Monitoring Cherry Supply Chain Quality (CY25002)

31ST MAY 2026

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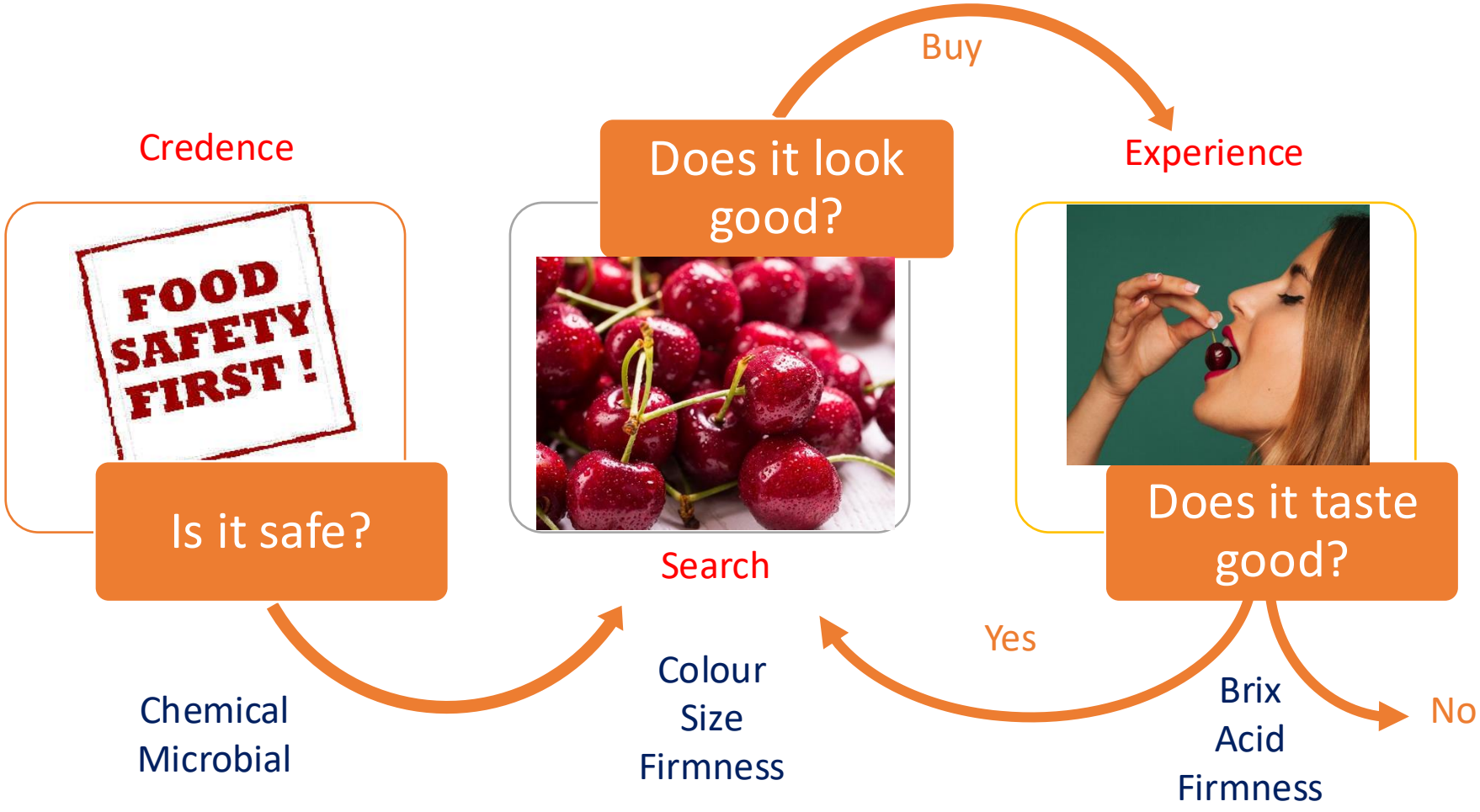
Project Objectives

- Raise the overall quality of Australian cherries by developing and supporting the adoption of agreed minimum quality standards
- Providing real-time feedback on cherry maturity at retail, wholesale and export by:
  - Supporting those who already consistently produce high-quality fruit and helping them elevate their quality
  - Supporting improvements for producers who don't yet meet the minimum maturity standard

About Delytics

- Delytics specialises in adding value to primary industry supply chains by helping them increase the consumer demand and value of their fruit.
- We do this by combining our in-depth understanding of consumer behaviour and produce maturity to optimise eating quality.
- Delytics has worked with avocados, kiwifruit, oranges, mandarins, cherries, melons, mangoes, soft fruit, macadamias, summerfruit, table grapes …

