., Ltd. 瑞源食品
- Wei-Chuan Foods Corp. 味全食品

90% of U.S. soy imported to Taiwan are with SSAP certificates

SUSTAINABLE U.S. SOY™

Fed with SUSTAINABLE U.S. SOY™

WeiChuan soymilk

TTET Food Grade GMO Soy

EXPERIENCES


SUSTAINABLE
U.S. SOY
SOLLA S.A.
SUSTAINABLE
U.S. SOY
Ragasa Industrias S.A. de C.V.


USSOY
TVOA
USSEC
ASA
2024 / 25美
黃豆市場展望會
Soy Mar
tlook
ference

補充文章及資料

美國黃豆出口協會
Line 官方帳號

美國黃豆出口協會
SUSS 網站

- https://www.foodnext.net/tv/tvmovie/tvpublish/paper/5616131667
- https://www.foodnext.net/issue/paper/5111128315
- https://www.foodnext.net/science/scsource/paper/5975128339

As of 03/15/2024

USSEC Global Trade Program

OUR CONNECTED WORLD OF SOY

謝謝聆聽 Thank You

US SOY EXPERIENCES

ASA American Soybean Association International Marketing®

UNITED SOYBEAN BOARD™

美國優質黃豆蛋白：從高營養利用到高生產價值

US Superior Soybean Protein: From High Nutrition Utilization to High Production Value

劉昌宇

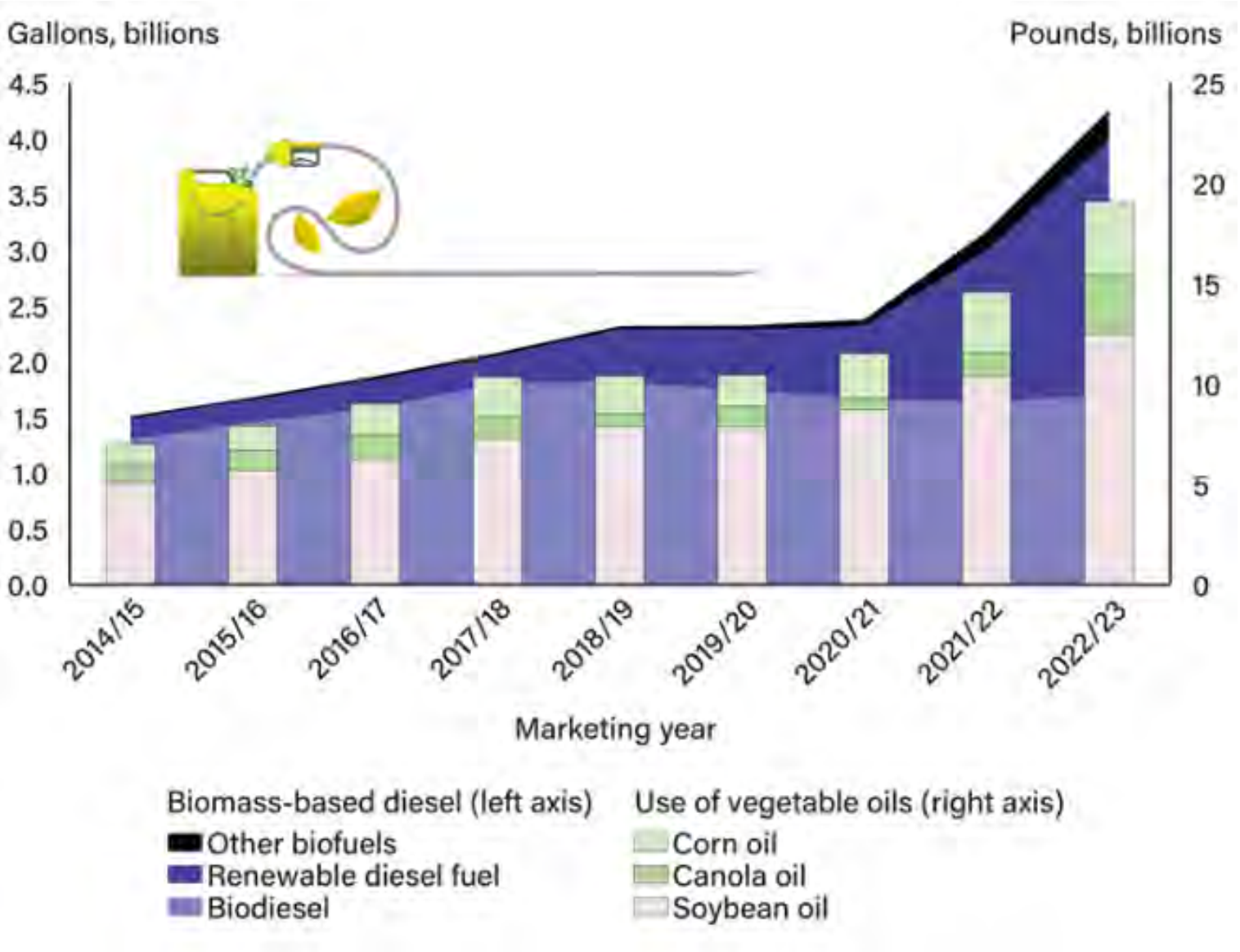
2024.12.10-11

中國持續調降飼料黃豆粕用量

- 中國進口全球黃豆交易量的60%，達9000萬噸，主要來自美國、巴西。(1噸黃豆=0.75噸黃豆粕)
- 2022飼料黃豆粕比例為14.5%，2025目標為13%，2030目標可能是12%。
- 2025黃豆進口量可能降為8200萬噸；同時增加棉仔粕、葵花子粕、合成蛋白質用量。
- 黃豆進口量降低，黃豆油生產減少，必須增加棕梠油進口。

Biomass-based diesel production and vegetable oil use

2014/15-2022/23



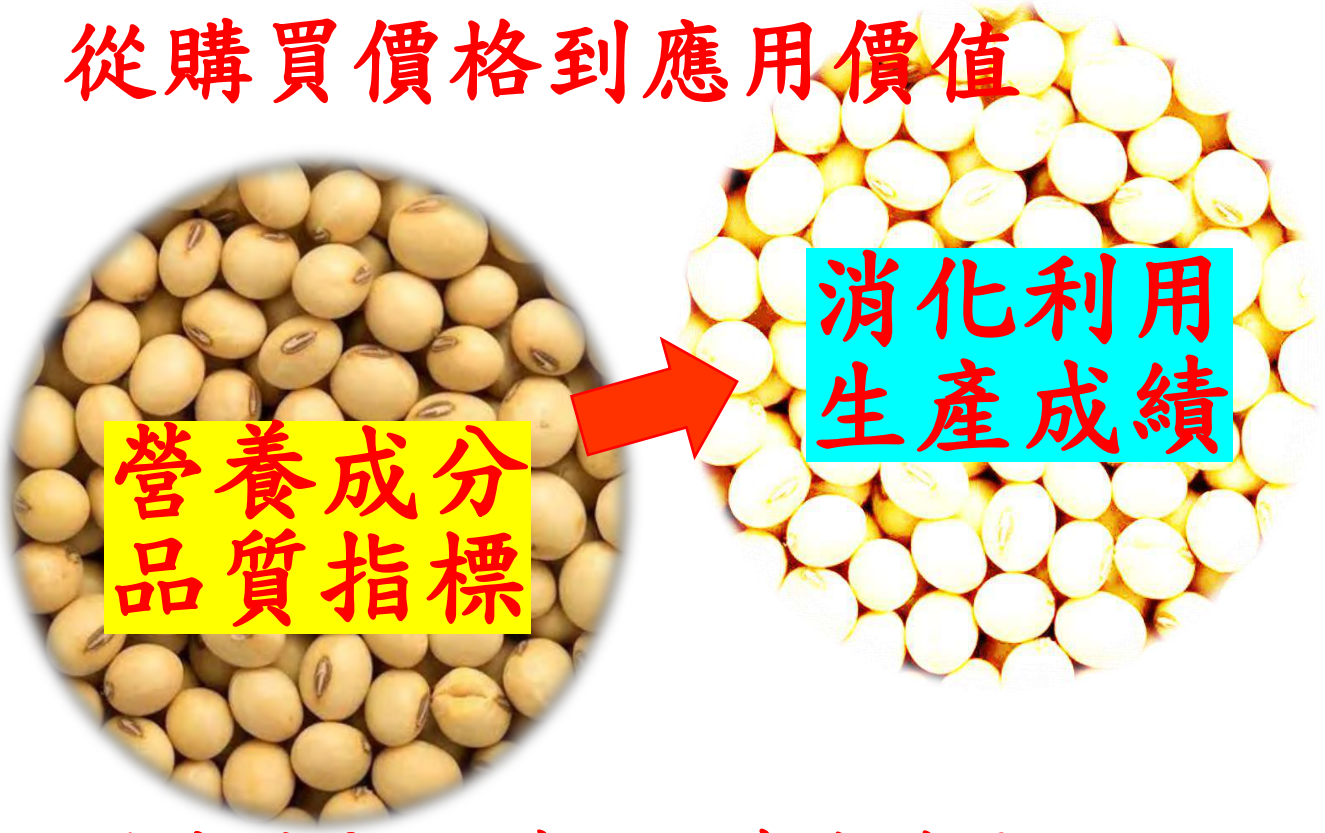
黃豆/黃豆粕提供畜禽能量、胺基酸與功能成分

影響黃豆/黃豆粕營養與品質因素：
品種、土壤、氣候、種植收穫時間、
技術、收穫處理倉儲、運輸、加工

結構(纖維/醣、蛋白質、脂肪)
成分(醣、蛋白質、油脂、維礦)
利用率(能量、胺基酸)

不同產地來源黃豆比較

從購買價格到應用價值



1. 各報告/不同實驗室存在差異
2. 消化蛋白質需要能量，過量蛋白質形成氨氮臭氣；胺基酸呢?

Chemical composition and amino acid digestibility of soybean meal produced in the United States, China, Argentina, Brazil, or India[1]

L. V. Lagos and H. H. Stein[2]

Division of Nutritional Sciences, University of Illinois at Urbana-Champaign, 61801

美國、中國、阿根廷、巴西或印度生產黃豆粕的化學組成與胺基酸消化率

(J. Anim. Sci. 2017)

美國研究報告

蛋白質：巴西、印度
胺基酸：印度
胺基酸消化率：美國
消化率變異：美國、巴西

%	中國	阿根廷	巴西	美國	印度
粗蛋白質	45.1	46.7	49.3	47.3	49.5
粗脂肪	1.25	1.67	1.70	1.66	1.19
蔗糖	8.91	7.56	5.52	8.59	4.69
棉子糖	1.18	1.47	1.54	1.45	1.98
水蘇糖	5.55	5.23	4.47	6.47	5.09
離胺酸	2.85	2.96	3.05	3.07	3.12
SID	92.1	90.0	90.6	92.9	90.8
蛋胺酸	0.61	0.63	0.64	0.65	0.66
SID	94.4	93.5	93.6	94.7	92.7
羥丁胺酸	1.62	1.77	1.80	1.78	1.82
SID	90.2	88.5	88.4	90.8	88.2

Chemical composition, protein quality and nutritive value of commercial soybean meals produced from beans from different countries: A meta-analytical study

M.A. Ibáñez[a,*], C. de Blas[b], L. Cámara[b], G.G. Mateos[b,*]

[a] Departamento de Economía Agraria, Estadística y Gestión de Empresas, ETSIAAB, Universidad Politécnica de Madrid, 28040, Madrid, Spain
[b] Departamento de Producción Agraria, ETSIAAB, Universidad Politécnica de Madrid, 28040, Madrid, Spain

購自不同國家黃豆來源黃豆粕的化學組成、蛋白質品質及營養價值：大數據分析研究

(Anim. Feed Sci. Tech. 2020)

歐洲研究報告

蛋白質：巴西
胺基酸：美國
能量：美國

%	阿根廷	巴西	美國	印度
粗蛋白質	45.5	47.0	46.4	46.3
粗脂肪	1.66	1.78	1.67	1.11
蔗糖	6.41	5.24	6.99	4.19
棉子糖	1.15	1.33	0.95	1.70
水蘇糖	4.15	3.80	4.77	3.97
粗纖維	4.32	5.03	3.88	6.55
離胺酸	2.82	2.88	2.89	2.83
蛋胺酸	0.62	0.63	0.64	0.61
羥丁胺酸	1.77	1.80	1.80	1.75
AME_n(MJ/kg)	8.57	8.77	8.98	8.32
淨能(MJ/kg)	8.21	8.21	8.29	7.91

黃豆粕組成與營養成分的相關性

與表代謝能相關性(2014)	r	P
KOH蛋白質消化率	0.01	0.98
粗蛋白質	0.18	0.20
粗脂肪	0.38	0.01
粗纖維	-0.64	0.0001
粗灰分	-0.63	0.0001
中洗纖維	-0.69	0.0001
不溶NSP	-0.63	0.0001
總NSP	-0.68	0.0001

與粗蛋白質相關(2020)	r	P
粗纖維	-0.23	0.003
中洗纖維	-0.675	0.013
胱胺酸	-0.011	0.051
甲硫胺酸	-0.0073	0.101
羥丁胺酸	-0.032	0.001
5主要胺基酸	-0.052	0.012

Apparent metabolizable energy and ileal amino acid digestibility of commercial soybean meals of different origins in broilers

L. Aguirre ,* L. Cámara ,* A. Smith,† G. Fondevila ,* and G. G. Mateos*,1

*Departamento de Producción Agraria, ETSIAAB, Universidad Politécnica de Madrid, 28040 Madrid, Spain; and †DSM Nutritional Products (UK) Ltd, Heanor, Derbyshire, United Kingdom

不同黃豆粕來源在肉雞的表代謝能和迴腸胺基酸消化率

(Poultry Science 2024) 歐洲研究報告

不同黃豆粕來源的主要化學成分

%	阿根廷	巴西	美國
粗蛋白質	45.9	46.9	46.0
CV%	1.62	1.92	0.85
粗脂肪	2.10	2.40	2.51
粗纖維	4.52	4.55	4.61
CV%	4.74	8.61	8.14
中洗纖維	11.2	11.7	11.2
灰分	6.40	6.40	6.43
澱粉	0.49	0.42	0.47
蔗糖	6.47	5.21	6.28
棉子糖(低聚糖)	1.69	1.85	1.54
CV%	14.0	20.6	9.8
水蘇糖(產氣)	4.78	4.20	4.66
CV%	6.72	12.8	7.65

不同黃豆粕來源的胺基酸成分

%	阿根廷	巴西	美國
離胺酸	2.83	2.88	2.87
CV%	1.20	2.35	1.11
甲硫胺酸	0.61	0.62	0.63
胱胺酸	0.63	0.68	0.65
羥丁胺酸	1.81	1.84	1.83
CV%	1.23	1.78	1.39
色胺酸	0.63	0.63	0.63
精胺酸	3.37	3.48	3.39
CV%	1.11	2.75	1.10
異白酸	2.14	2.23	2.14
結胺酸	2.24	2.30	2.22
主要五胺基酸	6.51	6.65	6.62

