Comparison of whole cane analysis of 34 families grown in Barbados, Belize and Jamaica using data from a Spectracane High Speed Analyser.

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ACP-SRP

Introduction

Breeding programmes for 5 countries

Wide range of environments

Parental choices

- individual countries

- or multiple environments

Methods

34 Families
50 Seedlings per family
Unreplicated

Sampling method

- **1 cane per seedling**
- **50 canes**
- **divided into 10 x 5 cane bundles**

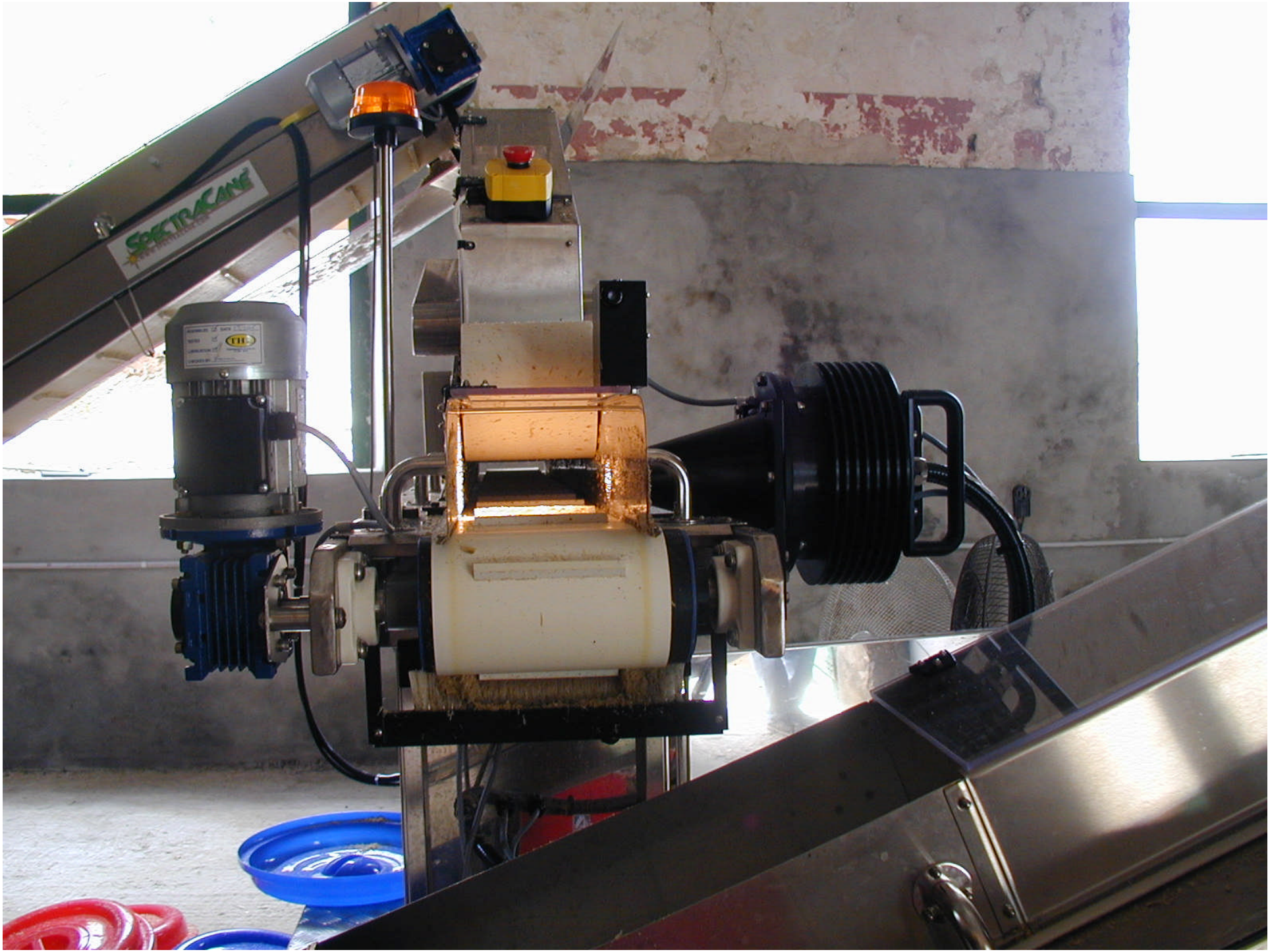
Cane samples analysed
Using Spectracane 400

