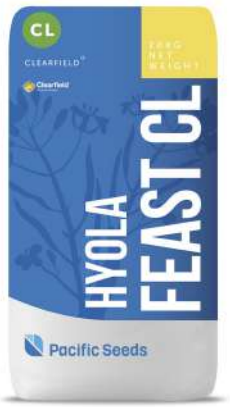
TECHNOTE 2020

CANOLA

HYOLA FEAST CL



CLEARFIELD®

Clearfield Production System

Australia's earlier maturing Graze n Grain Winter CL canola hybrid from Pacific Seeds

HYBRID ATTRIBUTES

Hyola® Feast CL has an 8 series flowering and windrowing maturity (5-8) days less than Hyola 970CL.

Lower vernalization requirement which provides larger areas of adaptation across more Dryland cropping regions in Australia.

Grain yields between 5 to 20% higher than Hyola 970CL across environments including later sowings and also higher than Phoenix CL and SF Edimax CL.

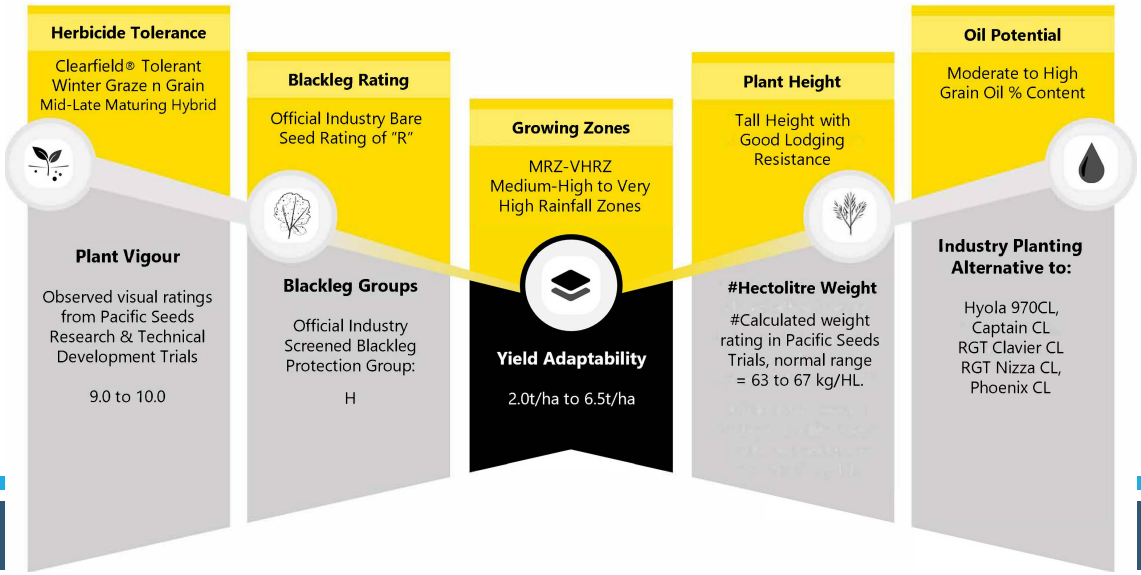
Observed visual early plant vegetative vigor is higher than Phoenix CL and SF Edimax CL and slightly less vs Hyola 970CL.

DM production (t/ha) is 8 to 13% higher than Phoenix CL and SF Edimax CL and 5-8% less than Hyola 970CL.

Grain Oil % content over all 7 trial environments is 0.4% higher than Hyola 970CL and 0.8 to 1.2% higher than Phoenix CL & SF Edimax CL.

Very high blackleg rating of R(P), unique group H, perfect for rotating disease resistance in Australia's canola regions.

Data Source for comparisons: Pacific Seeds internal company replicated trials across 4 states in Australia. Clearfield® is a registered trademark of BASF.