不同黃豆粕來源蛋白質中胺基酸比例

%	阿根廷	巴西	美國
離胺酸	6.17	6.13	6.25
甲硫胺酸	1.32	1.33	1.37
胱胺酸	1.37	1.44	1.42
羥丁胺酸	3.95	3.92	3.97
色胺酸	1.38	1.35	1.38
精胺酸	7.34	7.42	7.37
異白酸	4.66	4.76	4.65
結胺酸	4.89	4.90	4.83
主要五胺基酸	14.2	14.2	14.4

不同黃豆粕來源的蛋白質品質指標

項目	阿根廷	巴西	美國
尿素酶活性(△pH) 0.05-0.3	0.061	0.178	0.189
CV%	44.1	42.8	80.7
胰蛋白酶抑制活性(mg/g) <2.5	1.75	1.48	2.16
CV%	18.0	25.4	19.1
蛋白質分散指數 PDI % 40-45	10.1	11.6	14.1
C%	20.2	12.5	22.6
鹼蛋白質溶解度 KOH % 78-84	70.8	71.5	77.6
CV%	7.38	7.71	5.22
活性離胺酸1 hRLys % >90	88.5	88.0	88.0
CV%	1.39	1.96	1.25
活性離胺酸2 fRLys % >90	94.6	91.5	94.0
CV%	2.23	3.29	1.79

肉雞表代謝能與標準迴腸胺基酸消化率

%	阿根廷	巴西	美國
表代謝能	2444	2444	2500
CV%	7.93	6.68	5.87
氮修正表代謝能	2282	2277	2334
標準迴腸消化率			
離胺酸	93.0	92.1	93.5
CV%	2.07	2.30	1.80
甲硫胺酸	96.4	96.4	96.6
胱胺酸	80.5	79.0	81.3
羥丁胺酸	90.2	89.6	90.5
色胺酸	92.2	91.7	92.1
精胺酸	94.0	93.6	94.7
異白胺酸	92.5	92.4	93.1
結胺酸	92.6	92.3	93.2
主要五胺基酸	91.0	90.2	91.4

不同黃豆粕來源對肉雞生產表現(17-21日齡)的影響

項目	阿根廷	巴西	美國
採食量(g/d)	69.2	70.3	71.4
能量攝取(kcal/d)	158	160	166
CV%	9.66	7.49	6.93
增重(g/d)	33.9	35.2	37.5
CV%	9.07	9.45	9.82
飼料換肉率(g/g)	2.05	2.01	1.91
CV%	7.36	7.36	7.75
能量換肉率	4.69	4.57	4.46
CV%	10.3	7.79	7.64
標準迴腸胺基酸攝取量(mg/d)			
離胺酸	871	887	909
甲硫胺基酸	193	201	206

研究報告結論

- 根據化學組成與營養值分析顯示，美國黃豆粕的能量、胺基酸利用率都高於南美黃豆粕；且變異小、穩定性高。
- 黃豆粕原料的特性充分表現在飼料配方營養、肉雞生產表現。
- 因此，在原料採購、配方設計時應同時考量分析數據和變異，以獲取動物最佳表現與飼料最佳經濟效益。

The value of near-infrared spectroscopy: using nutritional information of soybean meals by country of origin in feed formulation

T. H. Yabuta and E. O. Oviedo-Rondón [1]

Prestage Department of Poultry Science, North Carolina State University, Raleigh, NC, USA

近紅外光譜儀 (NIRS)價值：在飼料配方中應用不同國家黃豆粕來源的營養資訊

(J. Appl. Poult. Res. 2024)

美國研究報告

Items	Solvent-extracted soybean meal					
	2020			2021		
	Argentina	Brazil	USA	Argentina	Brazil	USA
Crude protein, %	45.68	46.23	46.17	45.81	46.47	45.60
Ether extract, %	1.67	1.84	1.74	1.27	1.54	1.47
Crude fiber, %	3.56	4.47	4.07	3.50	4.43	4.03
Ash, %	6.42	6.37	6.27	6.46	6.38	6.21
AME, kcal/kg	2,486	2,479	2,575	2,493	2,464	2,593
AMEn, kcal/kg	2,254	2,246	2,338	2,260	2,234	2,352
Digestible AA						
Lys, %	2.48	2.53	2.52	2.52	2.54	2.48
Met, %	0.58	0.56	0.57	0.58	0.57	0.56
Cys, %	0.53	0.51	0.53	0.55	0.52	0.52
Thr, %	1.55	1.54	1.54	1.56	1.55	1.52
Trp, %	0.58	0.57	0.57	0.59	0.59	0.57
Val, %	1.91	1.91	1.92	1.92	1.94	1.90
Ile, %	1.96	2.00	1.97	1.97	2.00	1.95
Leu, %	3.13	3.19	3.15	3.16	3.21	3.10
Phe, %	2.08	2.12	2.10	2.10	2.12	2.07
His, %	1.02	1.03	1.03	1.03	1.04	1.02
Arg, %	3.03	3.10	3.14	3.08	3.11	3.10
Minerals [2]						
Ca, %	0.34	0.31	0.39	0.34	0.31	0.39
Available P, % [3]	0.27	0.25	0.27	0.27	0.25	0.27

不同黃豆粕來源對肉雞料價格與黃豆粕價值的影響

	飼料價格 ($/MT)	黃豆粕相對價值 ($/MT)	額外價值 ($/MT)
美國	381.95	(471.50)	
阿根廷	387.57	454.89	16.61
巴西	387.37	455.16	16.34

與南美黃豆粕比較，應用美國黃豆粕配製白羽肉雞飼料(小雞、生長、肥育)，可以降低價格US 2.76-8.95美元/噸料；每噸美國黃豆粕的價值較南美高US 16.48美元/噸。

不同黃豆粕來源對蛋雞料價格與黃豆粕價值的影響

	飼料價格 ($/MT)	黃豆粕相對價值 ($/MT)	額外價值 ($/MT)
美國	325.90	(471.50)	
阿根廷	328.36	461.32	10.18
巴西	330.09	454.61	16.89

與南美黃豆粕比較，應用美國黃豆粕配製蛋雞飼料(雞種2X產蛋料2)，可以降低價格US 0.77-13.45美元/噸料；每噸美國黃豆粕的價值較南美高US 13.54美元/噸。

Effects of Three Different Soybean Meal Sources on Layer and Broiler Performance

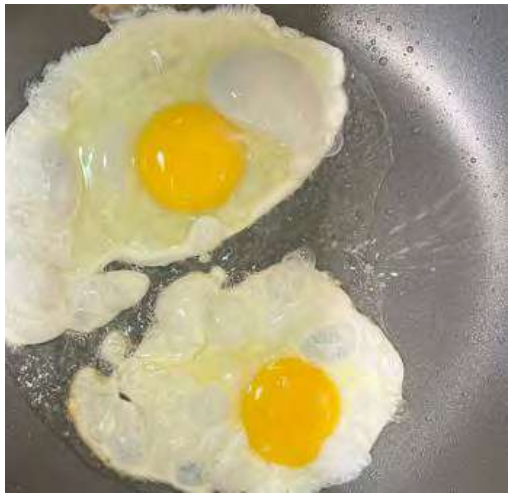
Y. H. Park, H. K. Kim, H. S. Kim, H. S. Lee[1], I. S. Shin[1] and K. Y. Whang*
Department of Animal Science, Korea University, 1, 5-ka, Anam-Dong, Sunbuk-Ku, Seoul 136-701, Korea

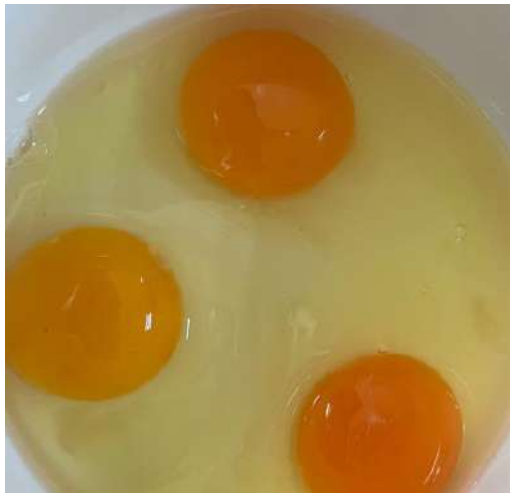
三個不同黃豆粕對蛋雞和肉雞表現影響

(Asian-Aust. J. Anim. Sci. 2002) 韓國研究報告

不同黃豆粕來源對蛋雞(30-38週)產蛋及品質的影響

	印度	巴西	美國
產蛋率%	70	70	71
蛋重g	62.3	63.4	64.7
蛋黃顏色	8.17	8.10	8.01
蛋殼強度kg/cm^2	3.72	3.83	3.83
Haugh單位	63.4	65.6	66.0
蛋白指數	0.52	0.56	0.57
蛋黃指數	0.32	0.32	0.32
33-35週總蛋重(g/隻)	1033	1127	1208





- 美國黃豆粕飼料產蛋、蛋重、品質較佳

不同黃豆粕來源對肉雞的影響

	阿根廷	巴西	美國
總增重	1229	1594	1575
飼料採食量	2231	2720	2640
飼料效率	0.551	0.586	0.597
每kg增重成本%	100	100.1	0.99

- 美國黃豆粕飼料飼效、增重成本較佳

The evaluation of soybean meals from 3 major soybean-producing countries on productive performance and feeding value of pig diets[1]

J. P. Wang,* S. M. Hong,* L. Yan,* J. H. Cho,* H. S. Lee,† and I. H. Kim*[2]

*Department of Animal Resource and Science, Dankook University, Cheonan, Choongnam 330-714, South Korea; and †American Soybean Association-International Marketing, Seoul 100-750, South Korea

三個主要黃豆生產國黃豆粕對豬隻生產表現的影響與飼養價值

(J. Anim. Sci. 2011) 韓國研究報告

不同黃豆粕來源對肉豬飼料消化率的影響

	印度	巴西	美國
乾物質消化率%			
6週	81.7	81.0	86.2
12週	70.1	69.4	76.5
18週	69.1	68.4	77.9
氮消化率%			
6週	81.5	81.2	84.8
12週	66.1	66.6	72.8
18週	66.0	64.1	74.4

- 美國黃豆粕飼料乾物質、氮消化率較高

不同黃豆粕來源對肉豬生產性能和飼養成本的影響

	印度	巴西	美國
開始體重kg	23.6	23.9	23.8
結束體重kg	111.1	110.4	117.4
日增重kg	0.694	0.687	0.743
日採食量kg	1.946	1.900	1.897
飼料效率	0.356	0.361	0.391
背脂厚度mm	26.8	26.9	24.8
腰眼面積cm^2	39.8	42.3	40.9
瘦肉率%	54.3	54.7	56.2
每kg增重成本%	100	100.8	96.4

- 美國黃豆粕飼料增重、飼效、屠體、增重成本較優

Estimate of the energy value of soybean meal relative to corn based on growth performance of nursery pigs

Henrique S. Cemin[1], Hayden E. Williams[1], Mike D. Tokach[1], Steve S. Dritz[2], Jason C. Woodworth[1], Joel M. DeRouchey[1], Robert D. Goodband[1*], Kyle F. Coble[3], Brittany A. Carrender[3] and Mandy J. Gerhart[3]

以離乳保育豬評估黃豆粕對玉米的能量價值

(J. Anim. Sci. Biotech. 2020) 美國研究報告

資料來源	Kcal/kg	玉米 (CP6.3%, Lys 0.25%)	黃豆粕 (CP48%, Lys 3.09%
NRC 2012	代謝能	3395	3294
NRC 2012	淨能	2672	2087
本試驗估計	淨能		2816-3332

飼料黃豆粕用量對離乳保育豬育成率的影響
(2015)

飼料黃豆粕%	13.6%	20.4%	27.2%
開始 kg	5.99	5.95	5.95
10天 kg	7.49	7.54	7.49
22天 kg	11.89	11.80	11.76
42 天 kg	21.66	21.70	21.66
0-42 天			
日增重	0.372	0.377	0.372
日採食	0.527	0.527	0.527
飼料換肉率	1.41	1.40	1.41
體重達標 %	97.44	97.59	97.59
治療 %	9.94	8.24	6.39
死淘 %	0.99	1.56	1.85
體重過輕 %	1.56	0.85	0.57

- 不同黃豆粕添加量不影響生長表現(日增重、採食量、飼料換肉率)
- 隨著黃豆粕添加量提高，需要治療的比重(頭數)顯著降低；體重過輕的比重(頭數)也較低、較少。
- 促進生長vs.提升健康的營養需求存在差異。

不同飼料黃豆蛋白量對PRRS感染保育豬生長的影響

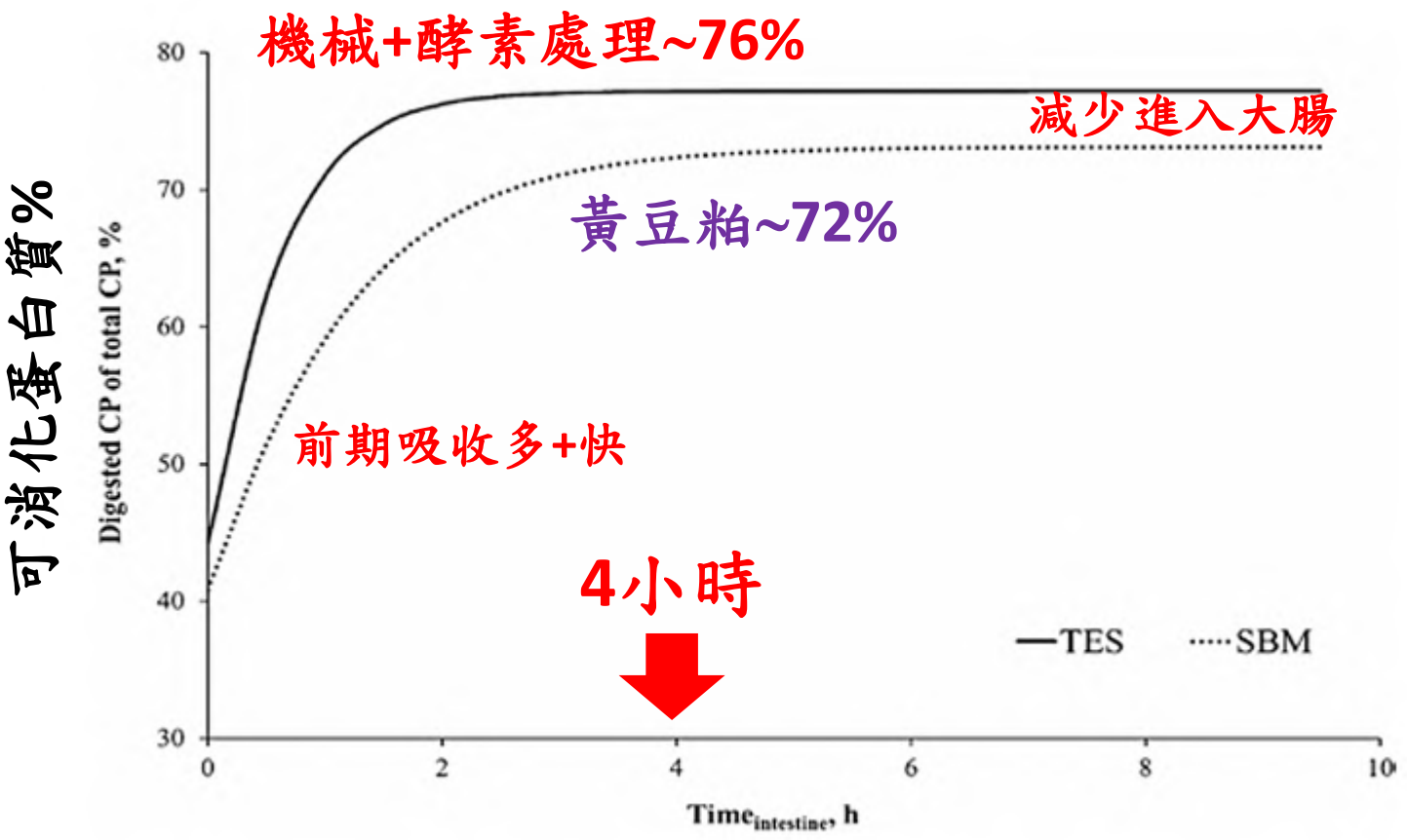
(2020)

