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BRAZIL'S SAFRINHA CORN MODELS, SAFRINHA PORTS & EXPORT PACE

EXEC EXECUTIVE SUMMARY

Brazil's safrinha corn season — the second crop planted in the February-March window after soybeans are harvested — is the defining variable for global corn supply balances through the second half of 2026. The safrinha accounts for approximately **80% of Brazil's total corn output** and is the origin of the vast majority of Brazil's export program, which reached 42-43 MMT in 2024/25 and is forecast by CONAB at **46.5 MMT** in 2025/26.

The 2025/26 crop cycle opens with **three compounding uncertainties**: (1) delayed planting — as of February 14, 2026, only **36%** of the safrinha crop was in the ground nationwide, well below the **59% planted at the same point last year**; (2) La Niña atmospheric conditions that historically truncate the wet season and threaten a critical pollination window in April-May; and (3) a **domestic demand surge** driven by the corn-ethanol boom, which is absorbing incremental supply and compressing the exportable surplus.

On the port and logistics side, Brazil's infrastructure has seen meaningful improvements. Paranaguá deepened its operational draft from 12.8m to **13.3m** through two dredging campaigns, adding ~3,700t per vessel call. Port of Paranaguá corn exports surged **503% in 2025** as it gained market share from Santos. However, the **Miritituba river terminal** — the critical Mato Grosso gateway — continues to face structural capacity constraints, with 30-km truck queues reported as of late February 2026.

Our central view: CONAB's 138.9 MMT total production estimate implies a historically large crop, but delivery timing risk is elevated. A late-planted safrinha that encounters an early dry-season cutoff in April-May represents the **single largest upside risk to CBOT corn prices** in 2026. We frame this as a **May-July corn spread trade**: long CBOT CK6/CN6 (May/July) as insurance against a pollination event, with a risk-reward skewed materially to the upside.

01 SAFRINHA CROP ARCHITECTURE

What Is the Safrinha?

The word "safrinha" is Portuguese for "little harvest" — a misnomer today, as it has overtaken the first crop (verão) to become Brazil's dominant corn season. The safrinha is planted as a **relay crop** immediately after first-crop soybean harvest, typically from late January through early March, in the center-west and south of Brazil.

The relay-planting model allows Brazilian farmers to maximize land utilization in a single growing season. Soybeans are harvested, fields are prepared rapidly, and corn seed is drilled into the soil — often still warm and moist from the soy crop — before the March planting deadline. Corn planted after approximately **March 10 in Mato Grosso** faces materially elevated frost risk and reduced growing degree days, compressing the ideal planting window to roughly **six to eight weeks** in the major producing states.

Key Producing States

State	Est. 2025/26 Output (MMT)	% of Safrinha Total	Primary Exit Port	Key Harvest Window
Mato Grosso	~51.7	~42%	Miritituba / Santos / Barcarena	Aug – Sep
Paraná	~16.9	~14%	Paranaguá	Jul – Sep
Goiás	~10.5	~9%	Santos / Paranaguá	Aug – Sep
Mato Grosso do Sul	~9.8	~8%	Santos / Paranaguá	Aug – Sep
Minas Gerais + Other	~11.6	~10%	Santos	Sep – Oct

Source: IMEA, CONAB, USDA FAS. Estimates for 2025/26 season. Mato Grosso figure per IMEA preliminary projection; -7% YoY decline from 2024/25 record.

02 2025/26 CROP MODELS — AGENCY ESTIMATES

The three principal forecasting bodies — Brazil's CONAB, the USDA, and independent consultant Michael Cordonnier — present a range of estimates for 2025/26 Brazilian corn production. At the high end, CONAB's preliminary estimate of **138.2–138.9 MMT** implies a historically large crop roughly flat to the 2024/25 record; at the low end, USDA's official projection of **131.0 MMT** reflects more conservative yield assumptions and greater uncertainty around La Niña impacts. Cordonnier, known for field-level scouting and a cautious approach, currently sits at **136 MMT** with a modest-negative bias given planting delays.

2025/26 Brazil Corn — Agency Model Comparison

Agency / Source	Total Production (MMT)	Exports (MMT)	Domestic Use (MMT)	Ending Stocks (MMT)
CONAB (Feb 2026)	**138.9**	46.5	94.6	13.5
USDA WASDE (Feb 2026)	131.0	43.0	93.5	12.0
Cordonnier (Pro Farmer, Feb 2026)	**136.0 ▼**	43–45	~93	~11.5
2024/25 Actual (Reference)	*~127*	*~42*	*~90.5*	*~13.0*

Note: ▼ indicates Cordonnier has a slight-negative bias on current estimates due to planting delays and La Niña trajectory. Sources: CONAB, USDA WASDE, Pro Farmer/Cordonnier.