How consumers buy fruit



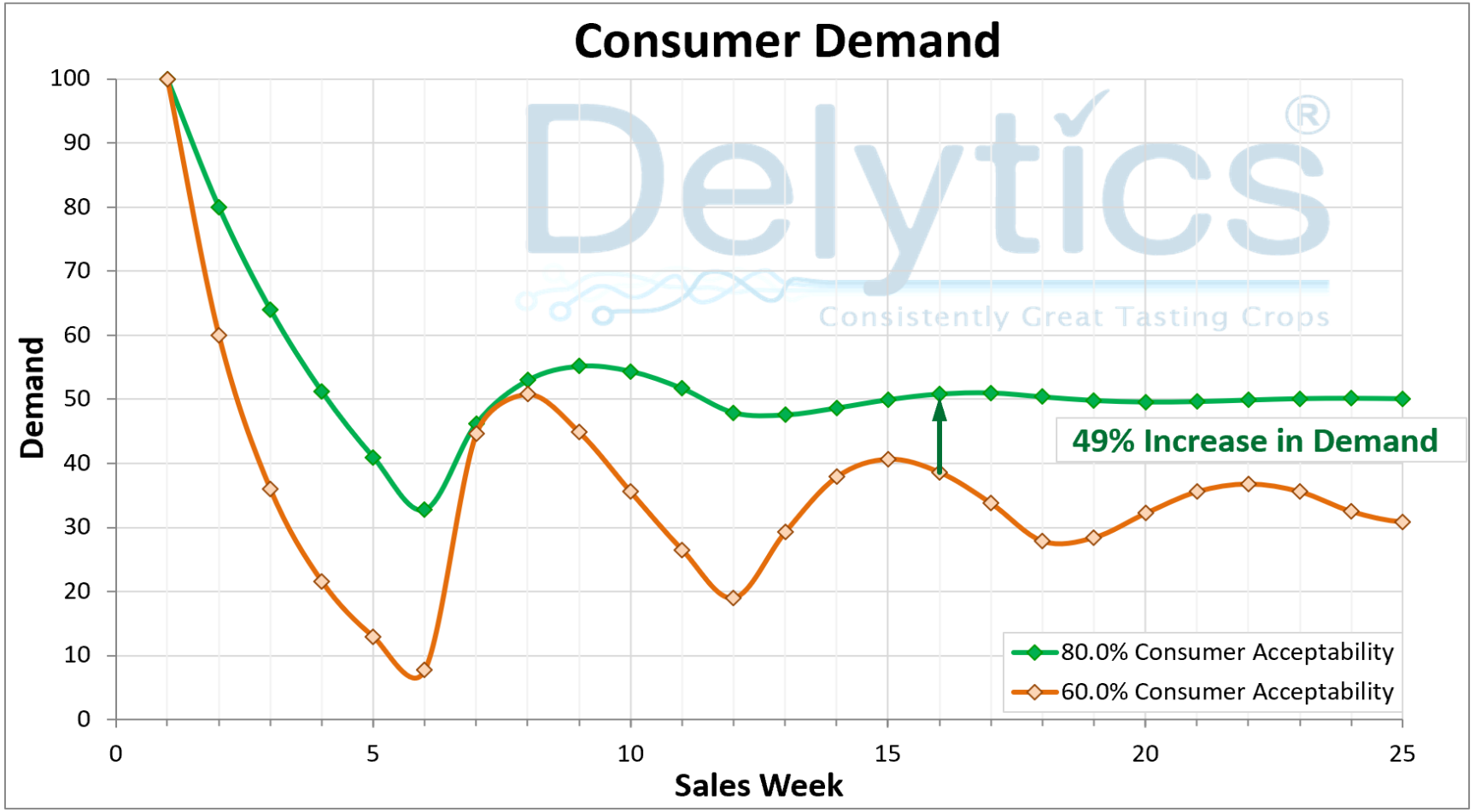
Consumer purchase behaviour

- Consumer eating experience directly influences purchase intent
- Consistent positive eating experiences increase repurchase rate
- Negative eating experiences delay repurchases by 6 to 14 weeks,
  - Need 2-3 good experiences to regain trust
- Inconsistent eating experiences decrease repurchases
- Price is a proxy for perceived quality
- Delivering consistently good tasting fruit can put your fruit at the top of the market

Sales demand model

- Customers purchase once per week
- Previous weeks eating experience influences next week's buying behaviour
  - Repurchase same amount next week after a positive eating experience
  - Delay 6 weeks before repurchase same amount after a negative eating experience
  - After a negative experience, consumers require 2-3 positive experiences to regain full acceptance

Sales demand model results



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Key project activities

- Wholesale, retail and export monitoring
  - Compliance with Standards
  - Individual feedback to growers
  - Deidentified industry results available on-line
- Consumer Taste Panel
  - To help the industry set an achievable and realistic Minimum Maturity Standards

Maturity Monitoring Results

Wholesale and Retail

From 12 December 2025 to
26 February 2026

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Sampling & Measurement

- 215 cherry samples were collected from export, retail and wholesale in Melbourne, Sydney & Brisbane
- 10 cherries from each sample were measured for Brix, acid and firmness and tasted for overall, flavour and texture liking
- Overall the team measured and tasted 2118 cherries
- Deidentified results were posted daily to the Cherry Growers Australia website under the project page

Current CGA Maturity Standards

TASTE AUSTRALIA

AUSTRALIAN CHERRY EXPORT QUALITY SPECIFICATIONS

The following specifications have been developed by the Australian cherry industry as a vital communication tool between suppliers and international buyers.

SAMPLE SIZE

Test and record a minimum 10 cherries for each assessment, then calculate and record the average.

FIRMNESS

Firmtech (g/m^2)	380	350	320	300	290	260	240	225
	Extremely Firm		Very Firm		Firm			Domestic Retail
Durofel/ Agrosta (4.5)	84	78	71	67	64	58	53	50

SWEETNESS

Brix (%)	21	19	17	16	15
	Super sweet	Very sweet	Sweet	Moderately sweet	Domestic Retail

COLOUR

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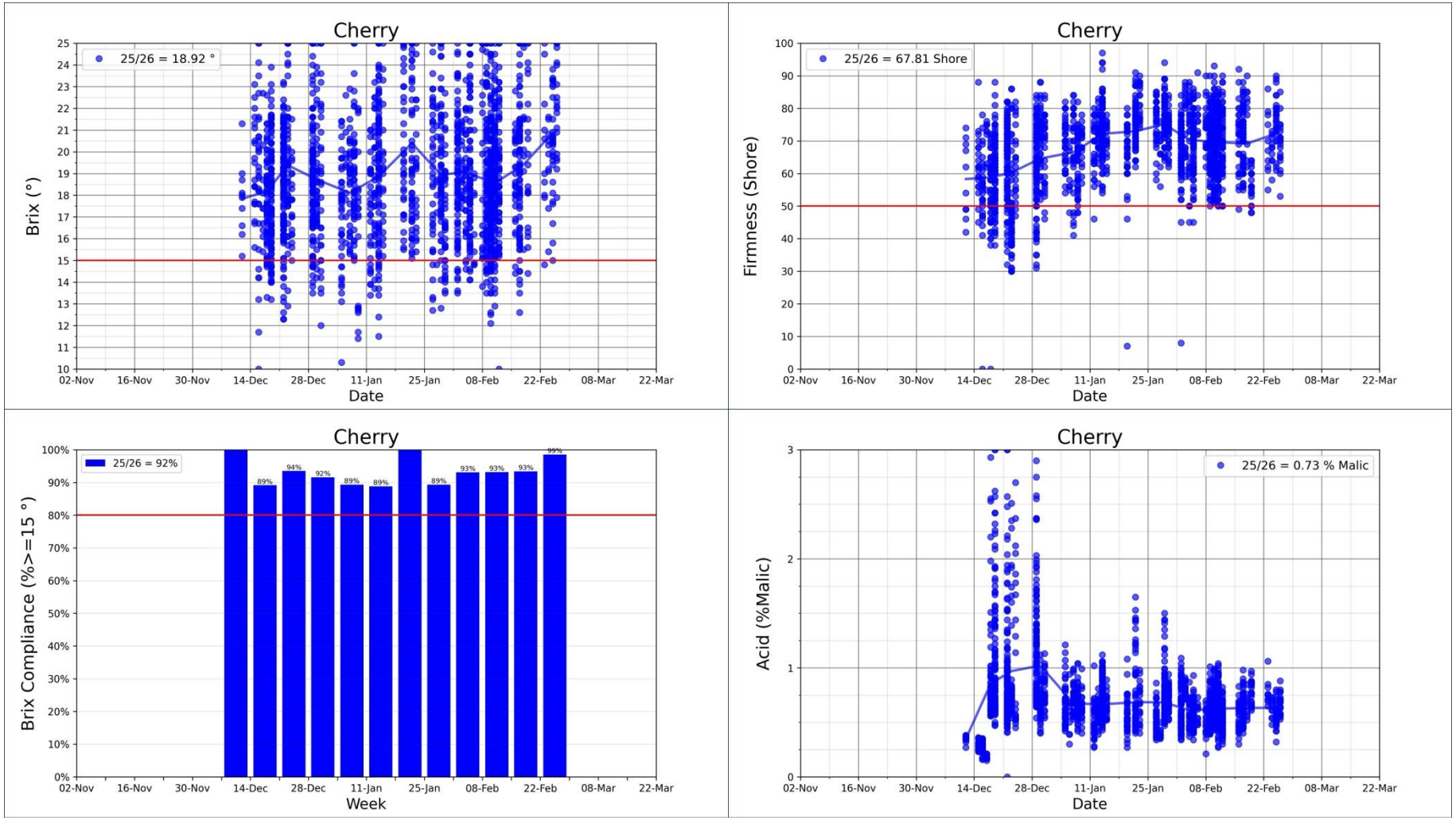
All Cherries



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Consumer Sensory Panel Methodology