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WINTER CL CANOLA TRIAL RESULTS SUMMARY

Performance	2019 Pacific Seeds Replicated Canola Trial Summary of Results
Dry Matter Production (t/ha) & Hay Value ($/ha)	*Hyola Feast CL provides an average of over 4600kg of DM per ha which is up to 700kg/ha higher DM grazing production than Phoenix CL & SF Edimax CL. Hyola Feast CL extra DM effectively provides $100-200/ha extra Hay value vs Phoenix CL & SF Edimax CL based on Hay value at $275/t
Lamb Yield ($/ha)	*Hyola Feast CL also provides an extra $150-$250/ha gross income from Lamb Yield $/ha (100g/day meat @ $7.00/kg) when compared to Phoenix CL and SF Edimax CL based on 30kg lambs @1.2kg DM/hd/day
Grain Yield (t/ha)	#Hyola Feast CL has shown in replicated trials between 200kg-400kg higher harvested grain yields than Phoenix CL and SF Edimax CL
Oil% Content & Gross Returns ($/ha)	#Hyola Feast CL has demonstrated between 0.5 to 1% higher oil % content than Phoenix CL and SF Edimax CL. #Hyola Feast CL has shown between $100-$200/ha higher gross income from additional grain yields than both Phoenix CL and SF Edimax CL
Blackleg Resistance	Hyola Feast CL has a high Blackleg rating of R (P) for Adult resistance with a unique Resistance group H making it a smart choice Graze n Grain Winter canola hybrid for effective blackleg resistance rotational management

*Source: 3 replicated trials conducted across Australia in 2019: # Source: 7 replicated trials conducted by independent service providers across Australia in 2019. Hay values and Lamb yields were based on calculation guidelines from data sourced; www.riagronomy.com.au

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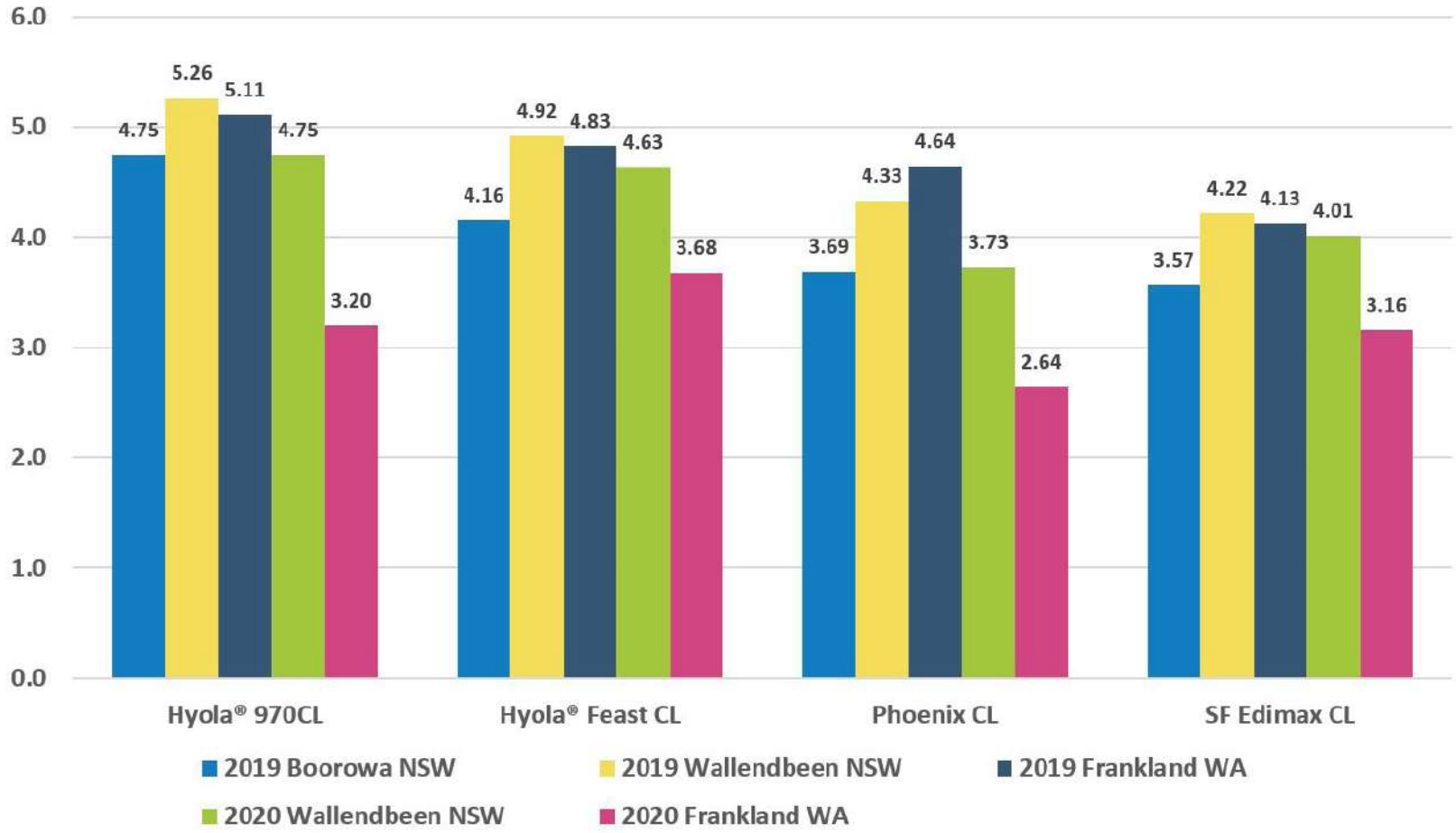
2019 + 2020 Mean Dry Matter t/ha across 5 Winter CL Replicated Trials