Table 1. Ingredient and calculated composition of experimental diets (as-fed basis)[1]

Item	Phase 1 (−14 to −7 DPI)	Phase 2 (−7 to 14 DPI)	
	Common	LSBM	HSBM
Ingredient, %			
Corn	35.81	46.13	35.55
Soybean meal	20.00	17.50	29.00
Dried whey	28.35	14.95	14.95
Distiller's dried grains with solubles	3.00	10.00	10.00
Poultry by-product meal[2]	—	7.00	7.00
Menhaden fish meal	4.00	—	—
Spray-dried plasma	4.00	—	—
Choice white grease	2.38	1.50	1.50
Ground limestone	0.56	0.68	0.60
Monocalcium phosphate	0.18	0.27	0.20
Sodium chloride	0.35	0.40	0.40
Vitamin and mineral premix[3]	0.30	0.30	0.30
Zinc oxide	0.42	—	—
Copper sulfate	0.08	—	—
Choline chloride	0.07	0.07	0.07
L-Lys HCl	0.23	0.60	0.24
DL-Met	0.22	0.27	0.16
L-Trp	0.05	0.08	0.03
L-Thr	—	0.15	—
L-Val	—	0.10	—
Calculated composition			
ME, kcal/kg	3,395	3,402	3,398
Standardized ileal digestible AA, %			
Lys	1.44	1.38	1.38

	對照組		PRRS感染組	
	低黃豆	高黃豆	低黃豆	高黃豆
開始體重, kg	9.08	9.03	9.00	9.65
結束體重, kg	17.59	17.01	13.39	14.73
日增重, g/d	628	576	314	374
日採食量, g/d	885	842	592	618
飼料效率, g/kg	693	703	535	605

豬隻小腸黃豆粕蛋白質吸收時間曲線(體外分析)

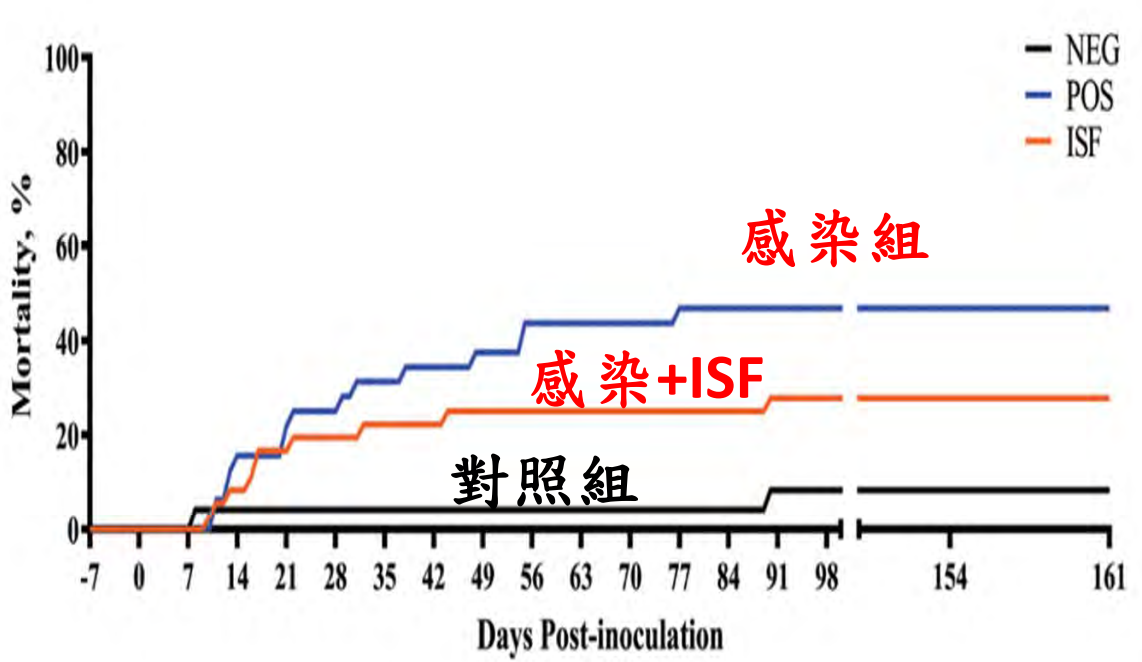


可消化蛋白質%		
時間(h)	黃豆粕	處理
0.5	50	62
1.0	60	70
1.5	64	75
2.0	68	76

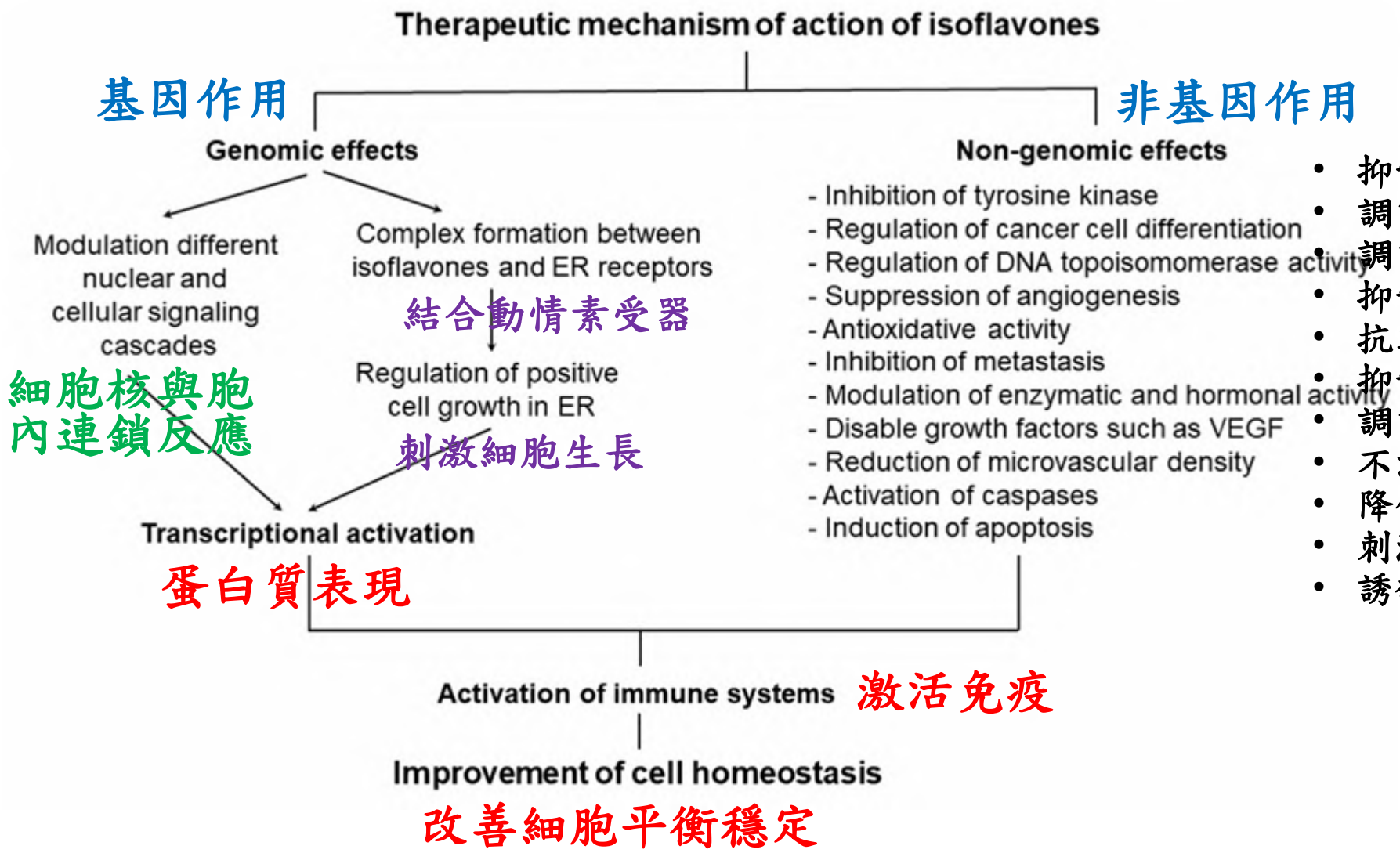
黃豆含促健康免疫調節因子

- 異黃酮(isoflavones)之功能
  1. 類動情素(調節內分泌、繁殖性能)
  2. 抗發炎(調解免疫機能)
  3. 抗氧化(調節免疫、改善肉質)
  4. 抗病毒
  5. 改善細胞膜完整性
  6. 促進生長
- 皂素(sopanins)之功能
  1. 抗寄生蟲
  2. 調節腸道通透性
  3. 調解免疫機能

異黃酮(ISF)降低PRRS感染保育豬死亡率

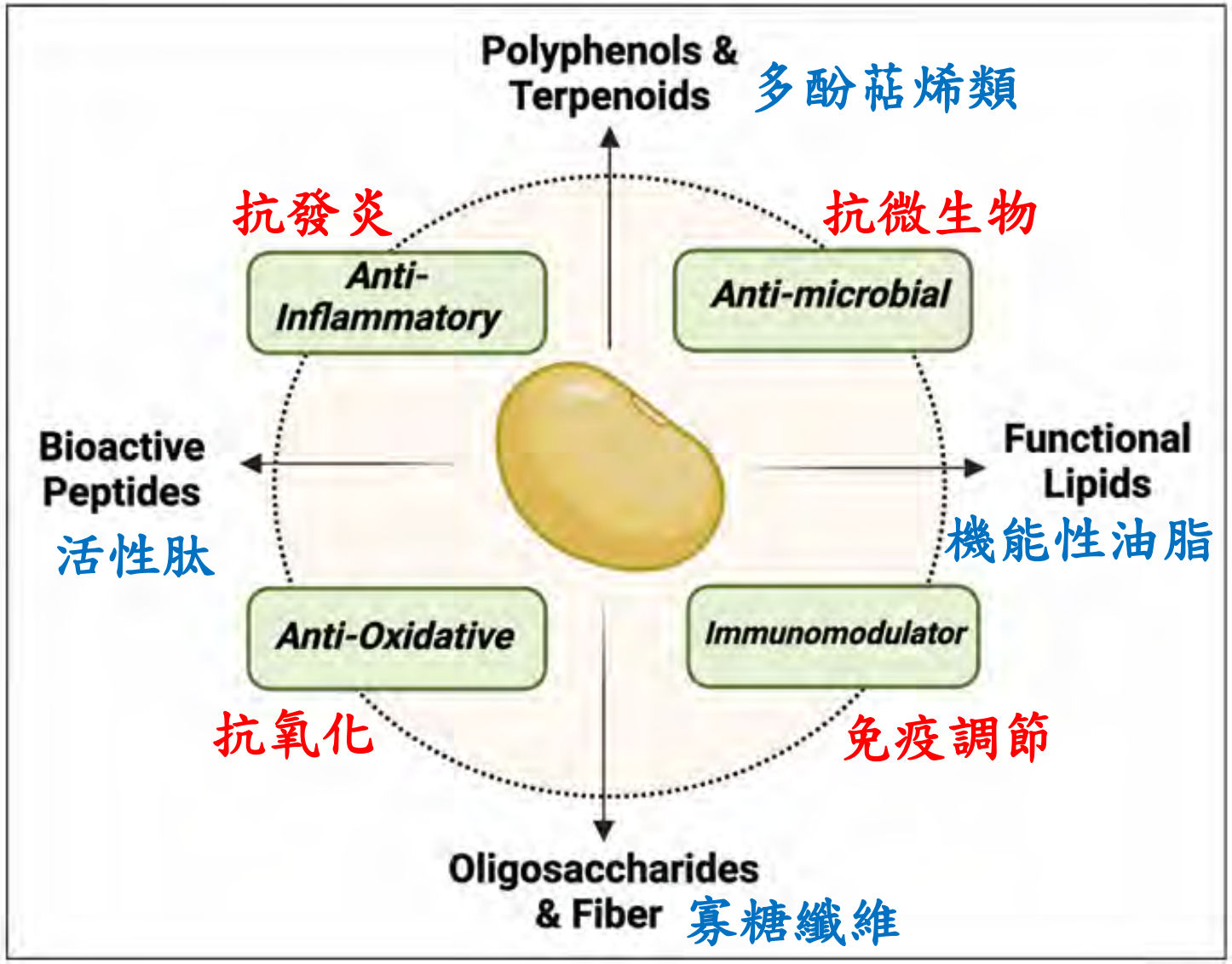


異黃酮治療機制



- 抑制酪胺酸激酶
- 調節癌細胞分化
- 調節DNA異構酶活性
- 抑制血管增生
- 抗氧化
- 抑制轉移、突變
- 調節酵素與荷爾蒙
- 不活化生長因子(VEGF)
- 降低微血管密度
- 刺激胱天蛋白酶(腫瘤、神經)
- 誘發細胞死亡