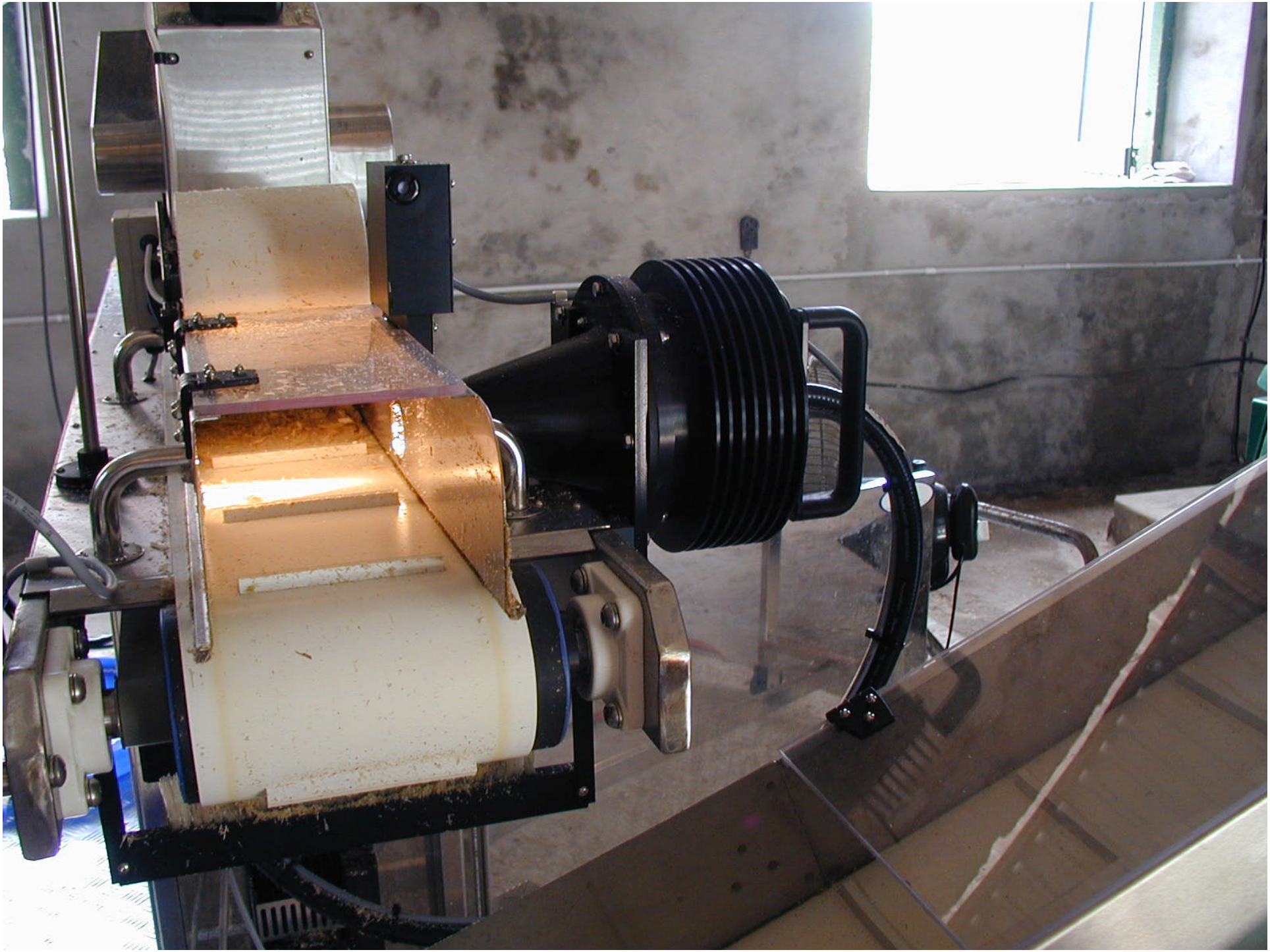
Automated NIR based analysis

Data generated

- **Brix in Juice**
- **Pol % in juice**
- **Fibre % cane (fresh weight)**




SPECTRACANE



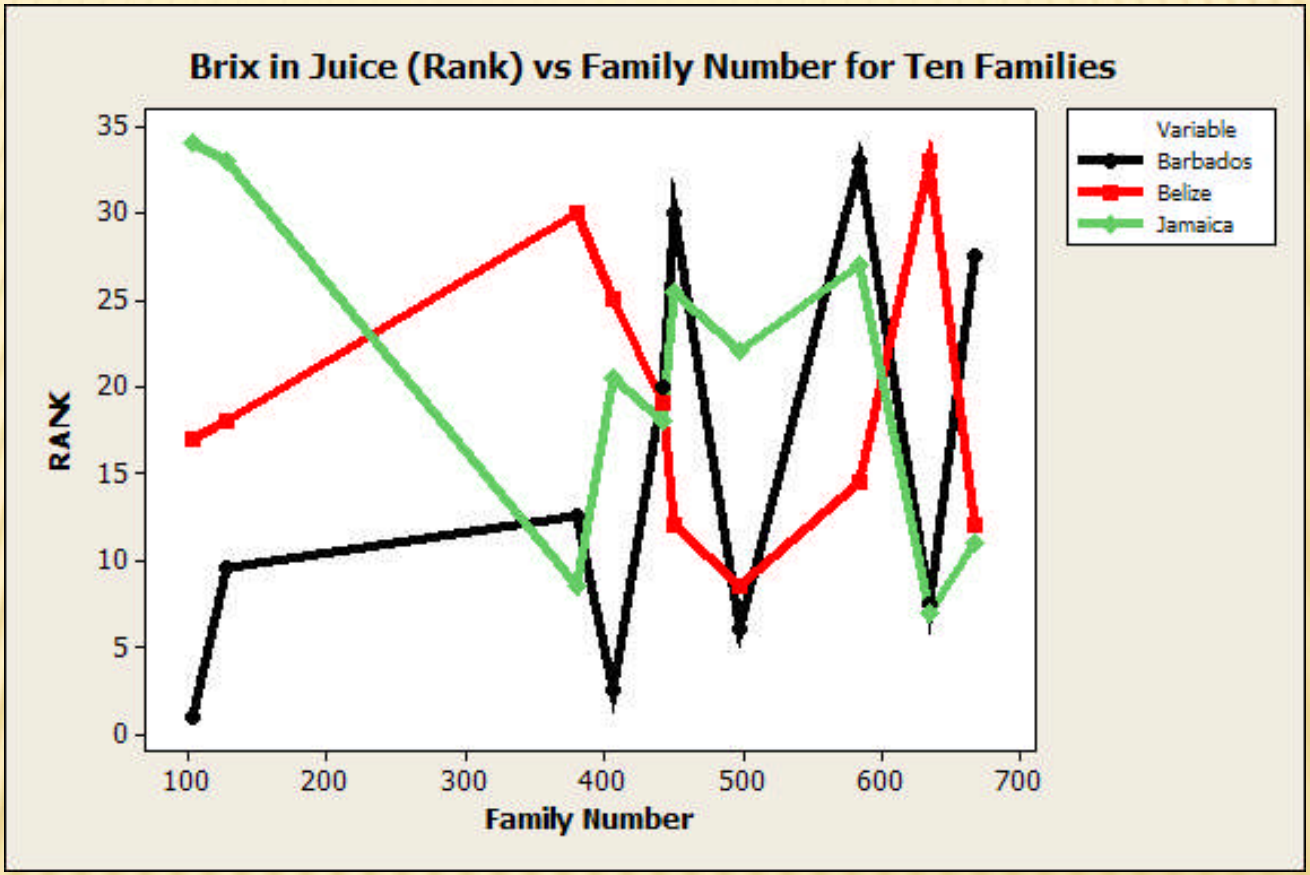

SPECTRACANE

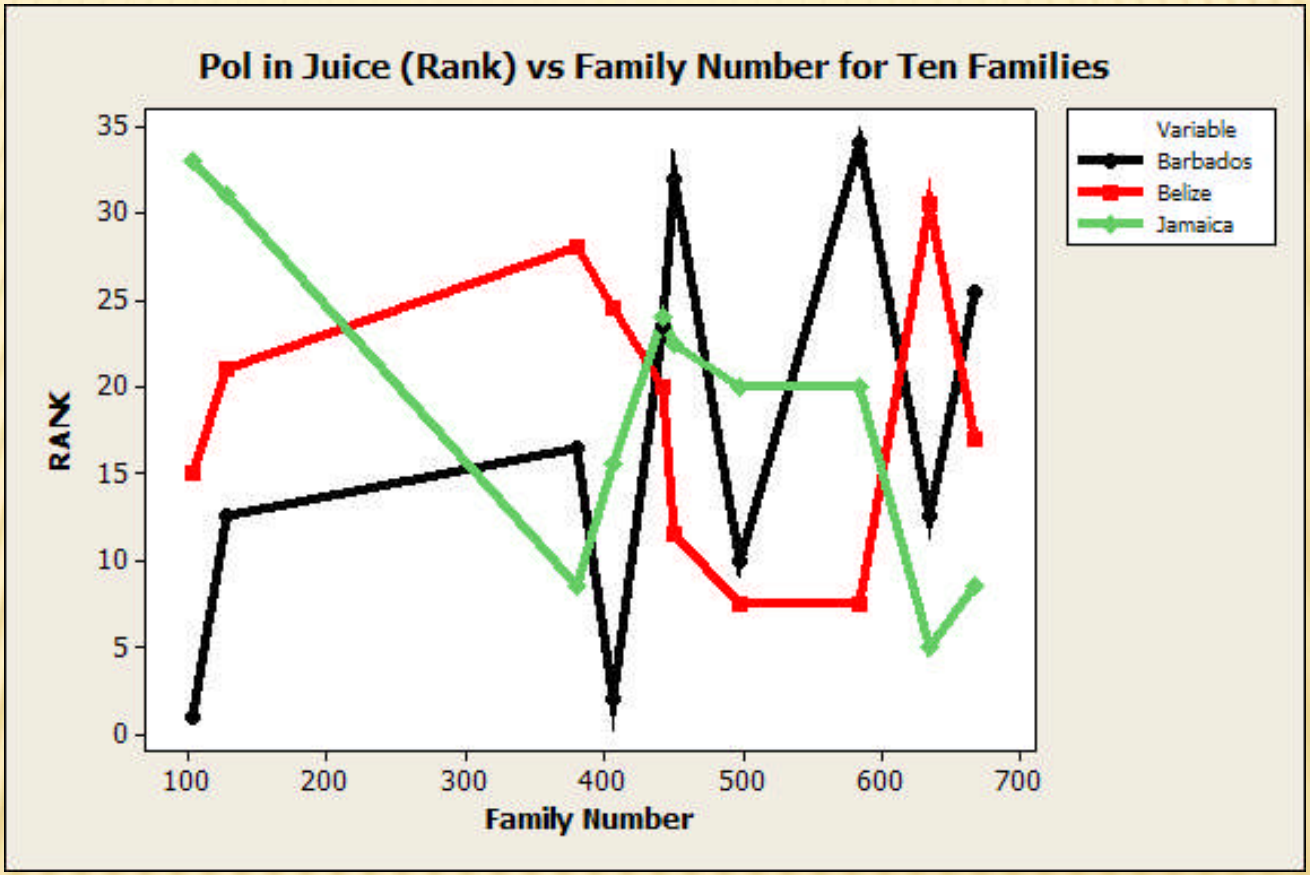
Results

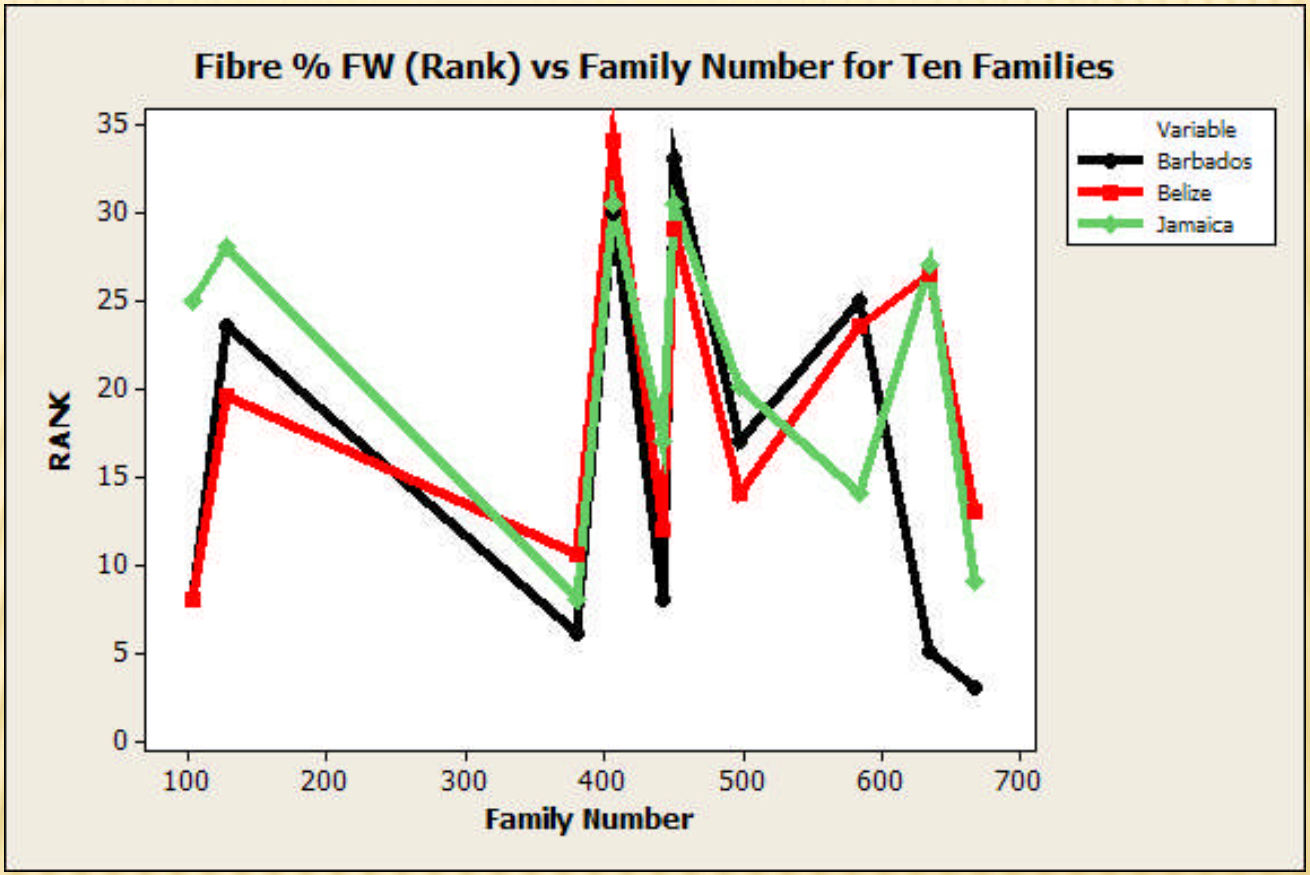
Variable	Country	Mean	Sd
Brix in Juice	Barbados	22.1	1.24
	Belize	16.6	1.15