2019 + 2020 Pacific Seeds Replicated Hyola Technical Extension Trials evaluating Winter CL hybrids. DM in t/ha was measured from 1m2 cuts taken from all 3 replicates of all 5 locations being 2019 Boorowa NSW, 2019 & 2020 Wallendbeen NSW, 2019 & 2020 and Frankland in WA. Feed Test studies and Analysis was conducted by Feed Central in Toowoomba, Qld and Forage Lab Australia in Bendigo, Vic.

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WINTER CL TRIAL FEED QUALITY ANALYSIS SUMMARY

Hybrid Variety	Maturity Series	Growth Stage	Plant Component	Mean Dry Matter (kg/ha)	Mean Available Protein (%)	Mean ME (MJ/kg.DM)	% TDN
Hyola® 970CL	9.0	Vegetative	Bulk - Stem, Leaf, Midrib, Lamina	5040	20.53	11.53	68.97
Hyola® Feast CL	8.0	Vegetative	Bulk - Stem, Leaf, Midrib, Lamina	4640	20.50	11.10	66.57
Phoenix CL	8.5	Vegetative	Bulk - Stem, Leaf, Midrib, Lamina	4220	21.73	11.50	68.37
Edimax CL	9.0	Vegetative	Bulk - Stem, Leaf, Midrib, Lamina	3970	22.17	11.53	68.43

Hybrid Variety	Maturity Series	Growth Stage	Plant Component	% NDF	%WSC	% Lignin	% Starch
Hyola® 970CL	9.0	Vegetative	Bulk - Stem, Leaf, Midrib, Lamina	31.90	22.17	3.83	3.87
Hyola® Feast CL	8.0	Vegetative	Bulk - Stem, Leaf, Midrib, Lamina	33.67	19.27	4.70	4.73
Phoenix CL	8.5	Vegetative	Bulk - Stem, Leaf, Midrib, Lamina	29.73	22.57	4.13	4.13
Edimax CL	9.0	Vegetative	Bulk - Stem, Leaf, Midrib, Lamina	30.00	19.10	4.07	4.37

2019 Pacific Seeds Replicated Hyola Technical Extension Trials evaluating Winter CL hybrids. Harvested plant biomass DM in t/ha was measured from 1m2 cuts taken from all 3 replicates of all 3 locations being Boorowa NSW, Wallendbeen NSW and Frankland in WA. Feed Test Analysis was conducted by Feed Central in Toowoomba, Qld.