At CSIRO in Werribee

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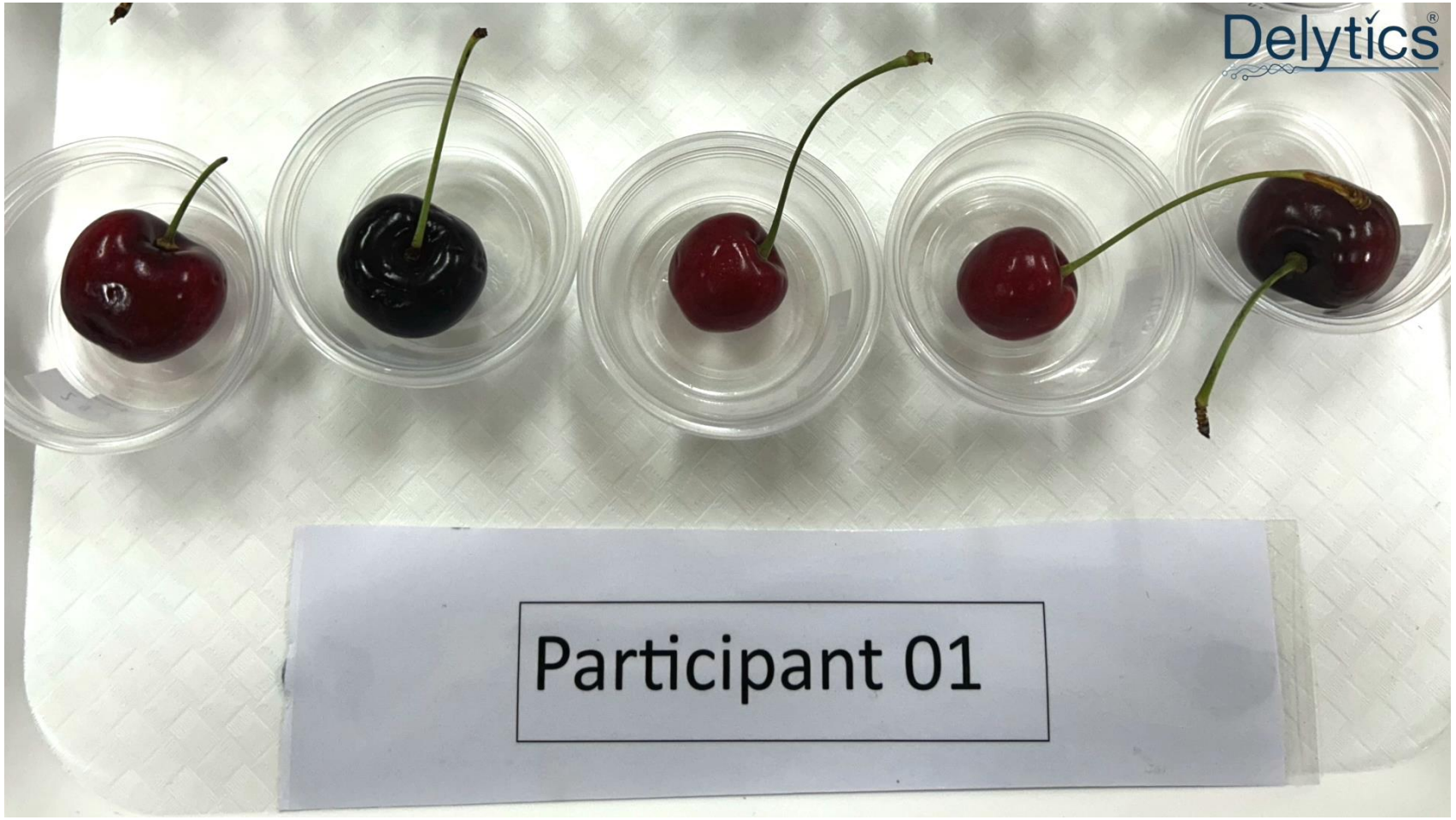
Big Picture

- The study was conducted by the CSIRO Sensory and Consumer Science team at Werribee from 14th to 30th of January 2026.
- Rudge Produce Systems delivered cherries (mostly Lapins as requested) from multiple growers, at multiple times.
- Cherries were stored at 0-2˚C until required.
- All cherries were pre-sorted, and any stemless cherries and cherries with visual defects were excluded.
- The samples were allowed to reach room temperature before tasting and analysis
- CSIRO's ethics approval for consumer sensory evaluations (approval number: 2021_084_LR B)

The Panel

- The panel comprised 113 regular cherry consumers
  - 101 participants from with wider community
  - 12 were CSIRO internal staff.
  - Roughly equal gender and age split
  - 66% of participants ate cherries multiple times per week
- Each consumer tasted 10 cherries with a range of maturities
- Each cherry (1130) was measured for colour and firmness, scored for overall, flavour and texture liking, then measured for Brix and acid

Sensory Process Video



Consumer Sensory Panel Results

Predominantly Lapins

Consumer Acceptance

- Liking score is 1 to 9
- Like: Score ≥ 6
- Dislike: Score ≤ 4

- $Acceptance = \frac{Total\ likes}{Total\ Tastes}$

Score	Description
9	Like extremely
8	Like very much
7	Like moderately
6	Like slightly
5	Neither Like nor Dislike
4	Dislike slightly
3	Dislike moderately
2	Dislike very much
1	Dislike extremely

Minimum Consumer Acceptance?

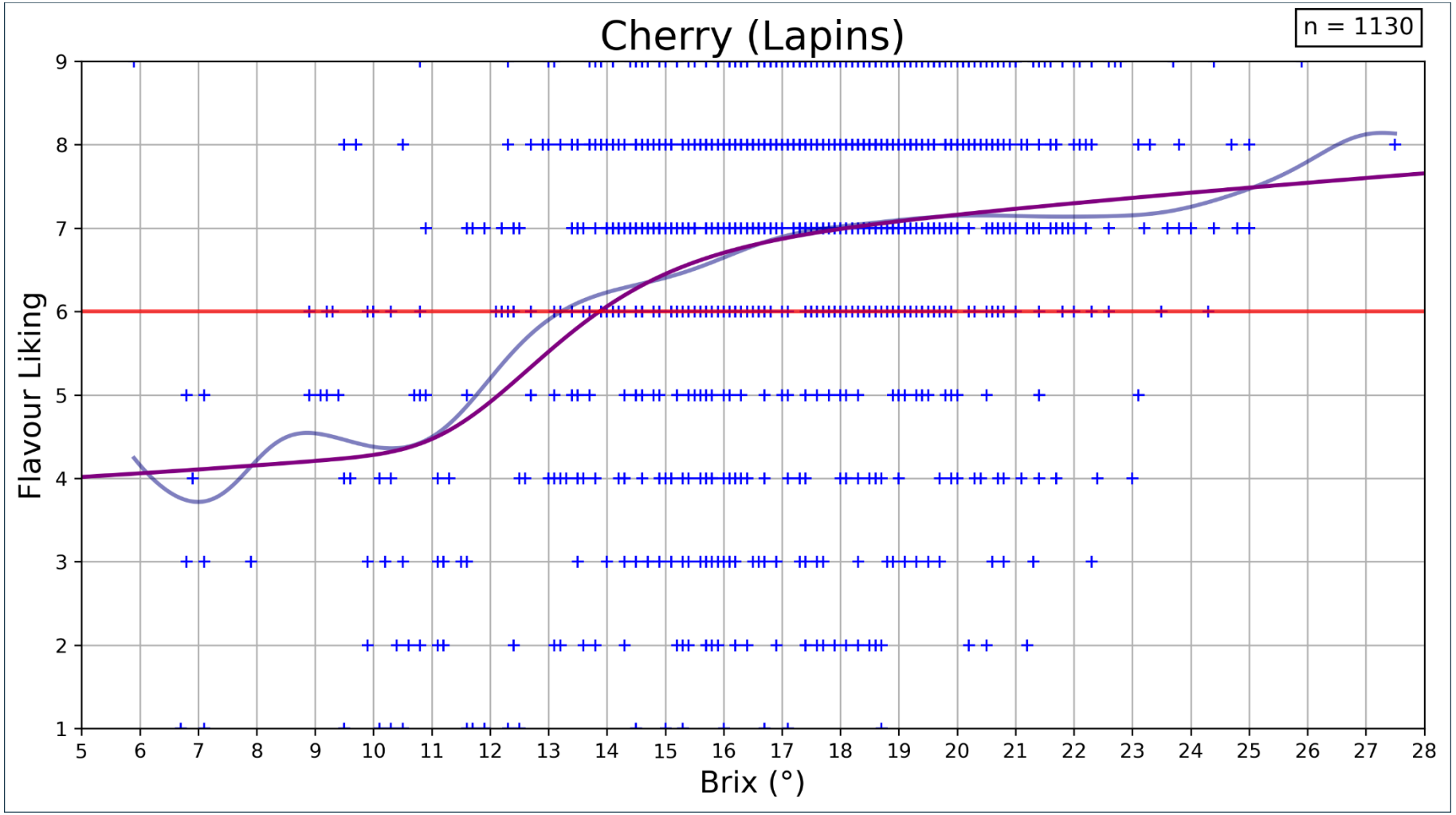
- What percentage of consumers do we want to have a positive eating experience?