黃豆機能成分與作用

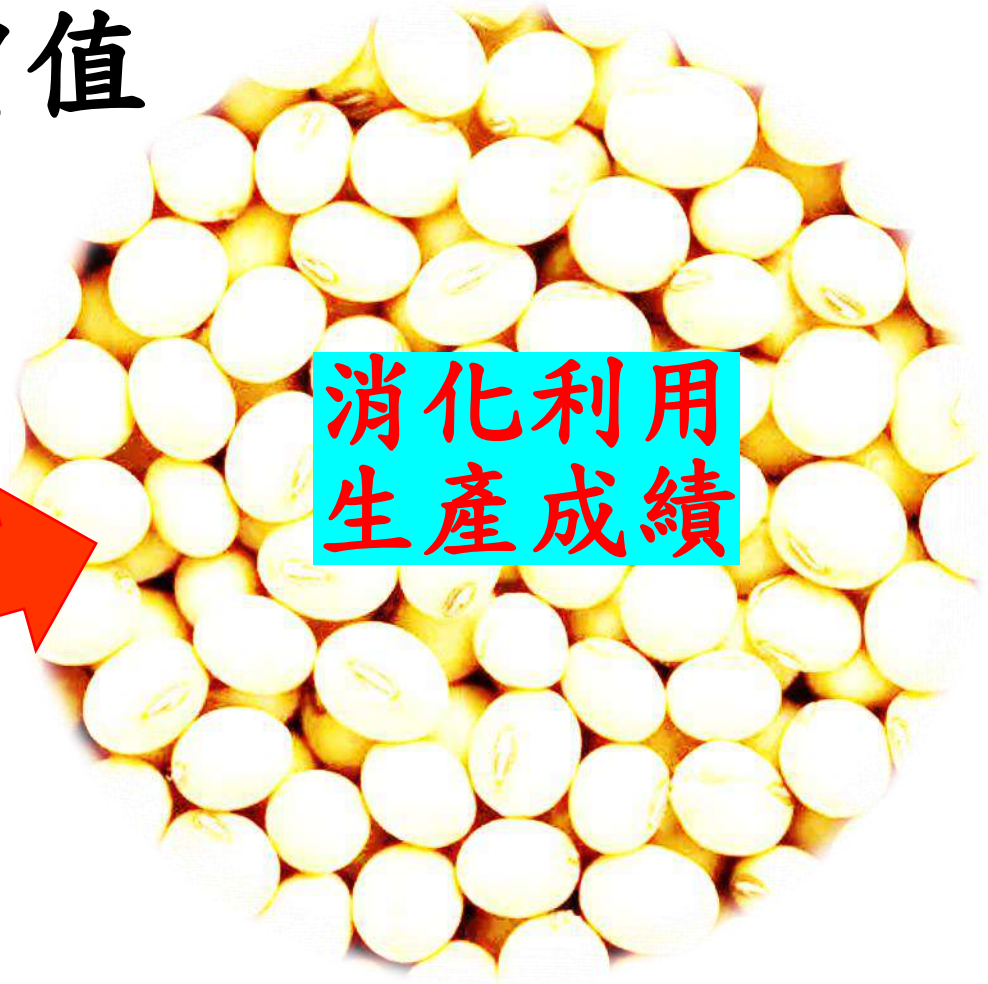

Polyphenols &
Terpenoids
多酚萜烯類
抗發炎
抗微生物
Anti-
Inflammatory
Anti-microbial
Bioactive
Peptides
活性肽
Functional
Lipids
機能性油脂
Anti-Oxidative
Immunomodulator
抗氧化
免疫調節
Oligosaccharides
& Fiber
寡糖纖維

不同蛋白質原料比較(NRC 2012)

原料	代謝能 淨能	粗蛋白質 (消化率)	離胺酸 (消化率)	蛋胺酸 (消化率)	羥丁胺酸 (消化率)	色胺酸 (消化率)
Soybean meal 黃豆粕	3382 2148	43.9 85	2.76 88	0.60 89	1.76 83	0.59 90
Canola meal 菜仔粕	3013 1890	37.5 74	2.07 74	0.71 74	1.55 70	0.43 71
Cottonseed meal 棉仔粕	2645 1624	39.2 77	1.50 63	0.51 73	1.36 68	0.53 71
DDGS 乾玉米酒粕	3396 2343	27.4 74	0.90 61	0.57 82	0.99 71	0.20 71
Lupins 羽扁豆	3176 2043	32.5 86	1.58 85	0.21 81	1.20 82	0.26 82
Palm kernel meal 棕櫚仁粕	2868 1641	14.4 63	0.36 48	0.19 70	0.47 68	0.11 58
Sunflower meal 葵花仔粕	2569 1482	39.9 81	1.45 78	0.78 89	1.37 77	0.48 80

替代性蛋白質原料胺基酸消化率低且各胺基酸消化率差異大

從購買價格到應用價值



美國黃豆粕的消化利用率和
應用生長性能表現優於南美

應用美國優質黃豆粕的優勢

- 含量≠吸收利用，價格≠價值
- 美國黃豆粕能量、胺基酸含量與消化率皆優於其他產地來源的黃豆蛋白質粕。
- 應用美國黃豆粕能能確保畜禽生長性能及屠體與產蛋品質。

最新技術研究→穩定品質來源→永續種值認證

高胺基酸含量→高消化利用率→持續提升價值

最佳畜禽效益→最低環境污染→企業永續發展

Stock # 6578_TW

The Key Indicators for Carbon Reduction and Sustainable Applications of Fermented Soy Protein

Wei-Chih Huang PhD.
Chief of Technology Officer

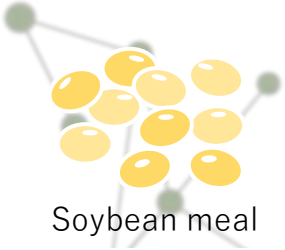
DaBomb inside®
Probiosyntec

Outline

- Key quality indicator for Carbon Reduction TCA-NSI
- The difference between DaBomb-P from other fermented soy bean meal
- Sustainable Applications ： Replacement of fish meal by DaBomb-P

What is DaBomb Protein ?

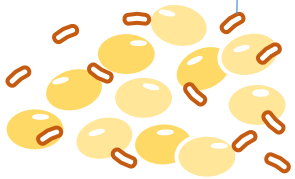
Functional fermented soy protein



Soybean meal

Lactobacillus culture

Active Lactobacillus

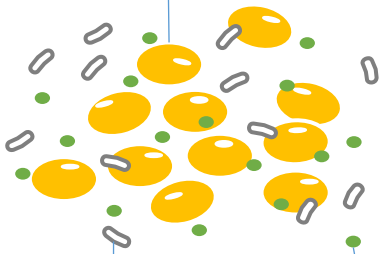


Fermentation

In-vitro pre-digestion

Dry

Soy peptide



Heat killed lactobacillus

Lactobacillus metabolite

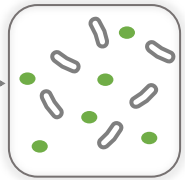
Soy protein

digestion

Soy peptide

Probiotics

Postbiotics



- Non-living microbial cells
- Microbial components

Enzyme
Short chain fatty acid
Functional peptides
Vitamins
Bacterial lysates

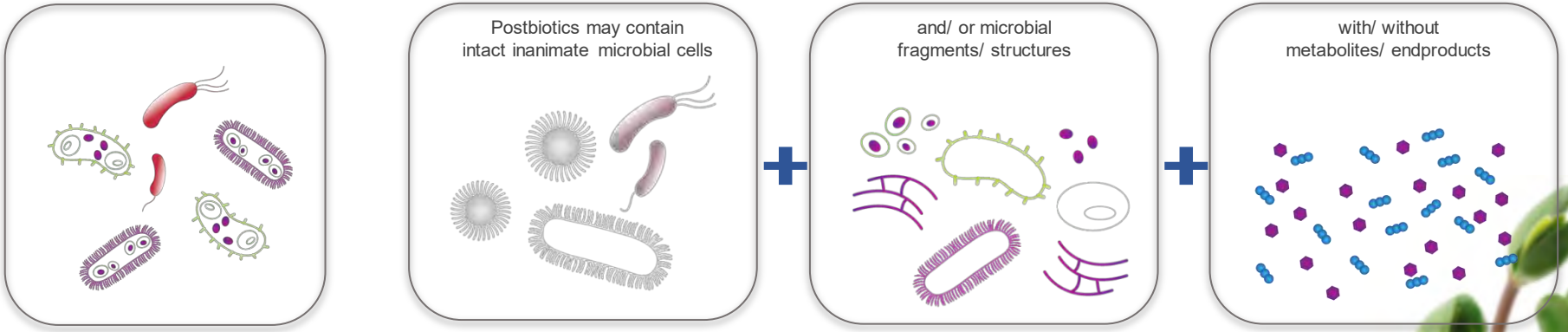
DaBomb protein is a postbiotics related product

Probiotics

Live microorganisms

Postbiotics

Preparation of inanimate microorganisms and/or their components that confers a health benefit on the host.



Enzyme, SCFAs, functional peptides, vitamins, bacterial lysates、intact bacteria(inactive)

Ref: Nat Rev Gastroenterol Hepatol 18, 649–667, 2021

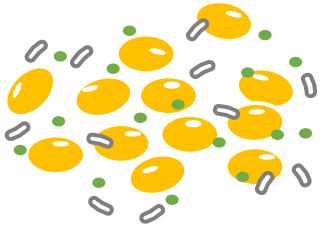
DaBomb-P and other products soy product

	DaBomb-P	Other FSBM	Hydrolysis SBM	Soy Protein Concentrates
Production Process	**Fermentation**	Steam extruded	Enzyme hydrolysis	Solvent extraction
Anti Nutrional Factor reduction	Lactobacillus hydrolysis	Steam denatured	Enzyme degraded	Solvent denatured
Key components	**Soy peptides** **Postbiotics**	Denatured protein	Soy peptides	Denatured protein
Protein digestibility	**High**	Low	High	Low
Additional value	**Feed losses reduced** **Gut health** **Immunity improved**	-	-	-

Why is protein digestibility so important?

Soy Peptides

High protein digestibility

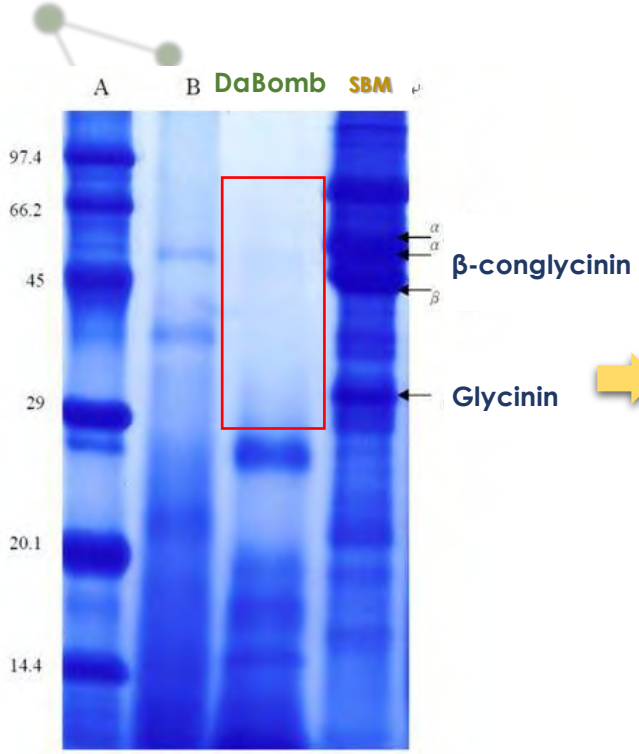


Lactobacteria
Postbiotics

Immunity and gut health improvement

DaBomb Golden Triangle

Hydrolyzed anti-nutritional factor



- Among anti-nutrtional factors (ANFs) in soybeans, including
  - ✓β-conglycinin
  - ✓Glycinin
- **ANFs accounts for about 70% of the total soy protein.**
- **β-CG has been identified as one of the major allergens**

SDS-Page analysis showed that the main allergens have been degraded by bio-hydrolysis.

β-conglycinin causes hepatopancreatic damage in shrimp


Contents lists available at ScienceDirect

Fish and Shellfish Immunology

journal homepage: www.elsevier.com/locate/fsi

Full length article

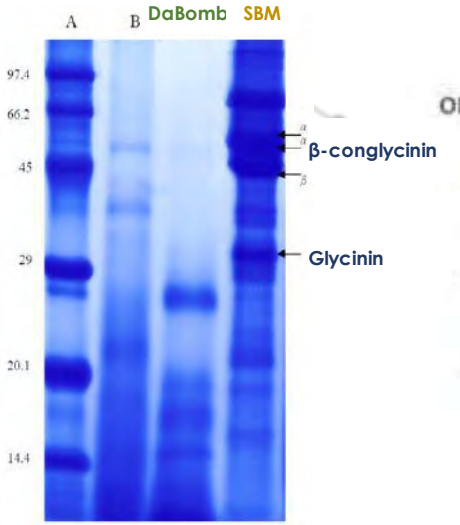
Dietary soybean antigen impairs growth and health through stress-induced non-specific immune responses in Pacific white shrimp, *Litopenaeus vannamei*

Tao Liu[a,b,c,1], Gaigai Zhang[a,b,c,1], Yue Feng[a,b,c], Chun Kong[a,b,c], Christian Larbi Ayisi[a,b,c], Xuxiong Huang[a,b,c], Xueming Hua[a,b,c,*]

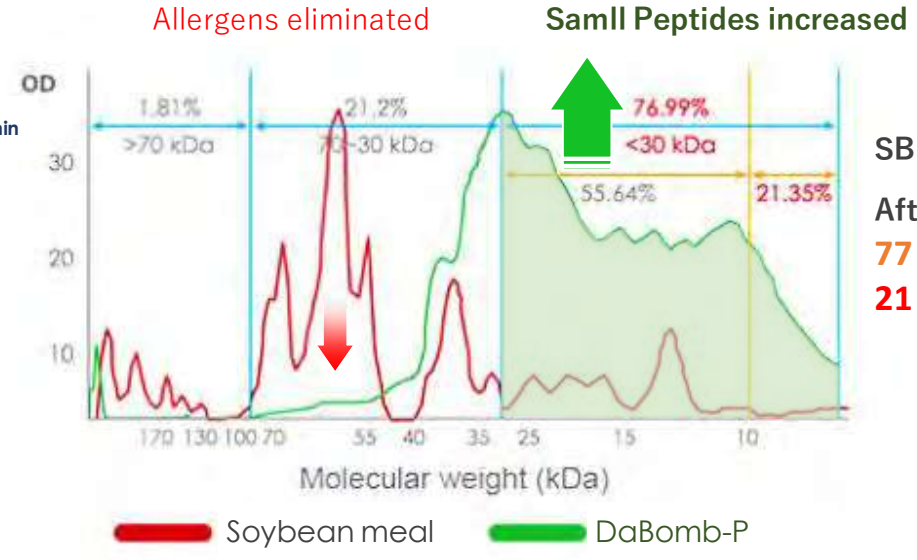
Ref: Dietary soybean antigen impairs growth and health through stress-induced non-specific immune responses in Pacific white shrimp, *Litopenaeus vannamei*, Fish & shell fish immunology, 2019

DaBomb-P is rich in small peptide

Small peptides amounts is the key of high protein digestibility.