	Jamaica	19.2	1.22
Pol in Juice	Barbados	15.9	0.91
	Belize	13.5	1.41
	Jamaica	14.2	1.35
Fibre % Cane	Barbados	18.1	1.15
	Belize	13.7	0.93
	Jamaica	12.6	0.88

Pearson Rank Correlation Coefficients

BRIX		
	BARBADOS	BELIZE
BELIZE	0.104 ns	
JAMAICA	0.238 ns	0.218ns
POL		
BELIZE	0.000 ns	
JAMAICA	0.070 ns	0.124ns
FIBRE		
BELIZE	0.373 *	
JAMAICA	0.38 *	0.688 ***


Brix in Juice (Rank) vs Family Number for Ten Families
RANK
35
30
25
20
15
10
5
0
100
200
300
400
500
600
700
Family Number
Variable
Barbados
Belize
Jamaica


Pol in Juice (Rank) vs Family Number for Ten Families
RANK
35
30
25
20
15
10
5
0
100
200
300
400
500
600
700
Family Number
Variable
Barbados
Belize
Jamaica


Fibre % FW (Rank) vs Family Number for Ten Families
RANK
35
30
25
20
15
10
5
0
100
200
300
400
500
600
700
Family Number
Variable
Barbados
Belize
Jamaica

Conclusions

Appear to be large family x country Interactions for juice quality

Fibre is a more stable character

Need more work to confirm this

Some of the interactions for Quality could be due to maturity differences

Next experiment should contain a standard variety to synchronise maturity across countries

Families should be replicated

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