60%	65%	70%	75%	80%	85%	90%

Cherry

Sensory Results

Cherry Liking increases with Brix



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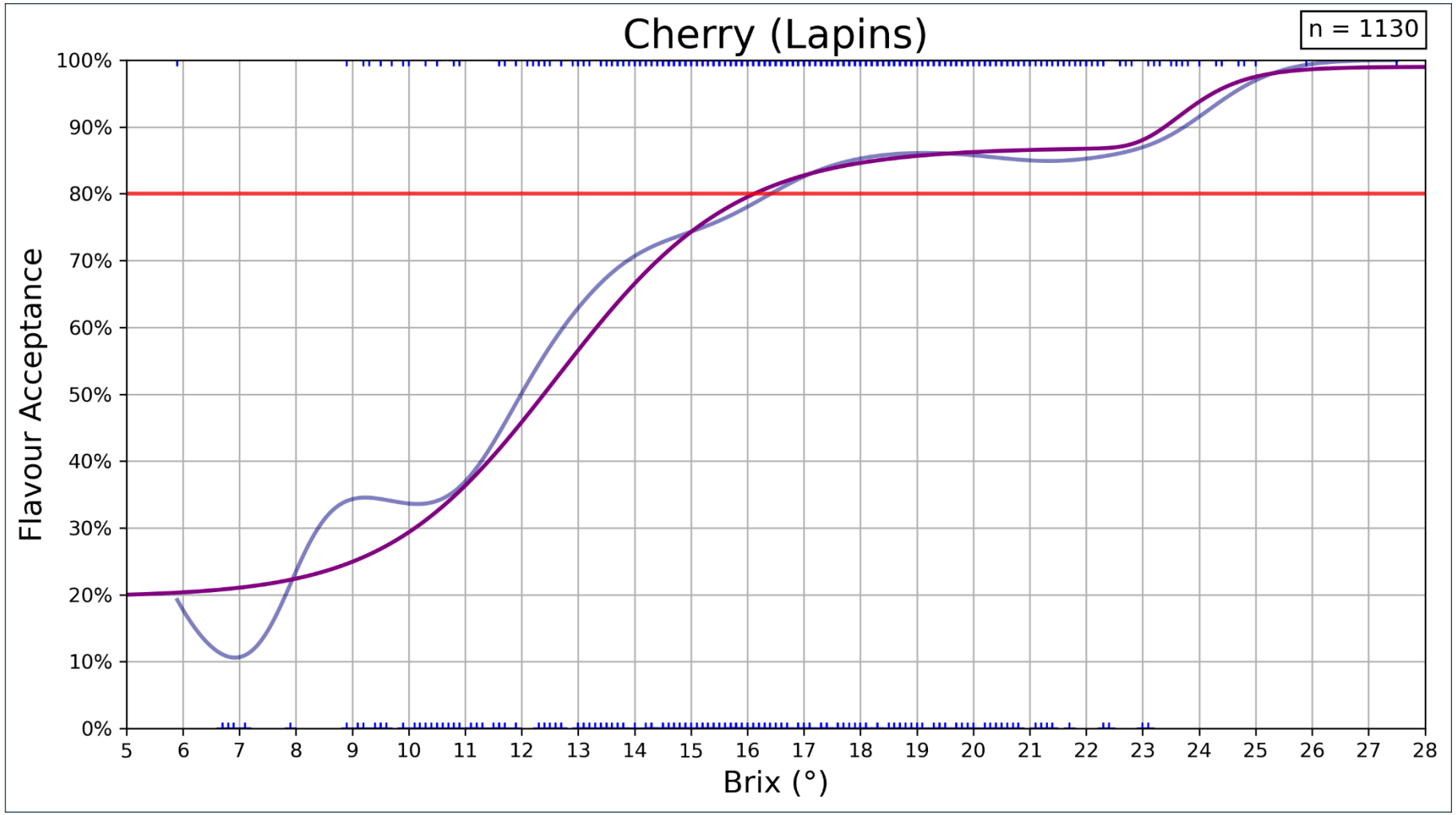
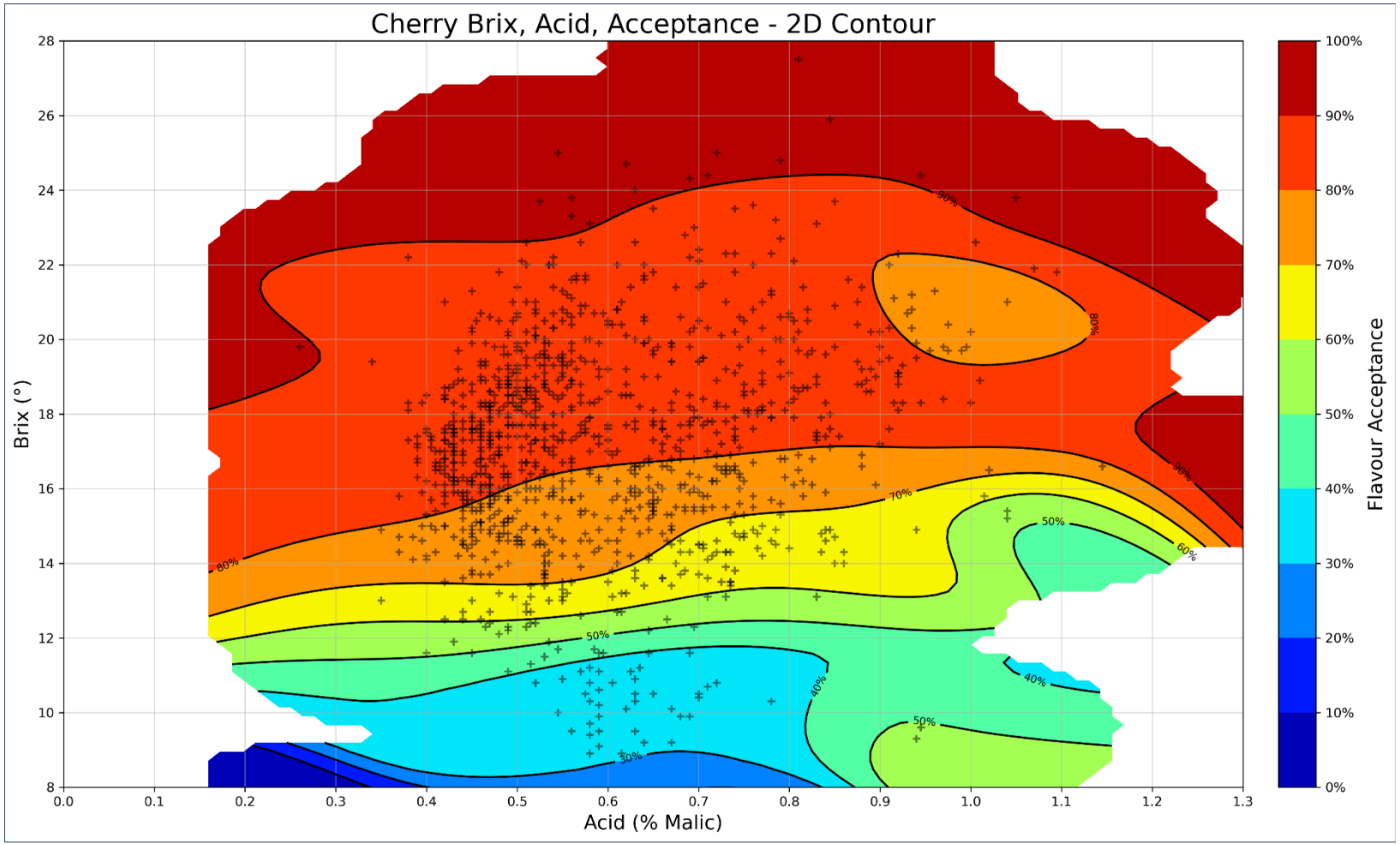
Cherry Acceptance increases with Brix