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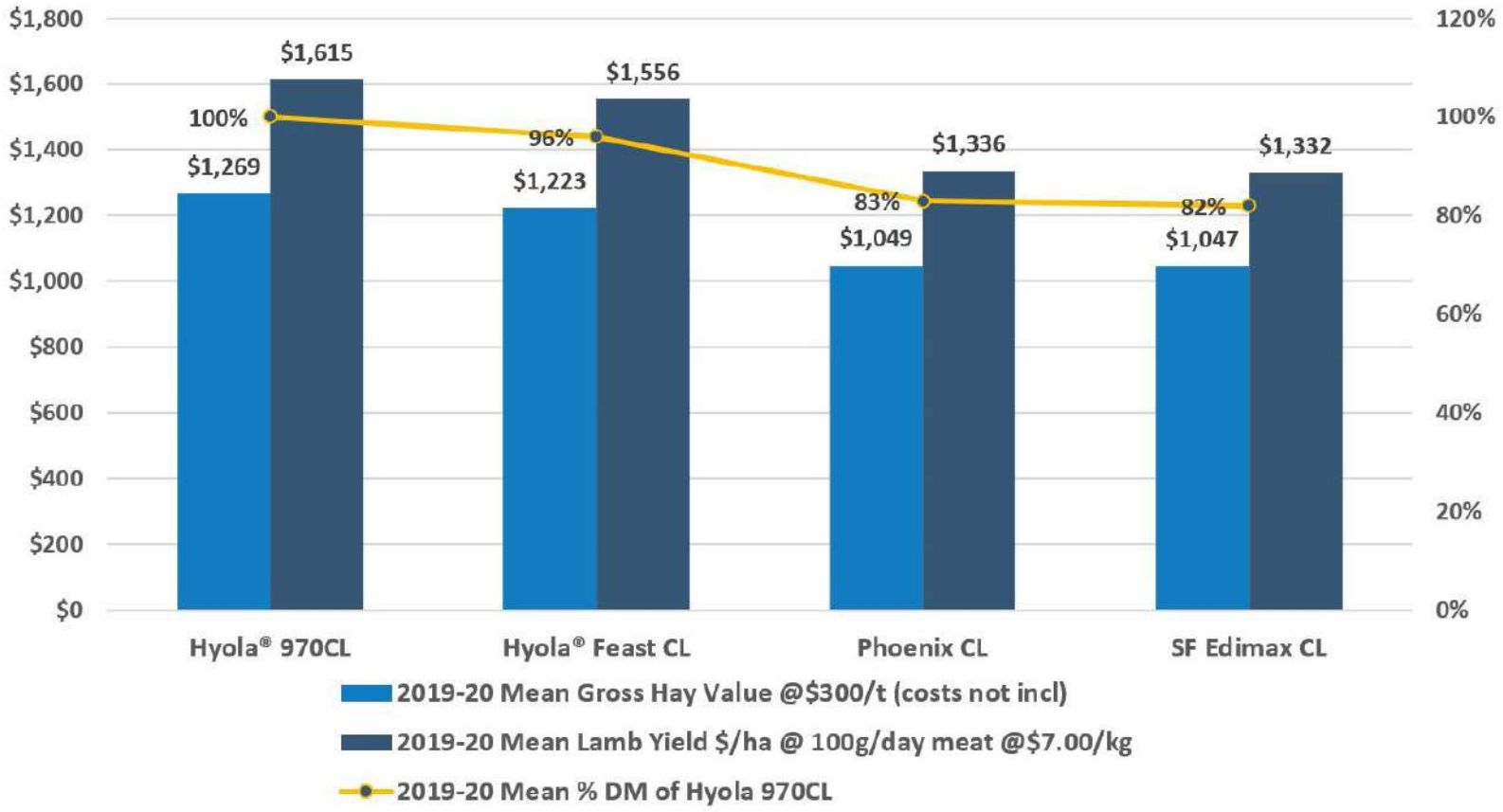
2019 - 2020 Mean Gross Hay Value ($/ha) and Lamb Yield ($/ha) across 5 locations