Safrinha-Specific Crop Model Drivers

The safrinha model hinges on **four interacting variables** that are tracked sequentially through the growing season:

- **Planting window completion** (Jan 20 – Mar 10): Late planting truncates the growing season and forces corn through pollination under drier, cooler conditions. The ideal window for Mato Grosso closes around March 10.
- **Moisture availability at emergence** (Feb – Mar): Adequate soil moisture from the tail of the wet season is critical for establishment. The 2025/26 cycle has seen drier-than-normal conditions in Mato Grosso and Goiás.
- **Pollination window integrity** (Apr – May): This is the highest-risk phase. La Niña historically ends the wet season one to two weeks early, potentially exposing tasseling corn to heat and moisture stress.
- **Frost-free harvest window** (Jul – Sep): Paraná and southern Mato Grosso Grosso do Sul face frost risk after mid-July, compressing the allowable silage and grain-fill timeline.

03 PLANTING PROGRESS & AGRONOMIC RISK

As of February 14, 2026, **36% of the safrinha crop was in the ground nationally**, according to CONAB's weekly crop progress survey. This compares to **59% planted at the same date in the prior year** — a lag of 23 percentage points — and is well behind the five-year average planting pace. In Mato Grosso, which contributes roughly 42% of safrinha output, the state agricultural institute IMEA reported planting completion of only **67.2%** by late February, four points below the five-year average of 70.3% and nearly 13 points behind last year's 80.4%.

The planting delays are primarily attributable to **late soybean harvests** in the 2025/26 first-crop cycle. Dry weather through December 2025 and into January 2026 slowed soybean canopy development and extended the first-crop harvest timeline in Mato Grosso and Goiás. Since safrinha corn cannot be planted until soybeans are cleared, the soybean delay cascades directly into safrinha calendar risk.

Planting Progress Comparison — Safrinha Corn, Mato Grosso

Date	2025/26 % Planted	2024/25 % Planted	5-Year Average
Jan 31, 2026	21.6%	~38%	~35%
Feb 7, 2026	~28%	~50%	~48%
Feb 14, 2026	**36% ⚑**	59%	~55%
Late Feb 2026 (IMEA / MT)	**67.2% ▼**	80.4%	70.3%

⚑ National figure (CONAB). MT figure per IMEA. Lag versus prior year at late-Feb most acute since 2022 drought year.

The agronomic significance of this lag cannot be overstated. Corn planted in March rather than February in Mato Grosso enters pollination approximately three weeks later — in late May rather than early May — at a point when the wet season has typically concluded. In a La Niña year, when the

rainfall cutoff tends to arrive earlier than normal, this compressed calendar dramatically increases the probability of **pollination stress**, which can reduce yields by 15–30% versus potential.

04 WEATHER OVERLAY — LA NIÑA EXIT & POLLINATION WINDOW

The 2025/26 Southern Hemisphere growing season is characterized by a **moderate La Niña event** that CPC/IRI probabilistic models expect to fade out in **early 2026** (approximately February-March). However, the atmospheric response to La Niña — drier-than-normal conditions across Brazil's cerrado corn belt — typically persists for **four to six weeks beyond the oceanic signal**, meaning the agronomic impact on the safrinha crop may extend through **April and into early May**.

La Niña exerts its most damaging influence on the safrinha through two mechanisms: it **delays the onset of the wet season** by two to four weeks in November-December (already evidenced in the late soybean planting this season), and it **accelerates the dry-season transition** in March-April, potentially cutting the effective moisture window by three to five weeks. The convergence of a late-planted safrinha and an early rainfall curtailment in April-May is the **classic Brazilian corn shock scenario** — visible in 2021, 2012, and 2003.

La Niña Phase vs. Safrinha Crop Stress — Historical Reference

Season	La Niña Intensity	Planting Lag vs Avg	Yield Impact	CBOT Response (May–Jul)
2020/21	Moderate-Strong	~3 weeks late	**-18% YoY**	**+$1.45/bu CBOT**
2019/20	Neutral (El Niño exit)	On pace	+5% YoY	-$0.30/bu CBOT
2023/24	El Niño	Slightly early	+11% YoY	-$0.55/bu CBOT
2025/26 (Current)	**Moderate (fading)**	**~3–4 wks late**	**TBD — RISK**	**Watch Apr–Jun**

Critical pollination window for 2025/26: Given the late February planting pace, the majority of the Mato Grosso safrinha crop will not reach VT (tasseling) until **late May to early June 2026**. This overlaps with the historical dry-season onset, representing a **convergence risk** that is not yet reflected in CBOT front-month futures pricing as of February 2026.