Acid slightly influences flavour acceptance



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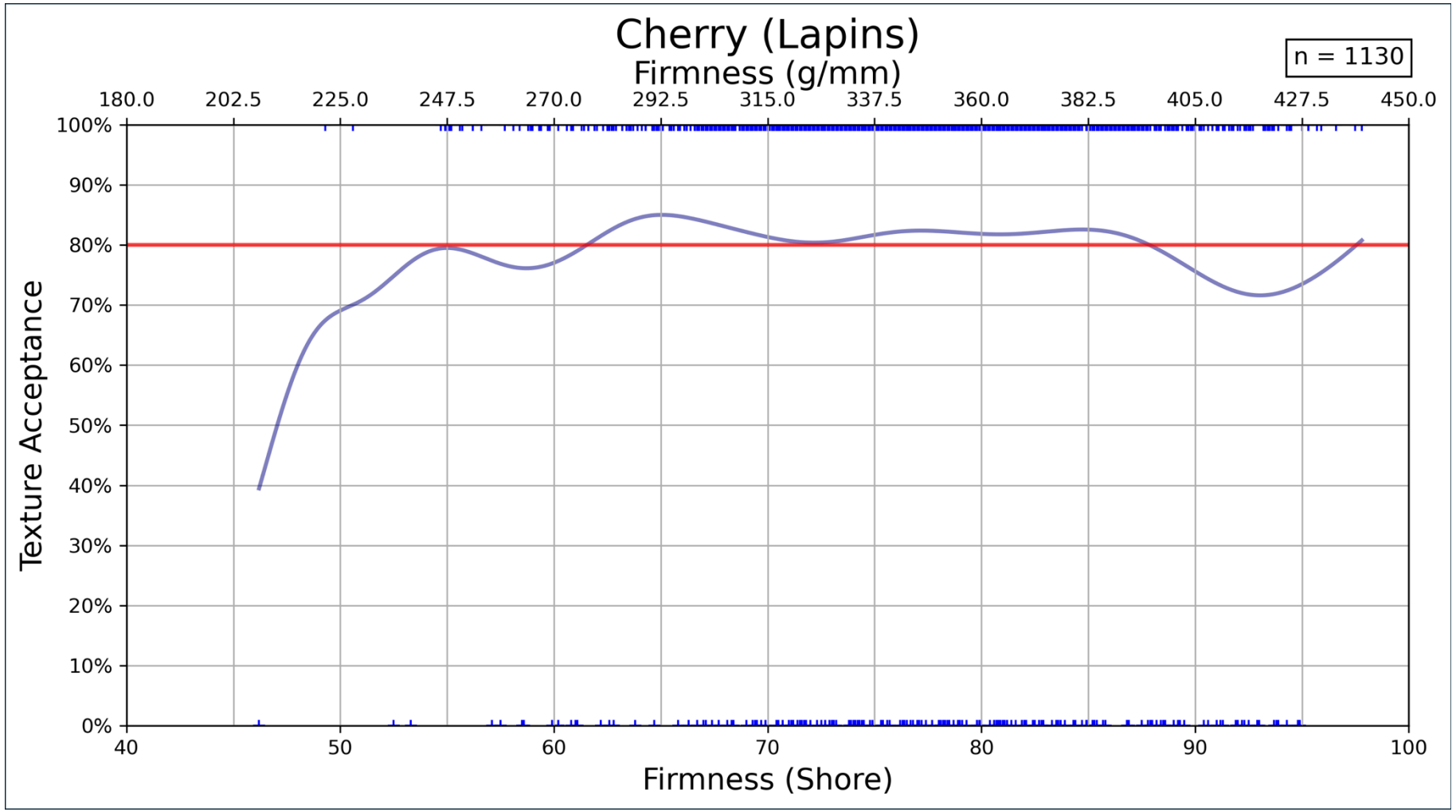
Cherry Texture Acceptance vs Firmness



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Maturity Standards

What we have learned so far

Maturity Measures?

- Brix is the most important maturity measure for consumer acceptability
- Acid is not necessary from a minimum standard perspective for Lapins
- Firmness has a lower limit
- Colour is important, darker is better