2019 - 2020 Pacific Seeds Replicated Hyola Technical Extension Trials evaluating Winter CL hybrids. DM in t/ha was measured from 1m2 cuts taken from all 3 replicates of all 5 locations being Boorowa NSW, Wallendbeen NSW * 2 and Frankland * 2 in WA. Feed Test studies and Analysis was conducted by Feed Central in Toowoomba, Qld and Forage Lab Australia in Bendigo, Vic. Hay values and Lamb yields were based on calculation guidelines from data sourced; www.riagronomy.com.au

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2019-20 WINTER CL TRIAL FEED COMPARISON SUMMARY

Hybrid Variety Herbicide Technology	Maturity Series 7 Trials	Actual Mean Dry Matter Yield - 3 Trials	Mean % DM of Hyola 970CL - 3 Trials	Gross Hay Value @$275/t (costs not incl)	Grazing Yield 60% (less 40% residual loss)
Clearfield®	Windrowing	(kg/ha)	% DM	$/ha	kg/ha DM
Hyola® 970CL	9.0	4,614	100%	$1,269	2,768
Hyola® Feast CL	8.0	4,446	96%	$1,223	2,668
SF Edimax CL	9.0	3,816	83%	$1,049	2,290
Phoenix CL	8.5	3,806	82%	$1,047	2,284

Hybrid Variety Herbicide Technology	30kg lambs @1.2kg DM/hd/day #Assumes plants are actively growing			Lamb Yield $/ha @ 100g/day meat @$7.00/kg	Equivalent Grain Yield required @ $600/t
	#30 days	#60 days	#90 days		
Clearfield®	lambs/ha			$/ha	t/ha
Hyola® 970CL	77	38	26	$1,615	2.7
Hyola® Feast CL	74	37	25	$1,556	2.6
SF Edimax CL	64	32	21	$1,336	2.2
Phoenix CL	63	32	21	$1,332	2.2

2019-2020 Pacific Seeds Replicated Hyola Technical Extension Trials evaluating Winter CL hybrids. Harvested plant biomass DM in t/ha was measured from 1m2 cuts taken from all 3 replicates of all 5 locations being Boorowa NSW, Wallendbeen * 2 in NSW and Frankland * 2 in WA.

Feed Test studies and Analysis was conducted by Feed Central in Toowoomba, Qld and Forage Lab Australia in Bendigo, Vic. Hay values and Lamb yields were based on calculation guidelines from data sourced; www.riagronomy.com.au

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2019 Mean Grain Yield (t/ha) and Mean Oil % across 7 Winter CL Replicated Trials

Hybrid Variety	Analysed Yield t/ha	Analysed Yield t/ha	Analysed Yield t/ha	Analysed Yield t/ha	Analysed Yield t/ha	Analysed Yield t/ha	Analysed Yield t/ha	
Location	Kojonup WA	Frankland WA	Cummins SA	Wallendbeen NSW	Boorowa NSW	Shepparton Vic	Lake Bolac Vic	MEAN
Hyola® Feast CL	1.60	3.51	1.77	0.81	1.10	2.08	4.37	2.18
Hyola® 970CL	1.13	3.07	1.35	0.69	0.89	2.03	4.13	1.90
Phoenix CL	0.97	2.77	1.05	0.57	0.77	1.84	3.95	1.70
Edimax CL	1.02	2.70	0.45	0.52	0.72	1.66	3.65	1.53
MEAN CV LSD	1.17 17.50 0.35	2.50 15.20 0.65	1.20 18.28 0.40	0.46 21.95 0.18	0.77 11.36 0.15	1.85 9.64 0.30	3.61 7.21 0.44	