05 PORT INFRASTRUCTURE — PARANAGUÁ, SANTOS & THE NORTHERN ARC

Brazil's corn export logistics chain has undergone a **structural upgrade cycle** over the past three years, with Paranaguá emerging as the primary beneficiary. Meanwhile, the Northern Arc — the riverine Miritituba-Barcarena corridor — continues to face infrastructure bottlenecks that limit its ability to absorb the full volume exported from Mato Grosso.

Port of Paranaguá (APPA)

Paranaguá is Brazil's single most important port for corn exports, serving as the primary exit for grain from Paraná and as an alternative corridor for Mato Grosso volumes that traverse the Ferroeste/Rumo rail network. In 2025, the port's corn export volumes surged by approximately **503%** versus the prior year, from 1.07 MMT to approximately 5.09 MMT, representing the fastest-growing commodity at the port by a substantial margin.

The port's **operational draft has been deepened in two stages**: from 12.8 meters to 13.1 meters in December 2024 (completed via rock removal at Pedra da Palangana), then to **13.3 meters in September 2025** through additional dredging. Each 50cm increment adds approximately **3,700 metric tonnes of cargo per vessel call**, meaningfully reducing freight costs per tonne and improving the competitiveness of Paranaguá FOB corn versus competing origins.

- In December 2024, MV Minoan Pioneer loaded a **record 77,000 tonnes** of corn in a single call at Paranaguá — the largest solid vegetable bulk shipment in the port's history.
- Total Paraná port system throughput exceeded **55 million tonnes** in 2025, growing 6.2% year-over-year, the fastest pace among all major Brazilian port complexes.
- Ongoing dredging under the APPA Capacity Master Plan targets a draft of **14.0 meters** by 2027, which would open the port to Capesize-class vessels and further reduce freight economics.

Port of Santos (CODESP / Santos Port Authority)

Santos remains Brazil's largest general cargo port by volume, handling approximately **60–65% of Brazil's total grain exports** in aggregate across soybeans, meal, and corn. For corn specifically, Santos serves as the primary exit route for Goiás, Minas Gerais, and portions of Mato Grosso Grosso do Sul. However, Santos' logistical constraints — congested rail access from the Santos-Jundiaí Railway, urban highway bottlenecks on the Rodovia Anchieta and Imigrantes — continue to generate **queue time and demurrage risk** during peak export months (August-October).

Santos' operational draft (currently ~14.5m in the main channel) is sufficient for Post-Panamax vessels, but berth availability during peak corn season frequently drives Panamax vessels to wait three to seven days at anchor — a significant cost variable for charterers and shippers. Santos FOB corn premiums versus CBOT are generally **3–8 cents/bushel weaker than Paranaguá** during August-September peak season, reflecting this logistics friction.

The Northern Arc: Miritituba — Barcarena — Santarém

The Northern Arc is a river-and-port complex that handles approximately **12 MMT of grain annually**, routing Mato Grosso production north via the BR-163 highway to the Miritituba river terminal, then by barge down the Tapajós and Amazon rivers to ocean-capable terminals at Barcarena (Port of Vila do Conde) and Santarém (Cargill terminal).

The corridor has been the most capital-intensive logistics investment in Brazilian agriculture over the past decade, with Cargill, Bunge, Amaggi, and ADM all operating river terminals at Miritituba. Despite this investment, **capacity constraints remain acute** at the Miritituba loading point. In February 2026, truck queues of **30 kilometres (20 miles)** were reported at Miritituba terminals, with drivers travelling 1,200 km from Mato Grosso facing waits of 24–72 hours. The terminal yards — designed for 200–500 trucks simultaneously — are being overwhelmed by the record Mato Grosso soy harvest that precedes corn in the logistics sequence.

For corn specifically, the Miritituba constraint matters most in the August-October window when safrinha corn competes with residual soybean exports for Northern Arc capacity. The **structural bottleneck at Miritituba** — not the barge or ocean terminal segments — is the binding constraint in the northern logistics chain.