Cherry Maturity

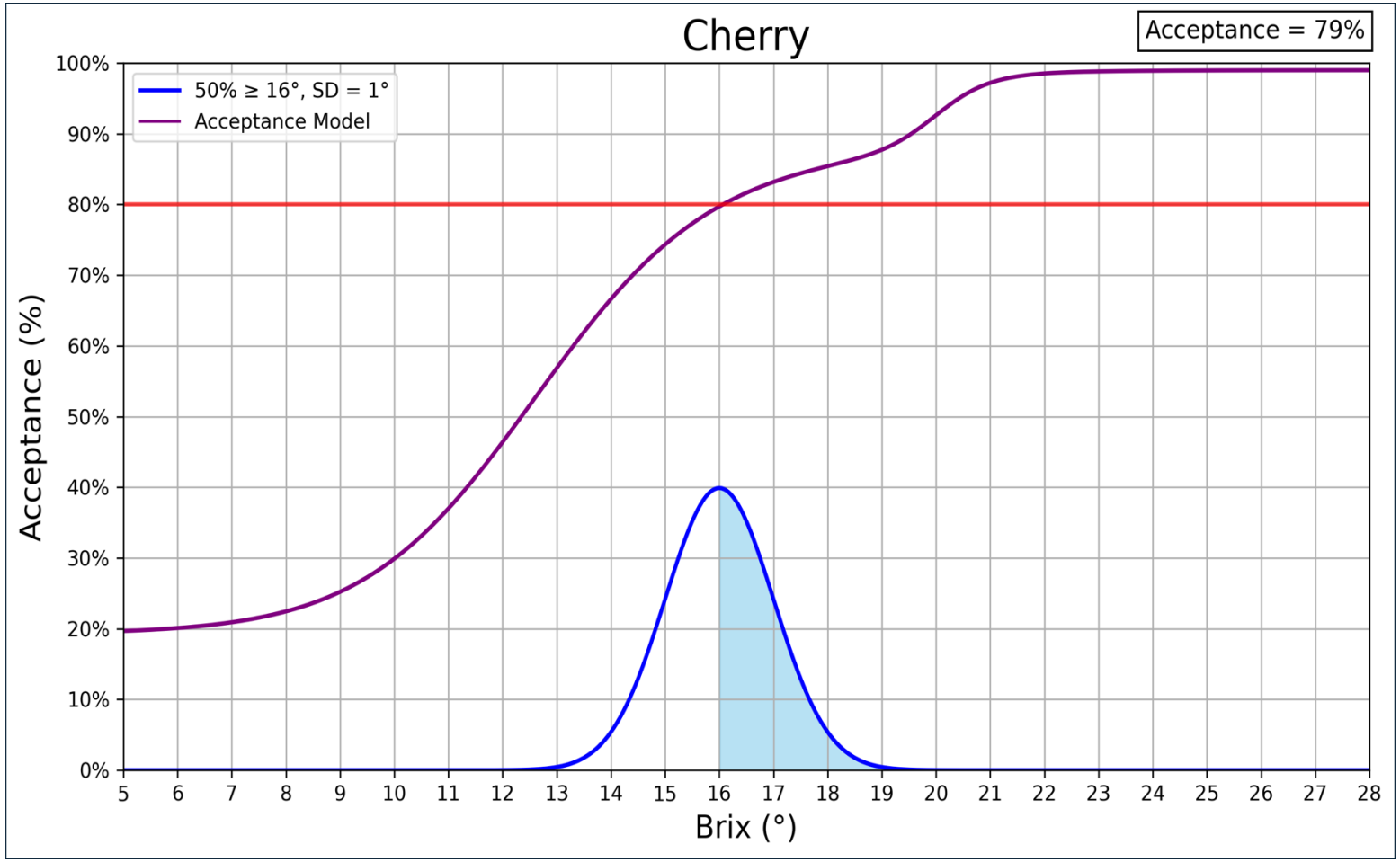
Brix ≥ 16° will achieve 80% consumer acceptability

Harvested cherries have variable Brix.

Brix variability is measured as Standard Deviation

The standard deviation of 200+ 10-fruit retail & wholesale cherry samples varied from <1 to >4

Acceptance for 50% ≥ 16˚, SD=1˚



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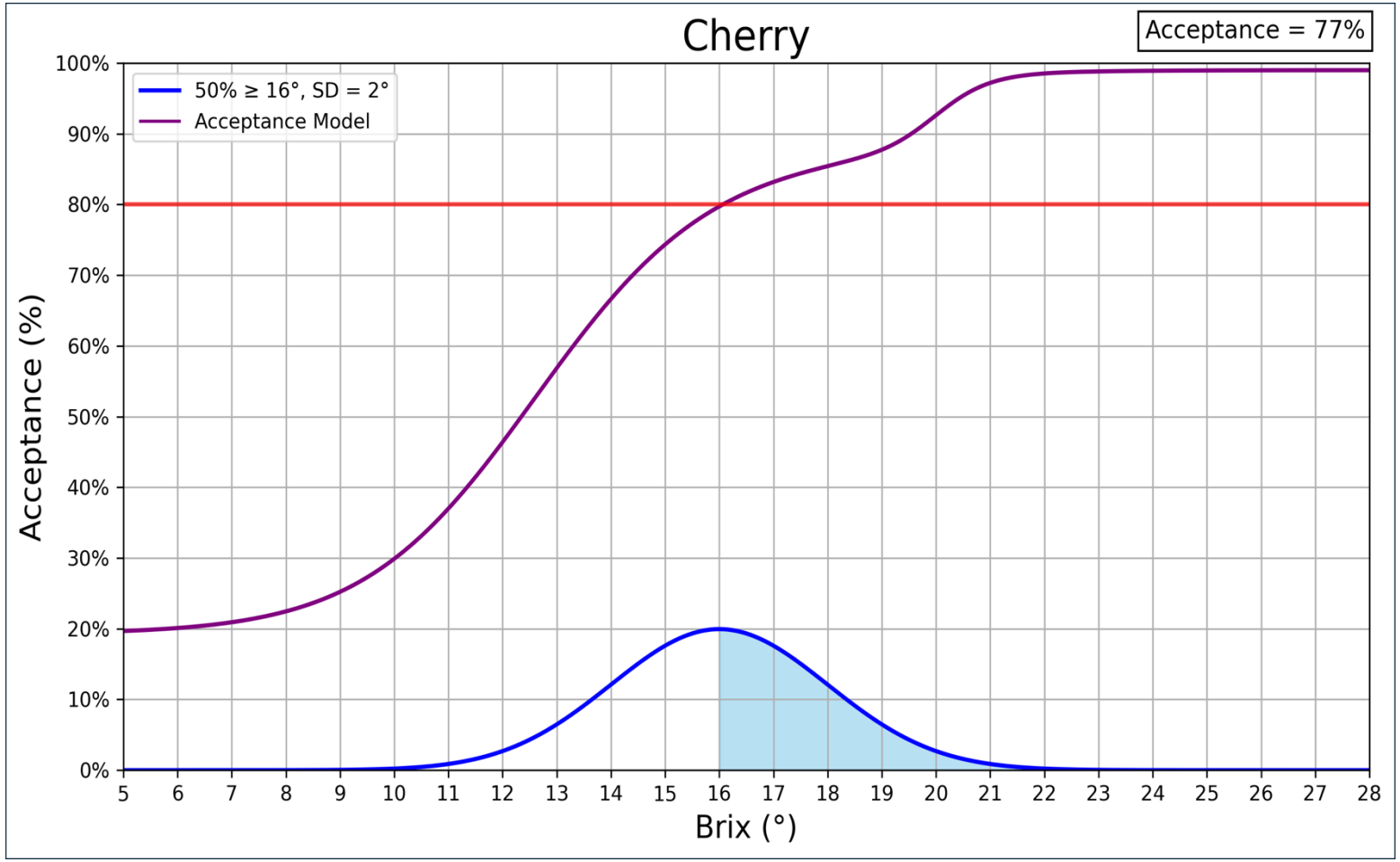
Acceptance for 50% ≥ 16˚, SD=2˚