SDS-PAGE analysis



DaBomb-P peptide molecular distribution analysis

SBM originally has only 3% small peptides

After fermented process

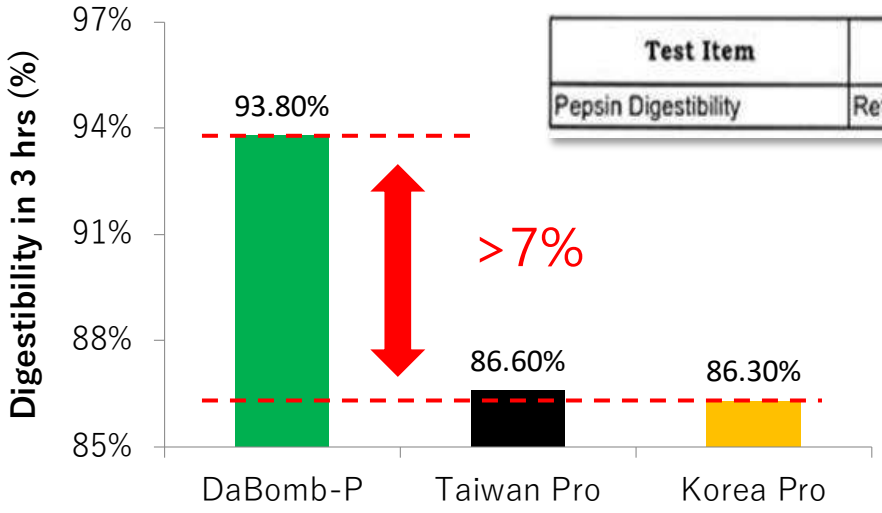
77 % medium peptides (Mw ≦ 30kDa)

21 % small peptides (Mw ≦ 10kDa)

High time efficient protein digestibility high protein availability

DaBomb-P pepsin digestibility is above 93% in 3hrs

Fermented soy protein DB-P is rich in small peptides.
It makes DaBomb-P is easier to be absorbed.



Test Item	Test Method	Results	LOQ/LOD (Note 3.)	Unit
Pepsin Digestibility	Ref. to AOAC 971.09(Pepsin Digestion Time:3hr)*	93.8	---	%

SGS 食品實驗室-高雄 FOOD LAB-KAOHSIUNG 測試報告 Test Report

DABOMB PROTEIN CORP.
52,Gungye 3rd Road,Tainan,Taiwan 709

Report No. : VA/2016/13270A-01
Date : 2016/02/04
Page : 1 of 2

THE FOLLOWING MERCHANDISE WAS(WERE) SUBMITTED AND IDENTIFIED BY THE CLIENT AS :

Product Name: Lactobacillus hydrolyzed Peptide
Sample condition: Please refer to the photos for sample shown at the last page of this report

Testing Date : 2016/01/27

Test Results:

Test Item	Test Method	Results	LOQ/LOD (Note 3.)	Unit
Pepsin Digestibility	Ref. to AOAC 971.09(Pepsin Digestion Time:3hr)*	93.8	---	%

Note : 1. The test report is the test result issued by the testing institutions as requested by the consignor. Regarding to the legitimacy of the product, it shall be determined by the authorities according to the law.
2. The report is in vain if it is partly reproduced or used.
3. If the testing item belongs to quantitative analysis then this column describes Limit of Quantification(LOQ); If the testing item belongs to qualitative analysis then this column describes Limit of Detection(LOD).
4.The testing result will be "N.D." or Negative for Limit of Quantification and Limit of Detection, respectively.
5.*:According to client's request:pepsin digestion time:3hr.
- END -

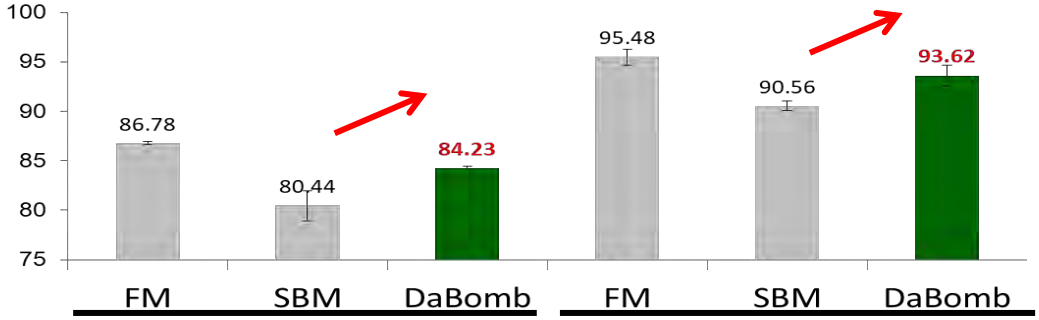
Mandy Yu Associate Director
Signed for and on behalf of SGS TAIWAN Ltd.

Link to SGS safety information platform
Contact person : Sonny Ren, Ph.D.

High time efficient protein digestibility high protein availability

Ingredient	Piglet in-vivo Protein Digestibility (CP, %)	Remark
Bio-hydrolysis Protein **DaBomb-P**	95	By lactic acid bacterium
Soybean meal	88	

DaBomb-P has been listed in the Japan Livestock Industry Association's standard table of feed composition

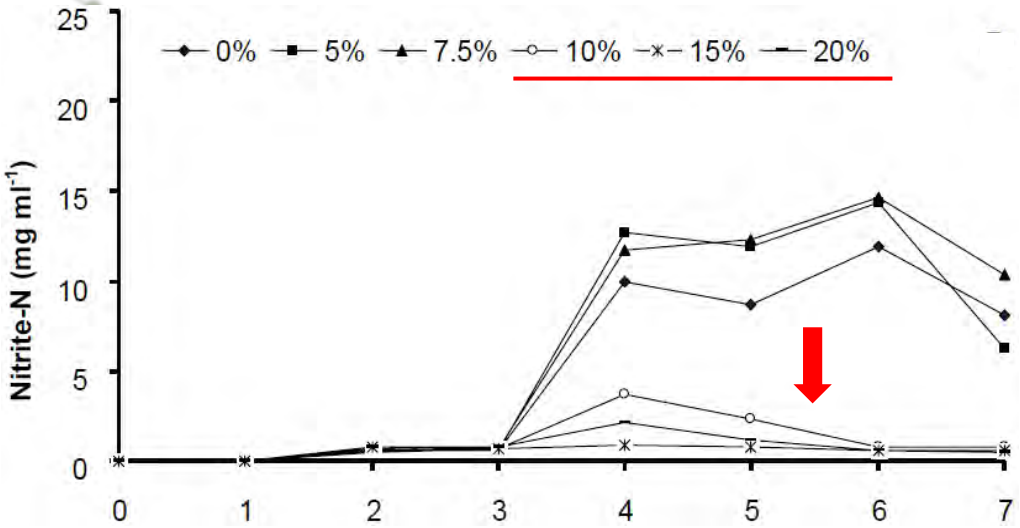


White shrimp

Grouper

Water quality improvement of pond with DaBomb-P

- **Nitrite** is an intermediate product in the oxidation of **ammonia** and is toxic to aquatic animals, especially fish and white shrimp.
- Shrimp fed diets containing **more than 10% of DaBomb-P** had significantly lower levels of nitrite in the pond water.



The trial was conducted by Prof. Cheng, Dept Aquaculture, NPUST, 2009

How to identify your protein quality

High crude protein ≠ High protein digestibility

Soluble Protein content
Easy observation

Bubble-Shaking test

Small peptide ratio
Key quality index of FSBM

TCA-NSI method

The Key value of DaBomb-P

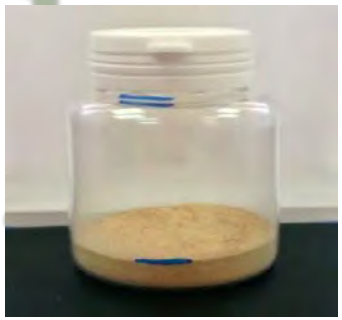
High crude protein ≠ High protein digestibility

Soluble Protein content
Easy observation

Bubble Shaking test

Qualitative Analysis - Bubble test

Bubble test operating procedure



10-13g of a sample loaded

Add water about 90-95 gram

Shake the bottle to get an even suspension
Stand for 15-20 mins for peptides extraction

Pour 20ml of the supernatant
to a centrifugal tube.

Shake vigorously for 1 min
for bubble forming

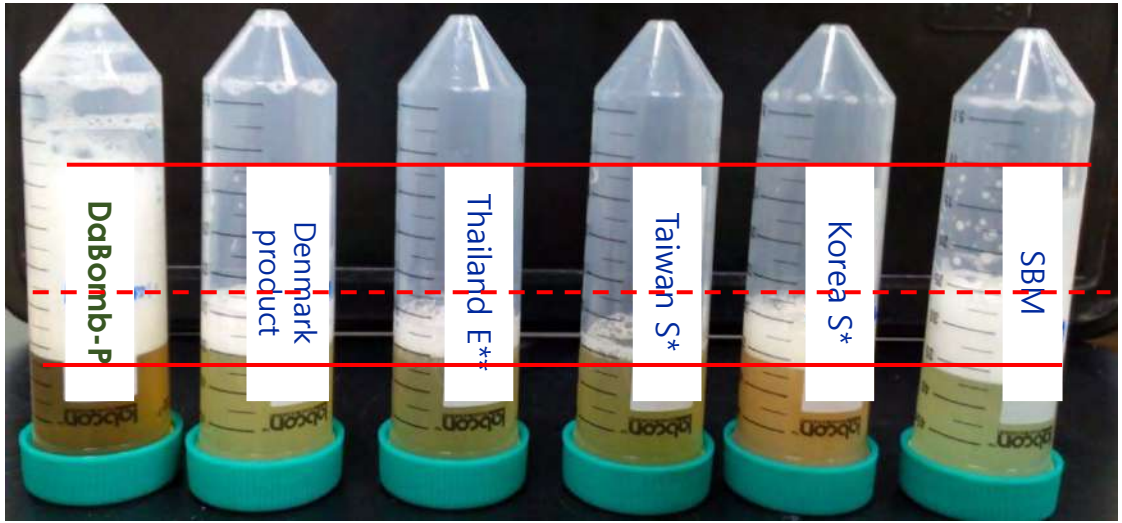
Stand the tube
for bubble observation

DaBomb-P
has the largest number of hydrolyzed peptides

The soy peptides stabilize the forming bubbles.

The bubble height reflects the amount of protein in fermented soybean meal

More bubbles, more small molecule peptides



DaBomb-P Denmark Thailand E** Taiwan S* Korea S* **SBM**

How to evaluate FSBM quality

High crude protein ≠ High protein digestibility

Functional small peptides content analysis

Small peptide ratio

Key quality index of FSBM

Quantitative analysis

TCA-NSI method

Quantitative Analysis TCA-NSI

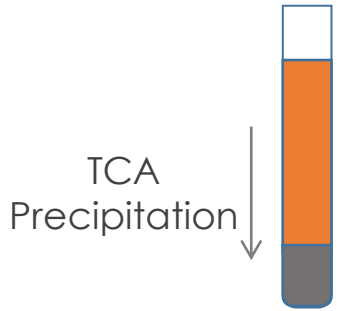
Trichloroacetic acid - nitrogen soluble index (TCA-NSI)

Trichloroacetic acid (TCA) is a protein precipitating agent that can precipitate proteins and high molecular weight peptides.

American association of cereal chemists, AACC
AACC international approved method : **46-23.01**
China National standard: **GBT 22492-2008**

$$\text{TCA-NSI} = \frac{\text{Supernatant crude protein content \%}}{\text{Sample crude protein content \%}}$$

The higher TCA-NSI,
The higher small peptides content



Supernatant
<10 kDa Peptides
(small peptides remain soluble)

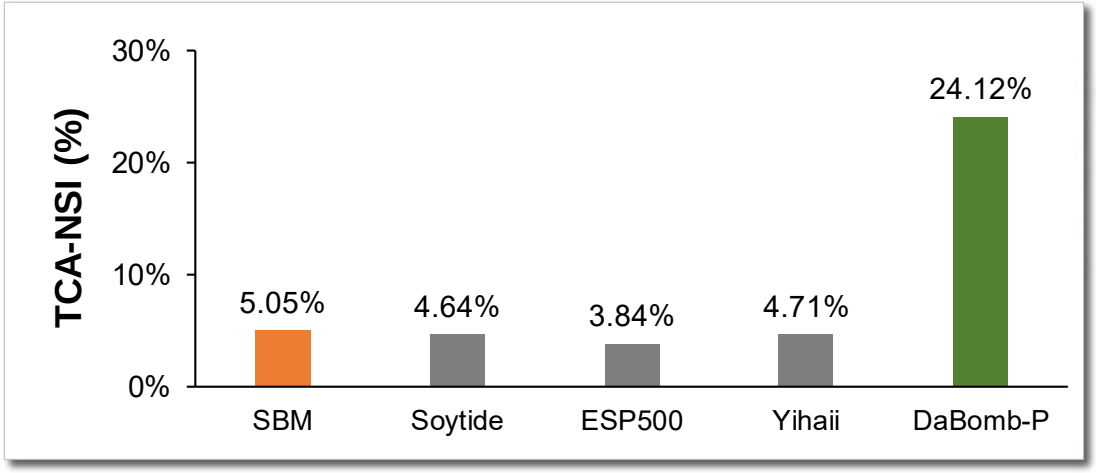
Precipitate
(medium peptide + proteins)

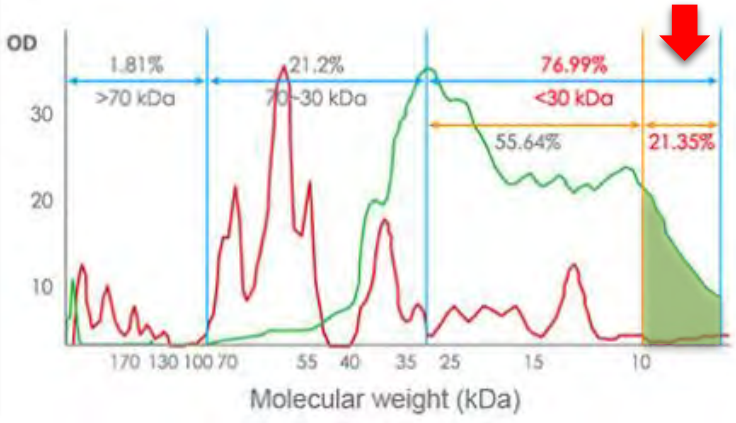
Analyze supernatant solutes crude protein content %

TCA-NSI

TCA-NSI comparison of market product

- **TCA-NSI is an ideal quality indicator of FSBM**
  - ✓**Highly consisted** with peptide molecular weight distribution
  - ✓**Highly consisted** with bubble-shaking test



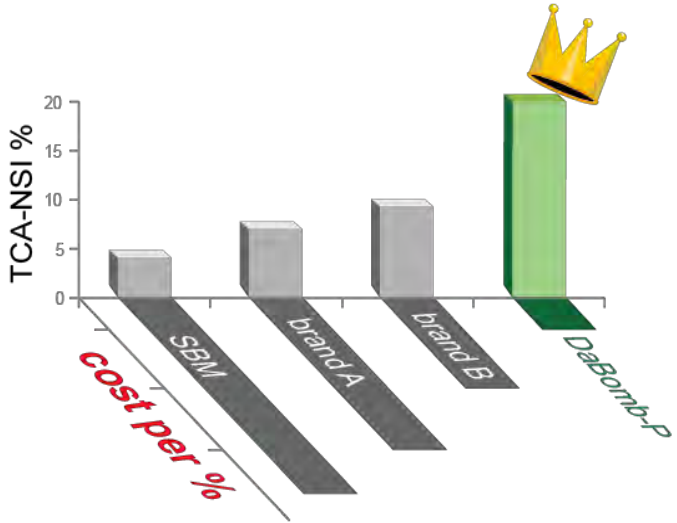


TCA-NSI is useful for Cost evaluation

High crude protein ≠ High protein digestibility = Peptide content

Fermented soy protein cost evaluation should focus on the small peptide content.