Port Comparison Summary

Port / Corridor	2025 Corn Throughput (MMT)	Max Draft (m)	Key Constraint	2026 Outlook
Paranaguá	~5.1 (+503%)	13.3m	Rail access competition (soy/corn)	Positive — draft deepening, new berths
Santos	~15–18	14.5m	Road/rail congestion Aug–Oct	Stable — volume growth limited by access
Miritituba / Barcarena (N. Arc)	~5–6	N/A (river)	Truck queue / terminal capacity	Constrained — 30km queue Feb 2026
Santarém (Cargill terminal)	~1–2	~12.0m	River level seasonality	Improving — new private investment

06 EXPORT PACE & ANEC REGISTRATION DATA

Brazil's corn export program is concentrated into a **six-month window between July and December**, driven almost entirely by the safrinha harvest that flows from farm to port beginning in August. The first-crop (verão) corn, harvested April-May in southern states, contributes a smaller and typically domestically-consumed volume.

2024/25 Season Export Pace (Actual)

Brazil's corn exports in the 2024/25 crop year (June 2024 – May 2025) reached approximately **42 MMT**, representing a strong recovery from the weather-impacted 2023/24 season (~34 MMT). The export program was characterized by:

- **Heavy August-October loading pace** at both Paranaguá and Santos, with Paranaguá contributing disproportionately to growth due to the draft deepening and rail improvements.
- **Chinese purchases** accounting for approximately 40–45% of total Brazilian corn exports, with Iran, Japan, South Korea, Vietnam, and Egypt as secondary buyers. China's preference for Non-GMO and IP-segregated parcels drove selective FOB premiums at Santos.
- **Sub-$4.00/bu CBOT pricing** throughout much of the export window compressed farmer holding intentions and accelerated physical sales relative to prior seasons.

2025/26 Export Pace Outlook — ANEC & CONAB Projections

CONAB projects 2025/26 Brazilian corn exports at **46.5 MMT**, while the USDA maintains a more conservative estimate of **43.0 MMT**. The divergence largely reflects differing assumptions about the exportable surplus given domestic demand growth:

- **Domestic demand headwind**: CONAB projects Brazilian corn domestic consumption rising by **4.1 MMT to 94.6 MMT** — an all-time record — driven primarily by the ethanol sector expansion (see Section 07). This demand growth absorbs nearly the entirety of the YoY production increase in CONAB's model.

- **ANEC February registration data** (as of late February 2026): Total corn registrations for the February-March loading window are below year-ago levels, consistent with the typical pre-harvest pattern. The export program is not expected to accelerate until August 2026 when safrinha harvest volumes enter the logistics chain.
- **FOB Santos corn basis**: Currently quoted at approximately -20 to -25 cents/bu versus CBOT CZ6 (December 2026), reflecting ample origin supply and no nearby export demand pressure. The basis is expected to narrow (strengthen) as the harvest window approaches and Chinese procurement typically intensifies in Q3 2026.

Monthly Export Cadence Estimate — 2025/26 Projection

Month	Est. Volume (MMT)	Primary Port	Key Buyer	CBOT Basis Trend	Risk Flag
Jun–Jul	2–3	Santos	Iran, Egypt	Weak (-25 to -30c)	Low — early flow
Aug	7–8	Paranaguá / Santos	China, Japan	Firming (-15 to -20c)	Med — congestion risk
Sep	**10–12 ★**	Santos / Paranaguá	China (peak)	Peak strength (-8 to -12c)	**High — port congestion**
Oct	8–10	Santos / N. Arc	S. Korea, Vietnam	Stable (-12 to -15c)	Medium
Nov–Dec	5–7	Santos	Varied	Weakening (-18 to -25c)	Low

★ September is historically the peak single-month volume for Brazilian corn exports. Port congestion risk is highest during this window, particularly at Santos where soybean residual exports and new-crop corn exports compete for berth allocation.

07 DOMESTIC DEMAND VS. EXPORT COMPETITION — THE ETHANOL FACTOR

The most structurally significant change in Brazilian corn market dynamics over the past three years is the explosive growth of **corn-based ethanol production** in the country's center-west. Brazil, already the world's second-largest ethanol producer, has rapidly expanded its corn ethanol capacity as an alternative and complement to its traditional sugarcane ethanol program.

CONAB projects Brazilian domestic corn consumption to reach **94.6 MMT in 2025/26**, an increase of **4.1 MMT year-over-year** and an all-time record. The dominant growth driver is corn ethanol, with installed capacity in Mato Grosso alone having grown from near zero in 2018 to an estimated **4.5 billion litres** per year by end-2025. The corn ethanol industry is consuming approximately **12–15 MMT of corn annually** and growing.