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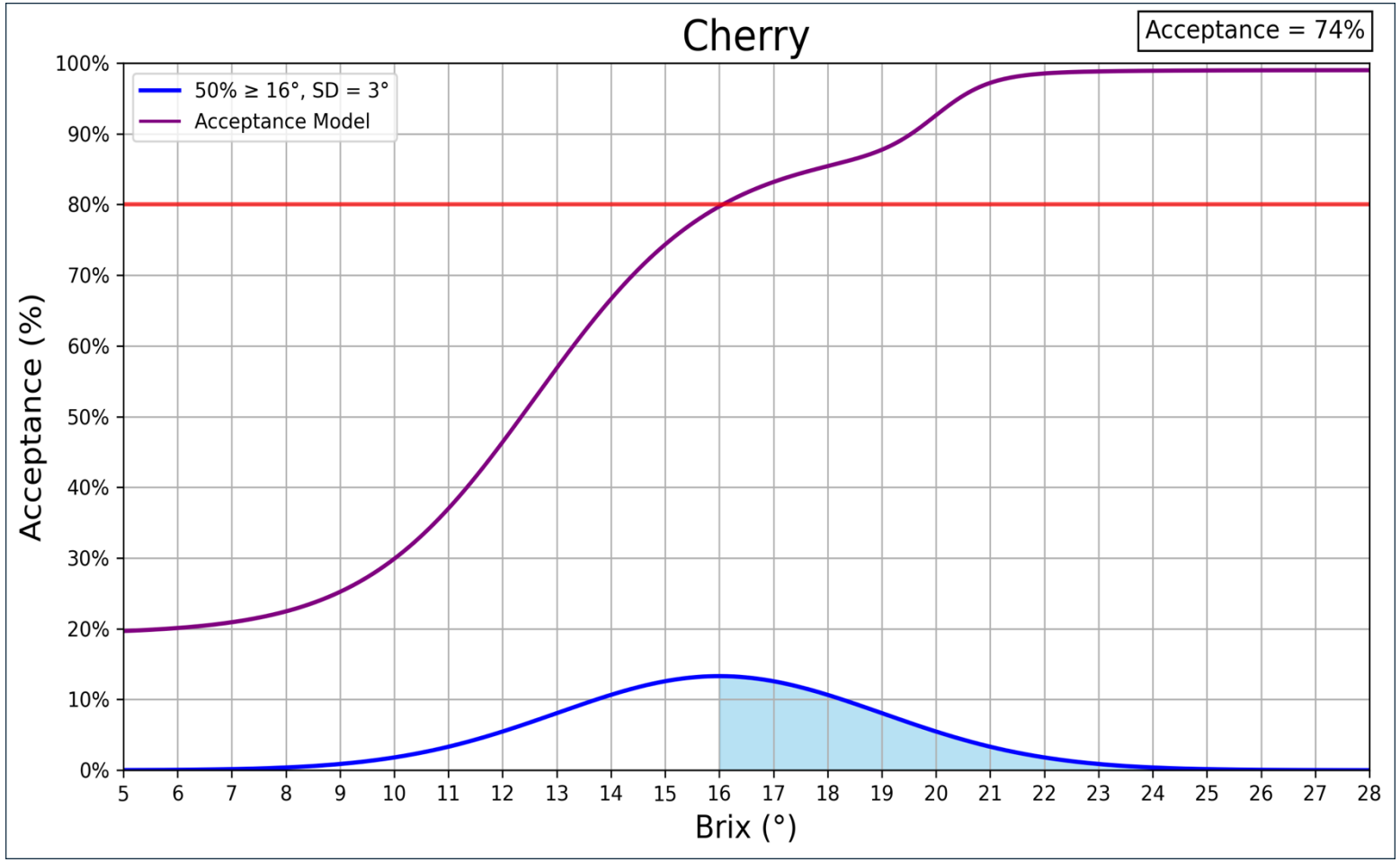
Acceptance for 50% ≥ 16˚, SD=3˚



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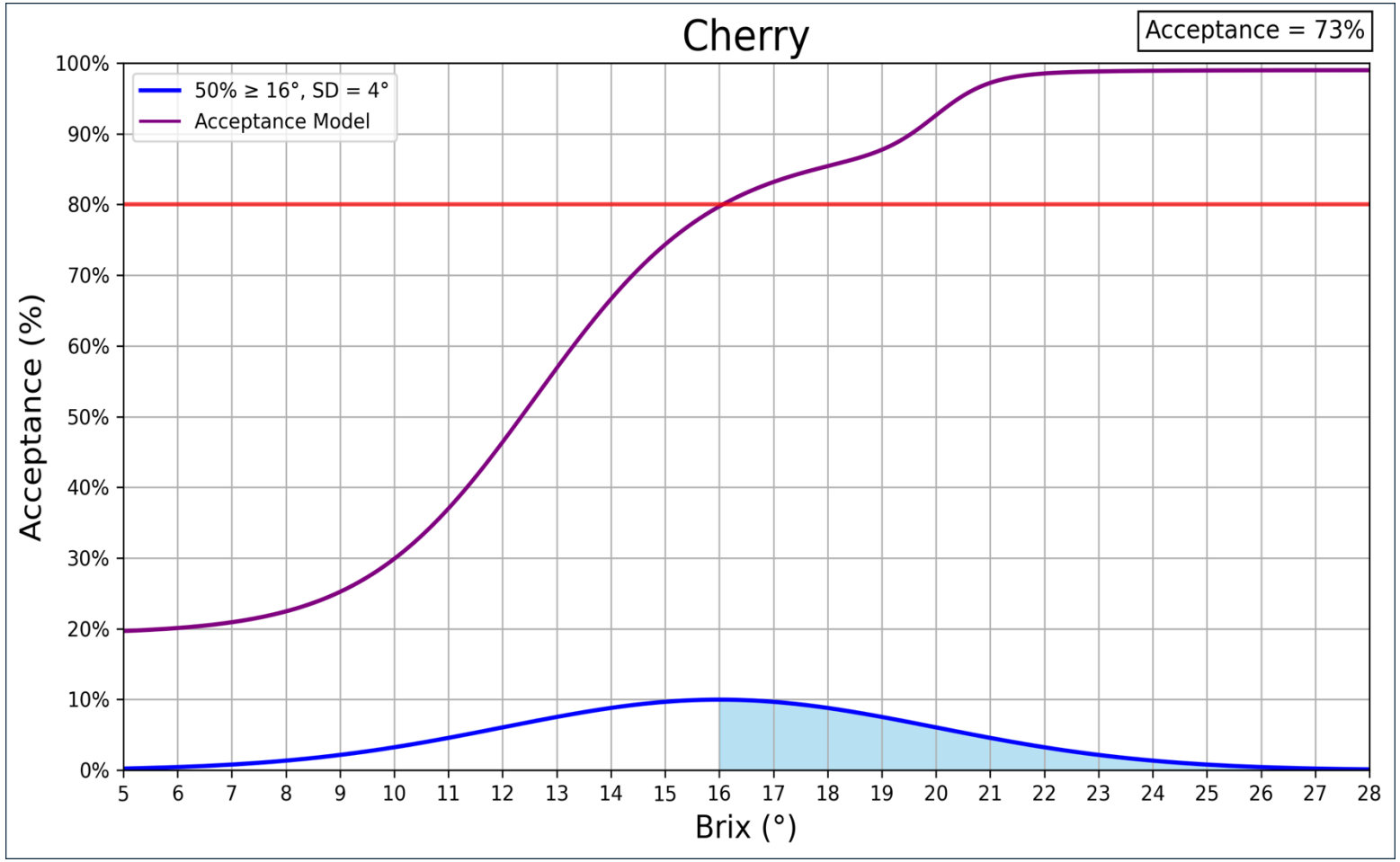
Acceptance for 50% ≥ 16˚, SD=4˚