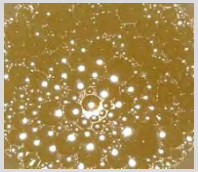
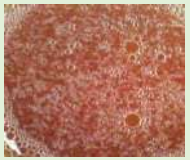
$$\text{FSBM cost} = \frac{\text{Price}}{\text{TCA-NSI\%}}$$



DaBomb-P provide additional high value functions

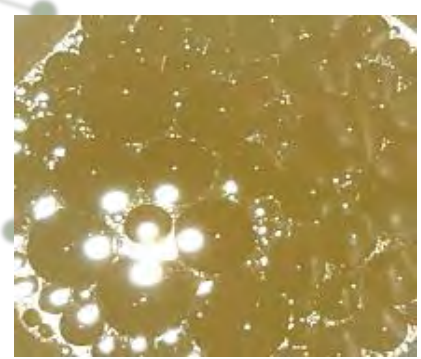
DaBomb-P can provide additional high value functions than other FSBM

- ✓ Excellent stickness
- ✓ Excellent emulsion effects

Item	SBM	Soytide	ESP500	Yihaii	DaBomb-P
Crude protein (%)	47.96	54.51	51.85	50.64	51.98
pH	6.5	7.77	4.86	4.71	4.95
TCA-NSI (%)	5.05	4.64	3.84	4.04	24.12
Stickiness					
Emulsification					

*Emulsification test: mixing ratio of FSBM : Water : Oil =10:70: 1, Stirring for 10 min

DaBomb-P has excellent emulsifying capacity to enhance fat absorption

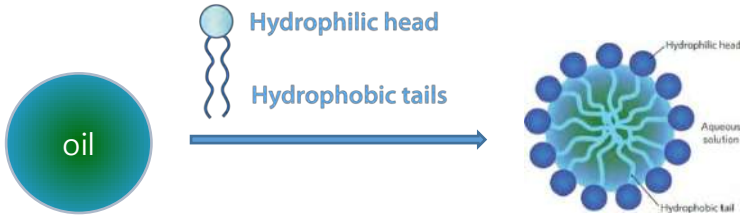


SBM

DaBomb-P

other

Enriched Small peptides in DaBomb-P can provide emulsification effect to oil droplet.

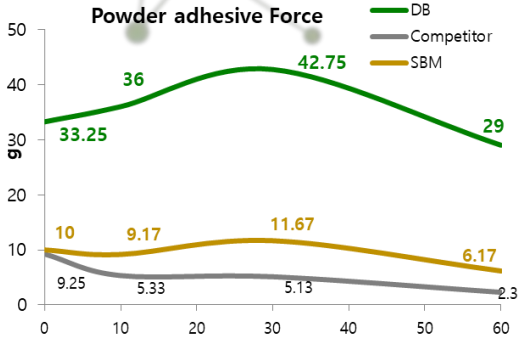


Final Product color can be effected by Different source soybean

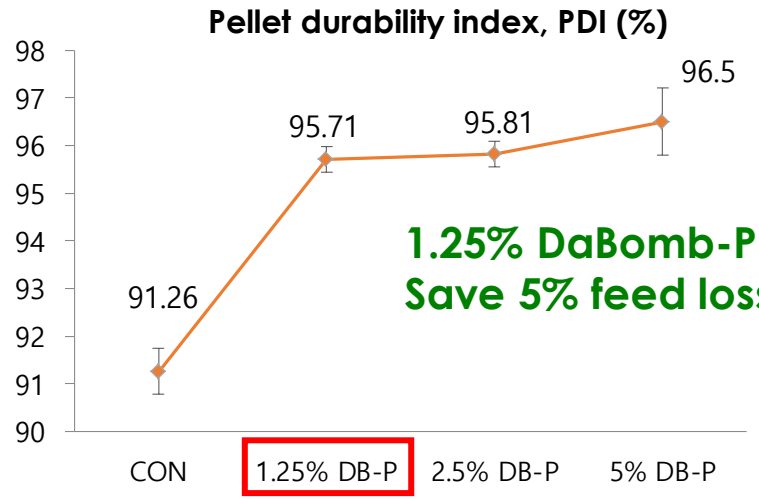
- Soybean from North American has better product appearance.

DaBomb-P can be an ideal pelleting aid

- **DaBomb-P** can increase pelleting and granule stability to **reduce feed loss caused by cracks and fractures of pellets** from bumping during pelleting, packaging and transportation.



Good for pelleting and granule stability

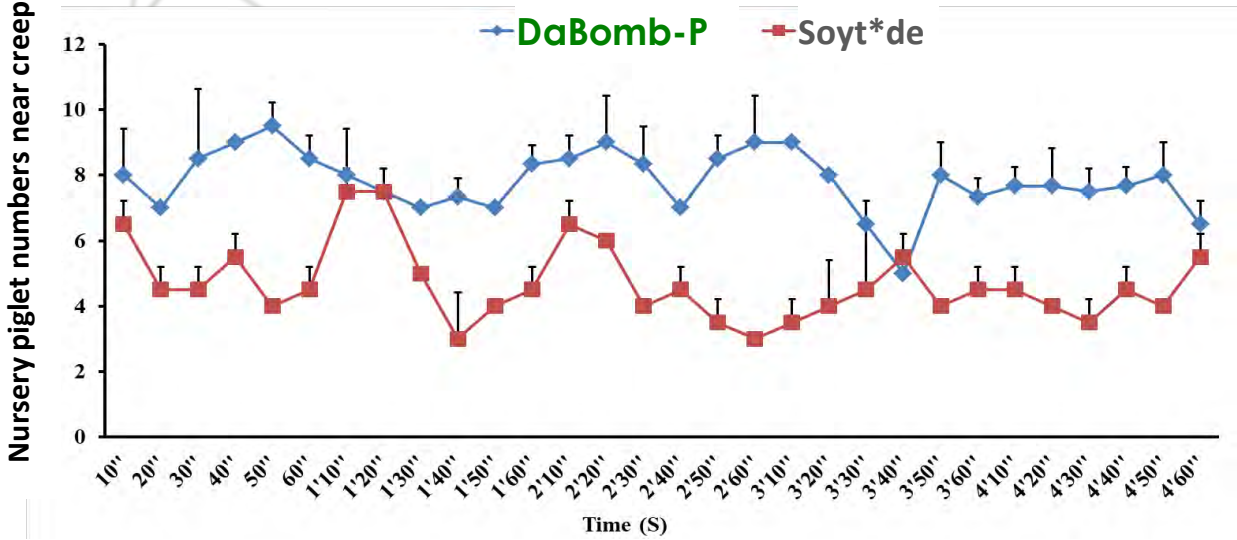


1.25% DaBomb-P
Save 5% feed loss

DB-P 1.25% added

DaBomb-P has excellent palatability

- The peptide and lactic acid in **DaBomb-P** provides synergistic **palatability** in creep feed trial.
- Bacillus FSBM would release ammonia odor that is negative to palatability.



More piglets still stays at the creep with **DaBomb-P** diet after 20 min later.

Peptides and Postbiotics provide synergistic effect on **immunity improvement**

- **DaBomb-P** dramatically increases the **immune cells** and **immune enzyme activity** in the shrimp.


Fish & Shellfish Immunology

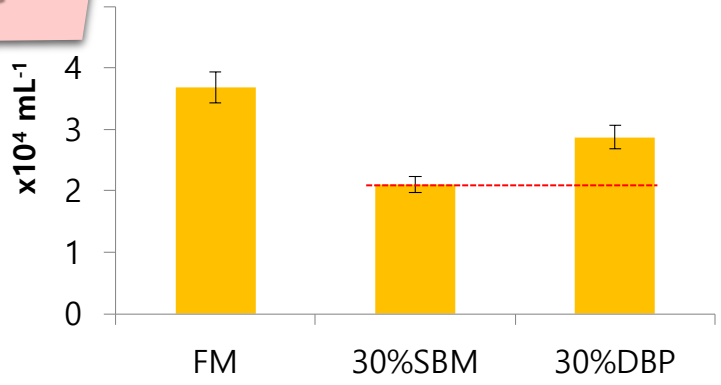
Short communication

Comparison of dietary inclusion of commercial and fermented soybean meal on oxidative status and non-specific immune responses in white shrimp, *Litopenaeus vannamei*

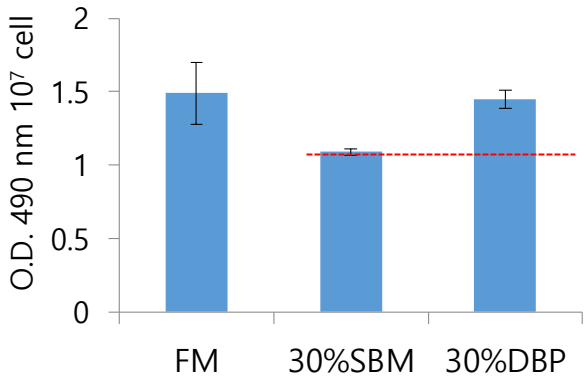
Yu-Hung Lin*, Jia-Jinn Mui

Enhance Immunity !

Total Hemocyte counts



Phenol oxidase (PO)



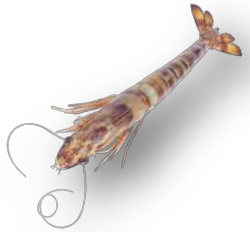
Shrimp trial was conducted by **Prof. Lin, Yu-Hung** Department of Aquaculture, NPUST, 2016

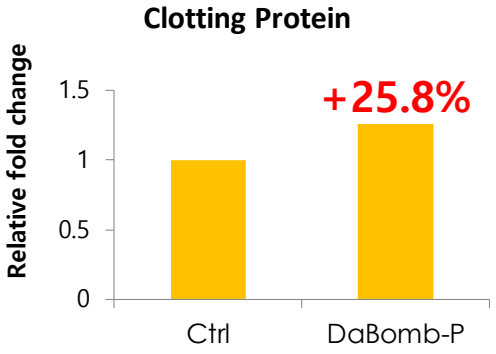
Published: **Fish & Shellfish Immunology** 63 (2017) 208-212

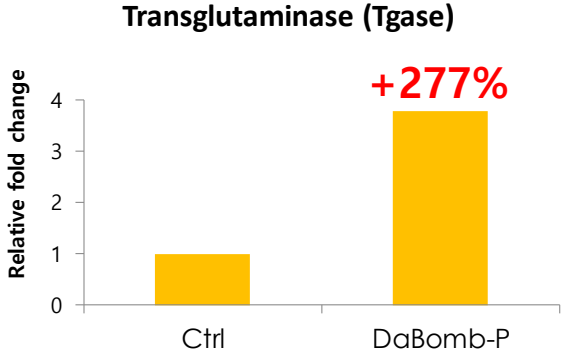
Peptides and Postbiotics provide synergistic effect on **immunity improvement**

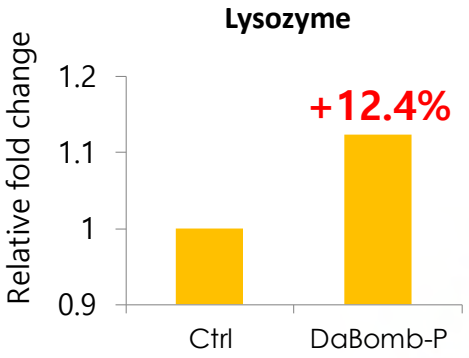
Immune-Modulating effect for white shrimp

- **DaBomb-P** dramatically enhances the **antimicrobial peptides** and **anti-viral genes expression** in shrimp.
- To improve shrimp disease resistance





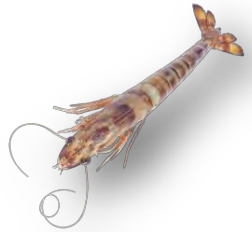




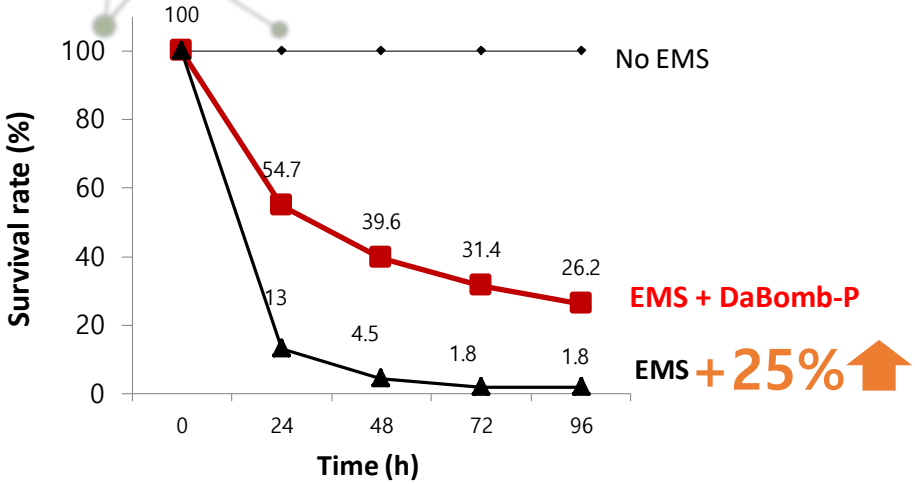
Shrimp trial was conducted by **Prof. Lo, Chu-Fang** College of Bioscience and Biotechnology, NCKU (2015)

Soy Peptides and Lactobacillus Postbiotics provide synergistic effect on immunity improvement

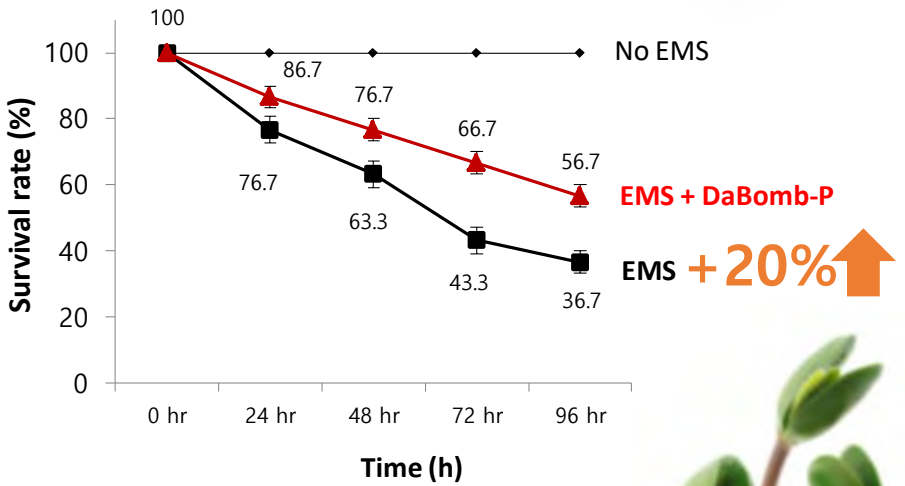
DaBomb-P increases white shrimp survival rate by 20%
→ Improve resistance to pathogenic baceria