This structural domestic demand growth has **fundamentally altered Brazil's export capacity calculus**. In a supply-constrained year (La Niña yield impact scenario), the competition between domestic ethanol plants and export channels for physical corn will be resolved first by price: ethanol plants that can bid above export netbacks (FOB Santos minus freight minus handling) will retain the grain. In a year where La Niña reduces safrinha output by 10–15 MMT relative to CONAB's base case,

the exportable surplus could shrink from 46.5 MMT to **36–38 MMT** — a deficit relative to market expectations that would represent a **significant positive catalyst for CBOT corn futures**.

08 TRADING FRAMEWORK & PRICE OUTLOOK

Base Case vs. Stress Scenario

Variable	BASE CASE	BEAR (Surplus)	BULL (La Niña Shock)
Brazil Production	135–138 MMT	138–142 MMT	**115–125 MMT**
Brazil Exports	42–44 MMT	45–48 MMT	**34–38 MMT**
CBOT CZ6 Range (Dec 2026)	$4.20–$4.80/bu	$3.80–$4.20/bu	**$5.20–$6.20/bu**
FOB Santos Basis	-15 to -20c/bu	-20 to -28c/bu	**-5 to +5c/bu**
Port Congestion (Aug–Sep)	Moderate	High — record volume	Low — reduced volume

Recommended Trading Positions

- **Long CBOT CK6/CN6 spread (May/July 2026)**: The most direct expression of pollination risk. If La Niña delays the dry season and early April rainfall supports an on-time crop, the spread stays flat to slight contango. If a late-planted crop hits a May dry pocket, the May contract tightens. Recommended entry at -4 to -6 cents (May premium to July), target +10 to +15 cents.
- **Long CBOT CN6 (July 2026) calls**: $4.80 and $5.00 strikes offer asymmetric upside on a production shock. Implied volatility has not yet priced the planting lag, making options relatively cheap versus historical analogues (2020/21).
- **FOB Santos physical corn basis longs** (for participants with physical access): Basis at -20 to -25 cents versus CZ6 is historically wide for this time of year. A tighter-than-expected Brazilian harvest narrows basis aggressively in August. Structural target -8 to -12 cents.
- **Monitor IMEA weekly planting reports** (Tuesdays): The most timely indicator of the planting lag trajectory. A catch-up to 85%+ planted in Mato Grosso by February 28 would reduce risk; remaining at 70–75% by March 7 would confirm the stress scenario.
- **April rainfall is the pivot variable**: Watch for ENSO model updates in late February and March. An early cessation of the Intertropical Convergence Zone in the cerrado region in April is the trigger for position sizing up. CPC tropical weather outlooks are published weekly.

RISK MATRIX

Risk Factor	Probability	Price Impact	Monitor
La Niña truncates wet season; pollination stress on late-planted safrinha (Apr–May)	35%	HIGH (+)	ENSO weekly updates; IMEA planting pace; April rainfall anomaly maps
Safrinha planting pace catches up — La Niña fades faster than modeled	30%	MEDIUM (−)	IMEA/CONAB weekly; CPC ENSO probability update (Feb, Mar)
Mirituba/Santos port congestion delays safrinha export window, widens carry	40%	MEDIUM (spread)	ANEC vessel line-up data; APPA/CODESP berth utilisation reports
China demand surprise — large Q3 corn procurement drives FOB premium strength	25%	HIGH (+)	GASC/China customs weekly corn import data; ANEC RNDTS registration
BRL/USD weakness: depressed FX reduces farmer selling motivation, delays export flow	45%	LOW–MED	BRL/USD spot; CEPEA domestic corn price (Campinas); ESALQ index
US corn production surprise (large crop) overwhelms Brazil weather premium	20%	HIGH (−)	USDA Prospective Plantings (Mar 28); NOAA US crop forecasts

K2 Capital — Safrinha Corn Theme Scorecard		
SUPPLY RISK ▲ ELEVATED Late planting + La Niña tail risk	**PORT LOGISTICS** ◆ IMPROVING Paranaguá draft deepened; N. Arc bottlenecked	**TRADE CONVICTION** ★ HIGH CK6/CN6 spread; CN6 calls

138.9 MMT CONAB 2025/26 Total Corn	**~46.5 MMT** CONAB Export Forecast 25/26	**~80%** Safrinha Share of Total Crop
+503% Paranagua Corn Export Growth (2025)	**36%** Safrinha Planted (Feb 14, 2026)	**13.3m** Paranagua Operational Draft (2025)