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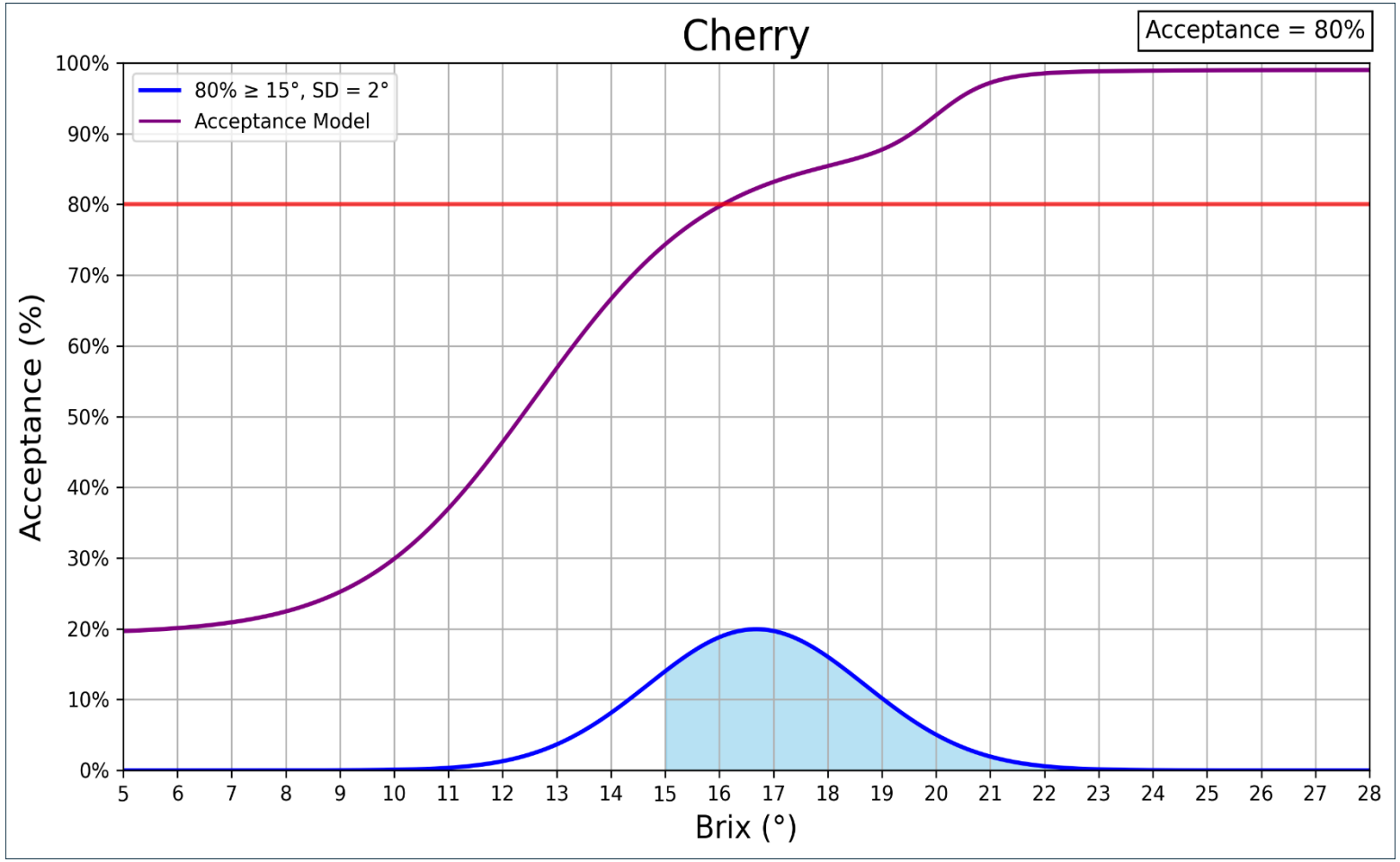
Acceptance for 80% ≥ 15˚, SD=2˚



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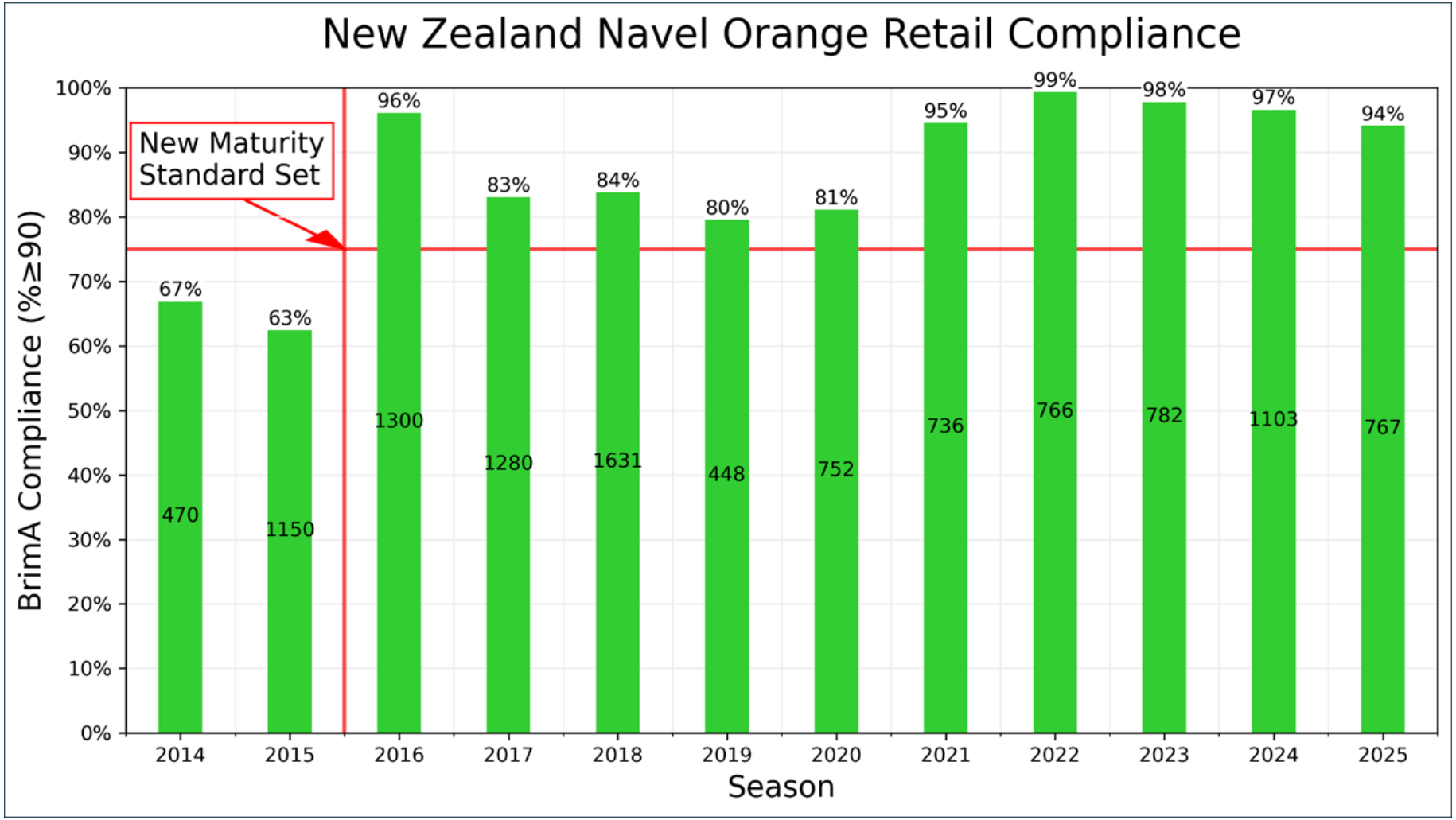
Where have we got to?

- Percentage of consumers having a positive eating experience = 80%
- Minimum Brix = 15˚
- Percentage above the minimum Brix = 80%
- Firmness ≥ 55 Shore or FirmTech 248 g/mm
- Acid – Not necessary for Lapins. May be needed for varieties like Kordia
- Colour – Darker is better
- Will not be finalised until we do more work on-farm to assist growers to meet the new standard

The results are long-term



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Thank you