Vibrio parahaemolyticus challenged



Vibrio alginolyticus challenged



Conducted by **Prof. Lo, Chu-Fang** (2015)
College of Bioscience and Biotechnology, NCKU

Conducted by **Prof. Cheng, Wen-Teng** (2015)
Department of Aquaculture, NPUST

Animal trial

Orange-spotted grouper

Effects of feeding diets with different DaBomb-P inclusion rate to replace fishmeal on fishes

Asian Seabass

DaBomb-P can replace fish meal 10-30% in Asian seabass

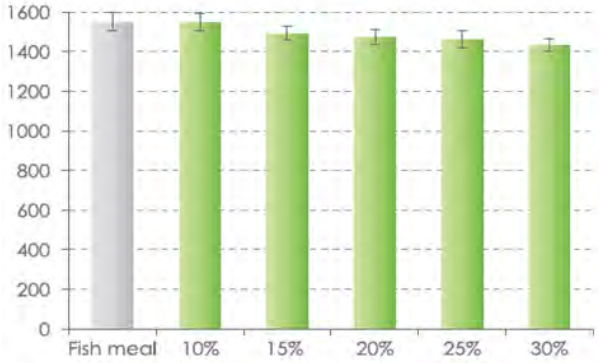
Group	FM	10%DP	15%DP	20%DP	25%DP	30%DP
Fish meal	50%	45%	42.5%	40%	37.5%	35%
DaBomb-P	0	6.5%	9.7%	12.88%	16.11%	19.33%

Asian Seabass

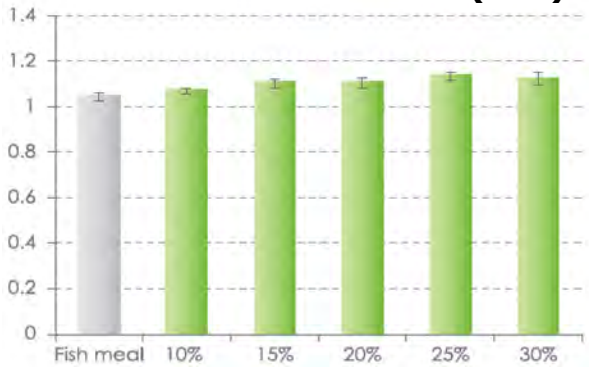
Asian Seabass

No significantly different

Weight gain (%, 6 months)



Feed conversion ratio (FCR)



Published: Yu-Hung Lin et al., Effect of Dietary Fish Meal Replacement by *Lactobacillus* spp. Fermented Soybean Meal on Growth Performance of Asian Sea Bass, *Lates calcarifer* **Journal of Fish. Soc. Taiwan**, 42 (4) : 235-240, 2015

Replacing 10-30% fishmeal with DaBomb-P does not decrease feed efficiency and growth performance of grouper

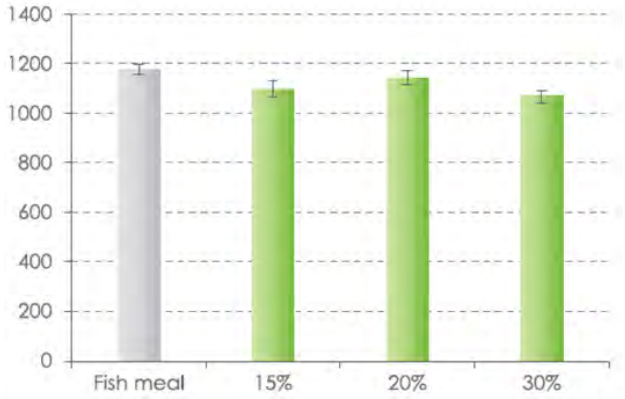
Group	FM	15%DP	20%DP	30%DP
Fish meal	50%	42.5%	40%	35%
DaBomb-P	0	9.3%	12.4%	18.6%

Orange-spotted grouper

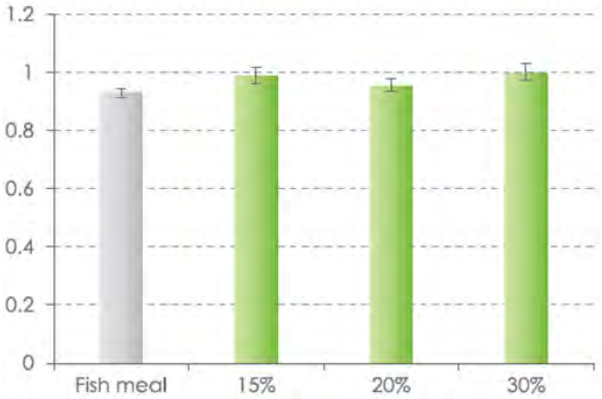
Orange-spotted grouper

No significantly different

Weight gain (%, 8 months)



Feed conversion ratio (FCR)



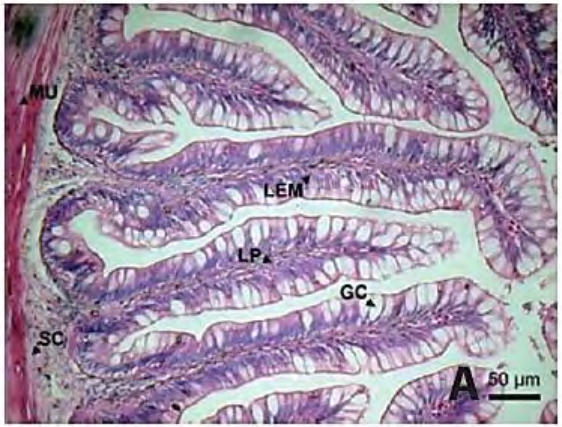
Published: Yu-Hung Lin et al., Effect of Dietary Fish Meal Replacement by *Lactobacillus* spp. Fermented Soybean Meal on Growth Performance of Asian Sea Bass, *Lates calcarifer* **Journal of Fish. Soc. Taiwan**, 42 (4) : 235-240, 2015

DaBomb-P
help to reduce villous inflammation in grouper

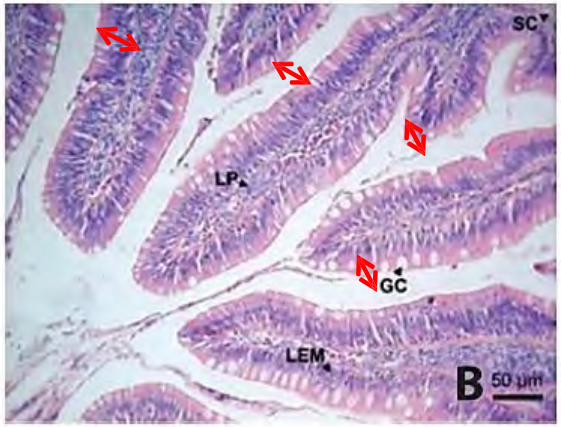
DaBomb-P improves enteritis, villus damage and maintain gut integrity
Increase the nutrients utilization and improve growth performance.

Orange-spotted grouper

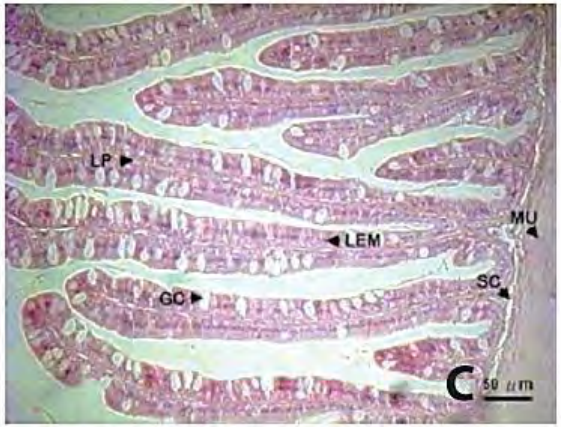
A: Fish meal (control)



B: SBM replace 20% FM



C: **DaBomb-P** replace 20% FM



Inflammation caused decrease of nutrient utilization

More smooth
Normal nutrient utilization

LP: Lamina propria
MU: Muscularis
LEM: Lamina epithelial mucus
GC: Goblet cells
SC: Stratum compactum

Conducted by **Prof. Cheng, Wen-Teng** (2015) Department of Aquaculture, NPUST

DaBomb-P can be partially substituted for fish meal in white shrimp fed diets

Aquaculture 548 (2022) 737634

Contents lists available at ScienceDirect

Aquaculture

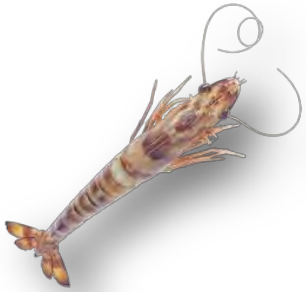
journal homepage: www.elsevier.com/locate/aquaculture

Short communication

Lactobacillus spp. fermented soybean meal partially substitution to fish meal enhances innate immune responses and nutrient digestibility of white shrimp (*Litopenaeus vannamei*) fed diet with low fish meal

Yu-Hung Lin*, Yu-Ting Chen

Department of Aquaculture, National Pingtung University of Science and Technology, No. 1 Shuefu Road, Neipu, Pingtung 91201, Taiwan



The trial was conducted by Prof. Lin, Yu-Hung
National Pingtung University of Science and Technology

Fish meal replacement by DaBomb-P trial

Effects of white shrimp fed diets with different DaBomb-P inclusion rate to replace fish meal

Ingredient (%)	Control	25%DB	50%DB	75%DB	100%DB	50%SBM	75%SBM
Fish meal	15	11.25	7.5	3.75	0	7.5	3.75
Dehulled SBM	20	20	20	20	20	29.44	34.16
DaBomb-P	0	4.39	8.77	13.16	17.54	0	0

Trial design

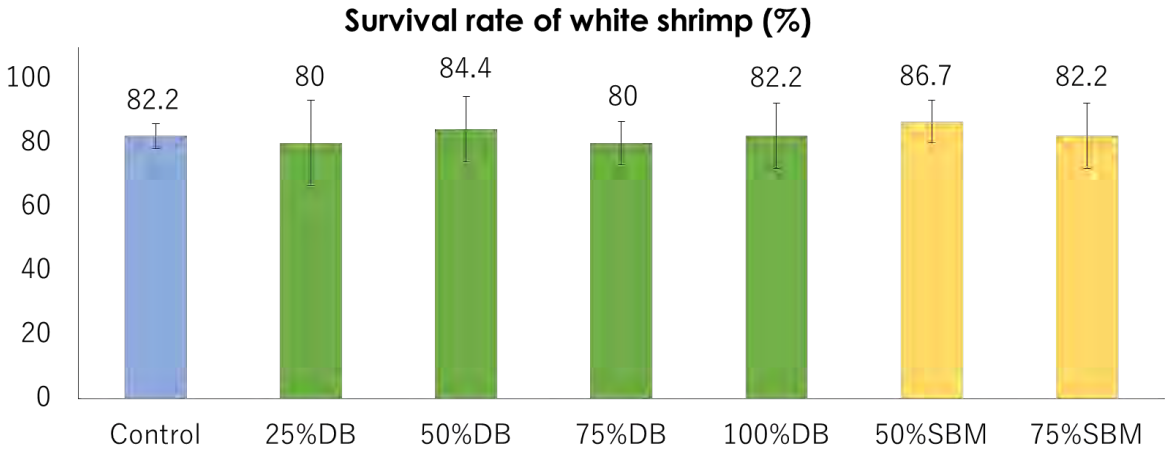
- Initial shrimp weight: 5.53 g
- Feeding time: 8 weeks
- Each treatment for Triplicates
- 7 treatment groups
- 15 shrimps per group

Published: *Lin,Y. H. and Chen Y. T. actobacillus spp. fermented soybean meal partially substitution to fish meal enhances innate immune responses and nutrient digest ibility of white shrimp (Litopenaeus vannamei) fed diet with low fish meal* , **Aquaculture**, 2022

Replacing fishmeal with DaBomb-P did not cause negative effect on shrimp's survival rate

Ingredient (%)	Control	25%DB	50%DB	75%DB	100%DB	50%SBM	75%SBM
Fish meal	15	11.25	7.5	3.75	0	7.5	3.75
Dehulled SBM	20	20	20	20	20	29.44	34.16
DaBomb-P	0	4.39	8.77	13.16	17.54	0	0

No significant difference

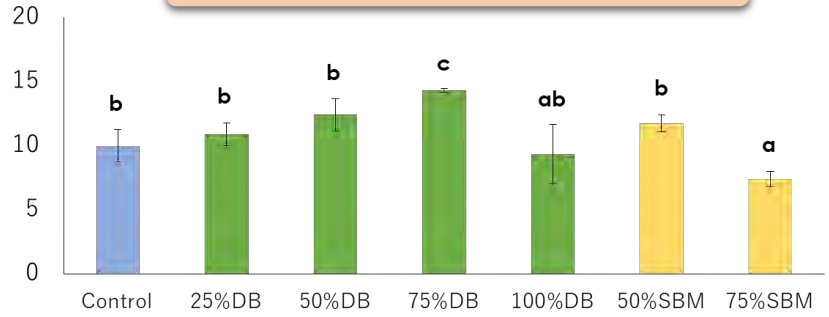


Published: *Lin,Y. H. and Chen Y. T. actobacillus spp. fermented soybean meal partially substitution to fish meal enhances innate immune responses and nutrient digest ibility of white shrimp (Litopenaeus vannamei) fed diet with low fish meal* , **Aquaculture**, 2022

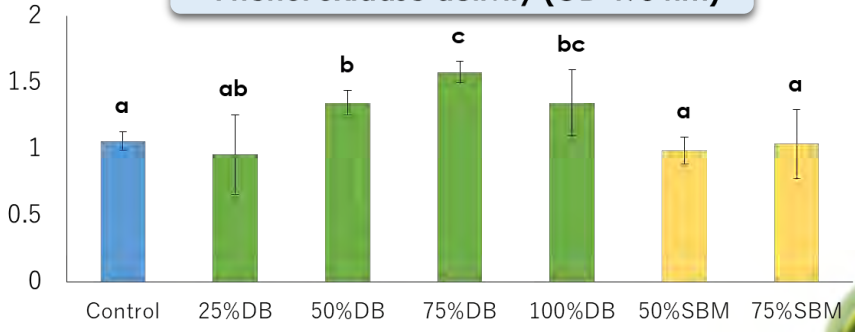
Replacing 75% fishmeal with DaBomb-P improve the immunity of white shrimp the most

Ingredient (%)	Control	25%DB	50%DB	75%DB	100%DB	50%SBM	75%SBM
Fish meal	15	11.25	7.5	3.75	0	7.5	3.75
Dehulled SBM	20	20	20	20	20	29.44	34.16
DaBomb-P	0	4.39	8.77	13.16	17.54	0	0

Total hemocyte count (10⁶/mL)



Phenol oxidase activity (OD 490 nm)