Hybrid Variety	Mean Oil %	Mean Oil %	Mean Oil %	Mean Oil %	Mean Oil %	Mean Oil %	Mean Oil %	
Location	Kojonup WA	Frankland WA	Cummins SA	Wallendbeen NSW	Boorowa NSW	Shepparton Vic	Lake Bolac Vic	MEAN
Hyola® Feast CL	41.8	45.8	43.5	38.6	39.4	42.4	44.2	42.2
Hyola® 970CL	42.1	44.9	42.7	38.3	39.3	41.3	43.8	41.8
Phoenix CL	42.1	44.6	40.7	38.1	39.9	39.3	45.1	41.4
Edimax CL	42.0	45.5	39.5	37.7	39.4	39.3	43.3	41.0

2019 Pacific Seeds Replicated Hyola Technical Trials evaluating Winter CL hybrids. Grain Yield in (t/ha) and Oil% DM in t/ha was measured from all 3 replicates of all 7 locations being Boorowa NSW, Wallendbeen NSW, Shepparton Vic, Lake Bolac Vic,Cummins SA, Kojonup WA and Frankland in WA.

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WINTER CANOLA RECOMMENDED GROWING REGIONS

State	Winter Hybrid - Hyola Feast CL Recommended Growing Regions
NSW/QLD	NSW - Central West, South West, Central Tablelands, Southern Slopes & Tablelands, MIA irrigation zones, and Riverina. Qld - South East & NQ for Grazing & Silage
VIC	Western Districts, Central Districts, Wimmera, North East, Irrigation zones and Gippsland
TAS	Southern, Central and Northern Midlands, up to Wynyard on the North West Coast and into the Derwent Valley
SA	South East, Mid North, irrigation zones, Lower Eyre Peninsula & Kangaroo Island
WA	South Western, Southern Coastal, irrigation zones and Central/Northern Coastal regions

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AGRONOMIC MANAGEMENT OF WINTER HYBRIDS

In general, the choice of variety for specific sowing dates, regions and grazing management will be the key to maximising the dual-purpose value of canola. Significant forage for grazing can be produced by sowing Winter Hybrid canola types early, without compromising yield, as has been demonstrated for dual-purpose wheat.

AGRONOMY	SPRING SOWN GRAZE N GRAIN	AUTUMN SOWN GRAZE N GRAIN	AUTUMN SOWN GRAIN ONLY
Sowing dates	Mid Sept to Mid Nov. Don't sow into Summer, as excessive heat can affect emerging plants & growth	Early Feb to End of April. From early May best to sow regular Spring Hybrids	Early Feb to End of April. From early May best to sow regular Spring Hybrids
Sowing rates	3kg/ha to 4kg/ha	2.5kg/ha to 3.5kg/ha	2.5kg/ha to 3.5kg/ha
Sowing depth	15-20mm Normal canola sowing depth	15-20mm Normal canola sowing depth	15-20mm Normal canola sowing depth
Soil types	Suited to light sands to clay loams to heavy clays	Suited to light sands to clay loams to heavy clays	Suited to light sands to clay loams to heavy clays
Herbicide tolerance	Clearfield Technology	Clearfield Technology	Clearfield Technology
Rainfall zones	High (500mm+ or irrigation)	Med-high (400mm+)	Med-high (400mm+)
Seed treatments	Cruiser® Opti + Maxim® XL	Cruiser® Opti + Maxim® XL	Cruiser® Opti + Maxim® XL
Target plants/m2	30 to 60/m2 Sowing rate depends on potential grazing intensity and factors such as insects, stubble loads, moisture and soil type. Spring sowing plant losses can be as high as 30%	30 to 40/m2 Sowing rate depends on potential grazing intensity and factors such as insects, stubble loads, moisture and soil type	25 to 30/m2 Sowing rate depends on factors such as insects, stubble loads, moisture and soil type

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