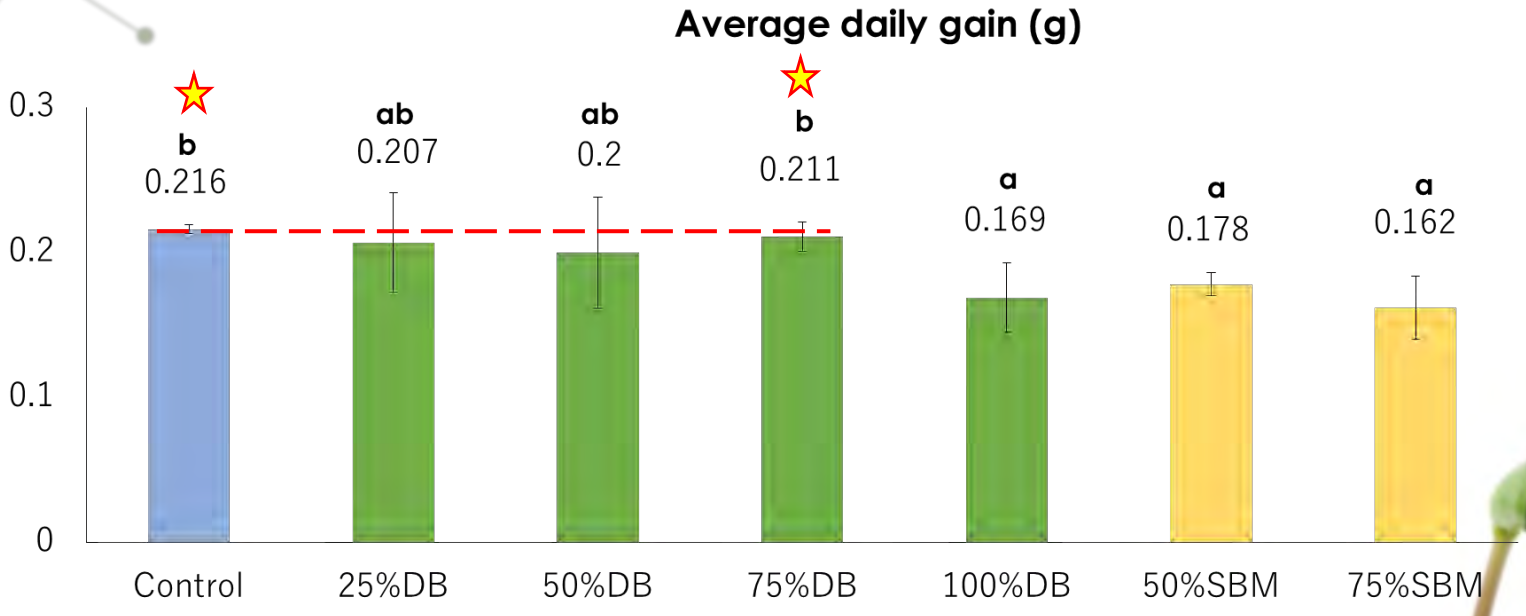
Total hemocyte count (THC): An indicator shrimp immune health, reflecting hemocyte activity in pathogen defense and immune s tatus changes.

Phenoloxidase: An enzyme in hemocytes, promotes the pro duction of bactericidal compounds to combat pathogen in fection, with higher activity indicating stronger antimicrobial ability.

Published: *Lin,Y. H. and Chen Y. T. actobacillus spp. fermented soybean meal partially substitution to fish meal enhances innate immune responses and nutrient digest ibility of white shrimp (Litopenaeus vannamei) fed diet with low fish meal* , **Aquaculture**, 2022

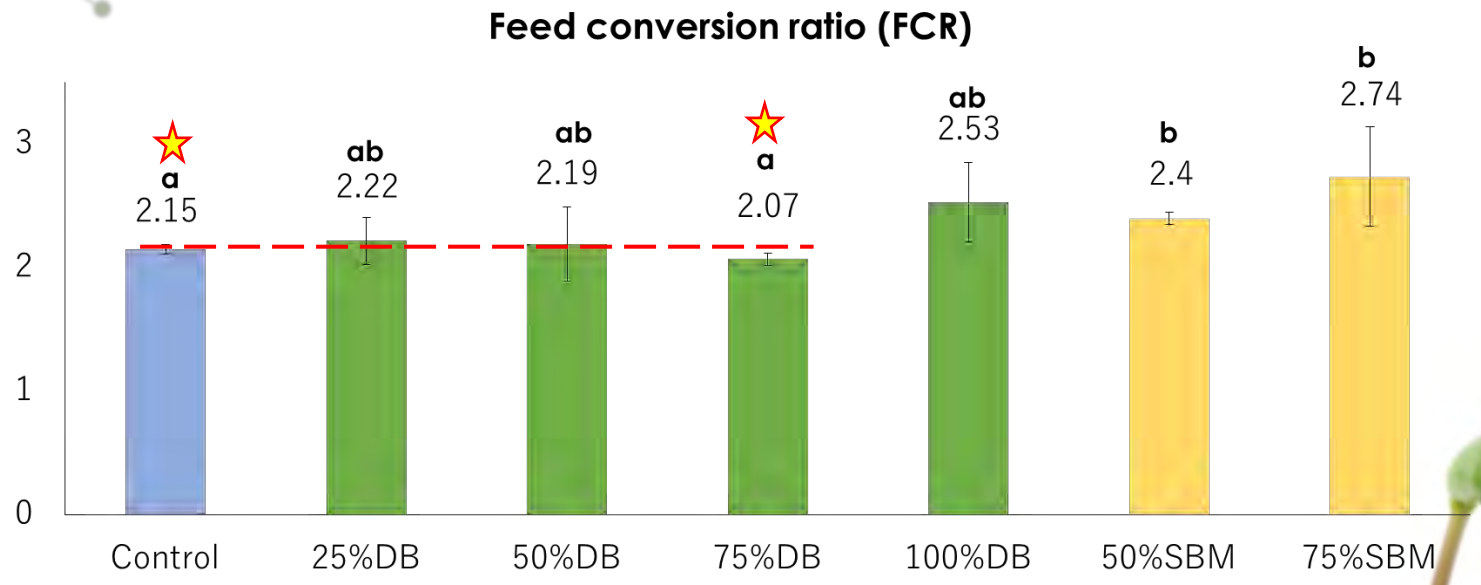
Replacing 75% fishmeal with DaBomb-P keep the growth performance of white shrimps

Ingredient (%)	Control	25%DB	50%DB	75%DB	100%DB	50%SBM	75%SBM
Fish meal	15	11.25	7.5	3.75	0	7.5	3.75
Dehulled SBM	20	20	20	20	20	29.44	34.16
DaBomb-P	0	4.39	8.77	13.16	17.54	0	0



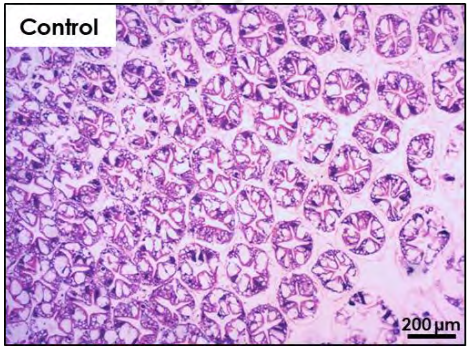
Replacing 75% fishmeal with DaBomb-P keep the better feed efficiency

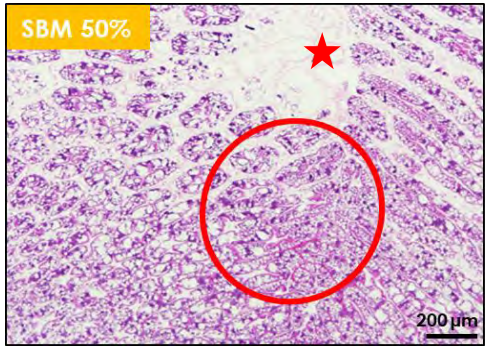
Ingredient (%)	Control	25%DB	50%DB	75%DB	100%DB	50%SBM	75%SBM
Fish meal	15	11.25	7.5	3.75	0	7.5	3.75
Dehulled SBM	20	20	20	20	20	29.44	34.16
DaBomb-P	0	4.39	8.77	13.16	17.54	0	0

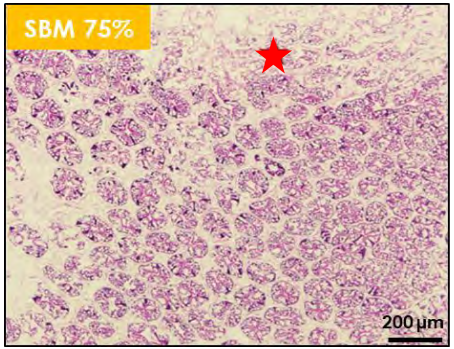


Replacing 75% fishmeal with DaBomb-P improves hepatopancreatic epithelial cell health in white shrimp

- When SBM replaced 50% fishmeal, negative effects such as cell necrosis and inflammation were observed.
- With DaBomb-P replacement was increasing, cell necrosis was decreased,
- The formula with DaBomb-P replacing 75% fishmeal showed the best morphology.



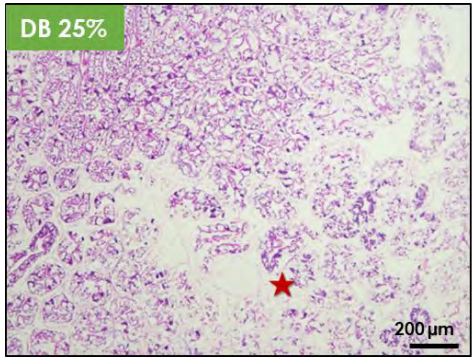


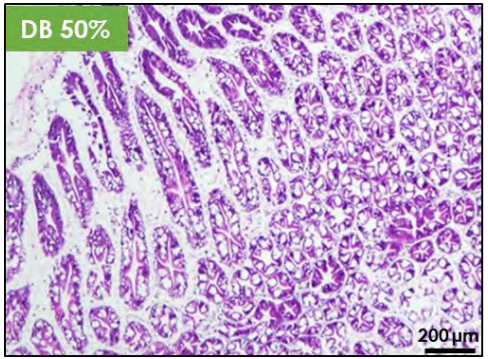


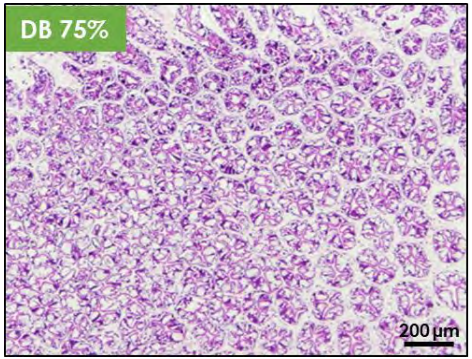
Hepatopancreatic tubule epithelial cells

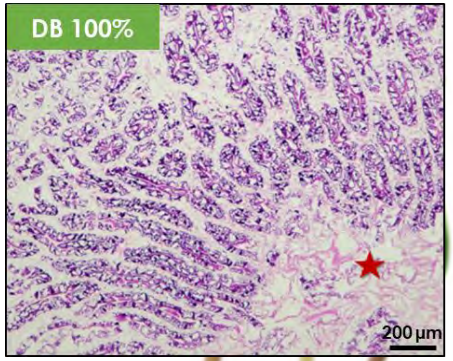
★ Cell necrosis (damage)

○ Cell inflammation









Conclusion

The key value of DaBomb-P

*Rich in **small soy peptides** and **lactobacillus postbiotics***

High digestible protein

- ✓ Time efficient protein digestibility
- ✓ Low ammonium nitrogen waste

Postbiotics regulates immunity

- ✓ Increase animal survival rate and feed efficiency

Best cost-saving protein solution

- ✓ **Improve feed stickness**
- ✓ **Palatability**
- ✓ **Replace 75% fish meal Keeping feed efficiency in shrimp feed**

The Best Protein · Beyond Protein

Conclusion

The key value of DaBomb-P

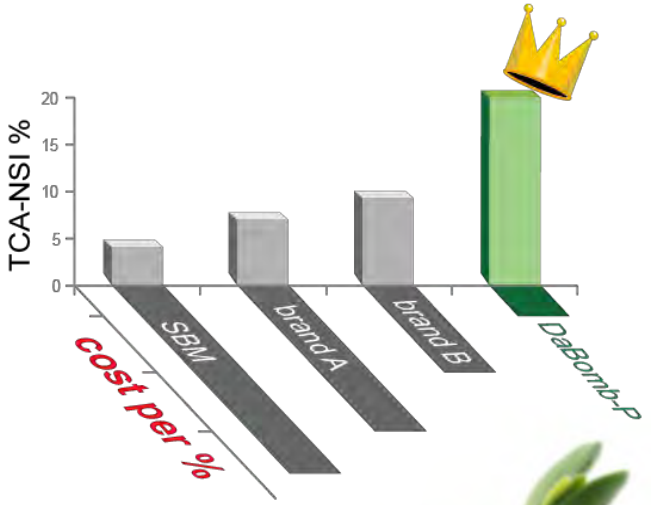
*Rich in **small soy peptides** and **lactobacillus postbiotics***

TCA-NSI index

an ideal indicator for FSBM quality evaluation

- National standard analysis method for small peptides

$$\text{FSBM cost} = \frac{\text{Price}}{\text{TCA-NSI\%}}$$



The Best Protein · Beyond Protein

DaBomb Protein Biotech Corp.

DaBomb inSide Probiosyntec

Best Protein Beyond Protein

Core Value

Safety
Food grade production line

Quality
High specification product

Modern
Advanced technology

Green
Environment friendly process

Core Technology

- Microbial fermentation scaling-up
- Probiotics and Enzyme Production
- Functional compounds extraction and purification technology

Core Product

- Hydrolyzed protein and peptide
- Probiotics and Enzyme
- Nutritional products for Pet

Service

- Contract Development and Manufacturing Organization (CDMO)
- Customized Formulation development

D&B TOP 1000 Elite SME Awards

National Award of Outstanding SME

Rising Star Award

Agribusiness Innovation Award

Taiwan Headquarters

Fujian DaBomb Protein

CDMO service

Contract Development and Manufacturing Organization

Core competitiveness：Highly experienced in probiotics and enzyme production.

Providing customers high efficiency R&D, shortening product time-to-market with one-stop process services

- Customer needs
- Sign a confidentiality agreement
- Technical feasibility assessment
- Set product specification
- Sign an OEM contract.
- Pilot scale production
- Large-scale production

FAMIQS HACCP ISO 22000

International standard certification production lines

Precision Fermentation

Fermentor scale
20L
500L
1 Mt
20Mt

Downstream production processing

- Freezing Dry
- Ultrafiltration
- Powder Mixing
- Pelleting
- Concentration
- Sray Dry

RD center Facility

RD center Facility

RD center Facility

Pilot scale Fermentation system

Pilot scale Fermentation system


Powder mixer and package


Freezing dryer


Ultrafiltration


Tableting machine


Vertical mixer

Large scale Production system

Pilot scale Fermentation system

Spray dryer atomizer

Pilot scale Fermentation system

20Mt Fermentor production Line

DaBomb inside®
Probiosyntec

DaBomb Protein

The Best Protein Beyond Protein