QuickScan

Multiple Tests
Quantified & Tracked
Simultaneously

October 2010

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Welcome to QuickScan!

- The next level in the quantification and traceability of test strips for non-GMO and mycotoxin testing
- The latest in digital imaging technology with advanced mathematical processing
- A standard PC platform with a simple MS-Windows interface
- Rapid, objective, quantitative results for a variety of EnviroLogix test kits

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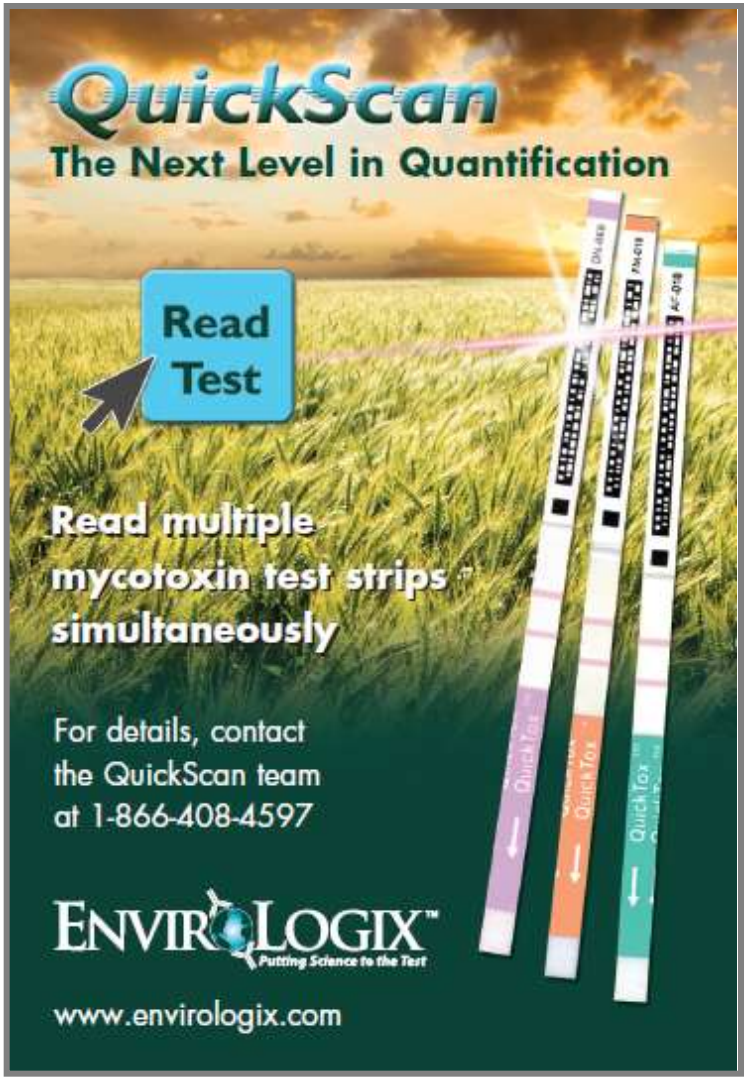
Key Features of QuickScan

- *Speed*
  - Read QuickComb, QuickTox or QuickStix Kits in seconds
- *Flexibility*
  - Process single strips or multiple-strip combs for GMOs or mycotoxins in one system – at the same time!
- *Accuracy and Precision*
  - Image processing and embedded barcodes ensure accurate, consistent results
- *Traceability*
  - PC connectivity allows instantaneous data storage for e-mailing, printing or analysis at any time



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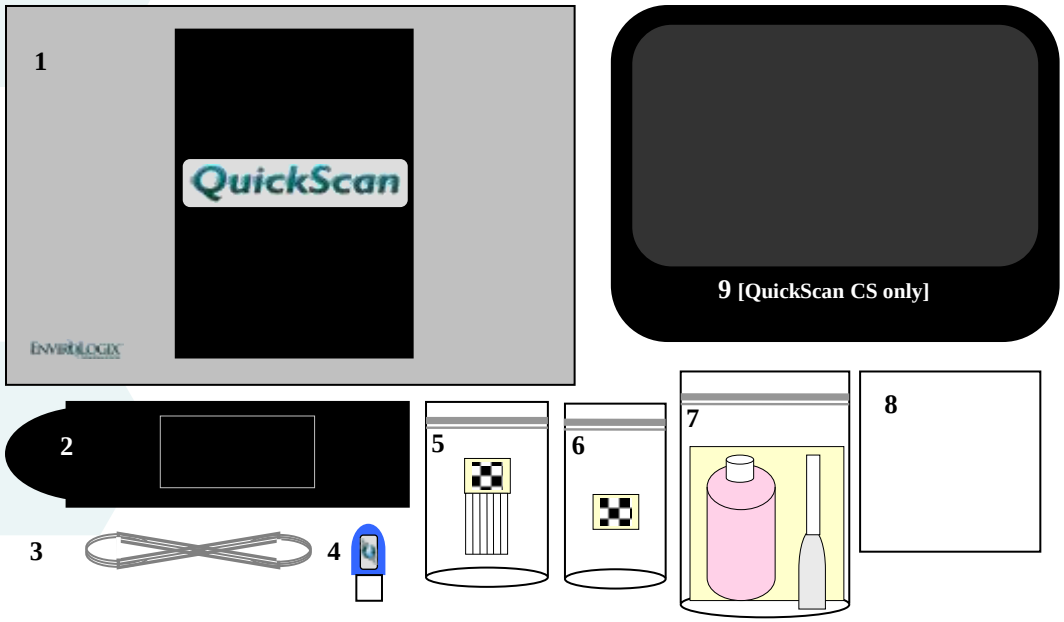
Contents of a QuickScan Package



1. QuickScan imager / scanner
2. Strip / comb carrier with compression plate
3. Scanner-to-PC USB connect cable
4. USB software key
5. QuickScan Check Comb
6. QuickScan Check Card
7. QuickScan Cleaning Kit
8. White card for cleaning and servicing
9. Touch screen PC (QuickScan CS, see PC packaging for details of use)

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Start-Up / The Main Menu …

The Main Menu appears automatically upon opening the software and is the starting point for all QuickScan operations.

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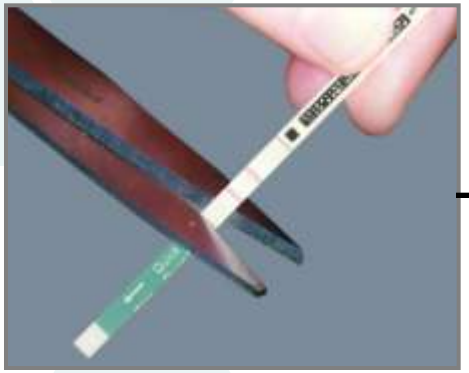
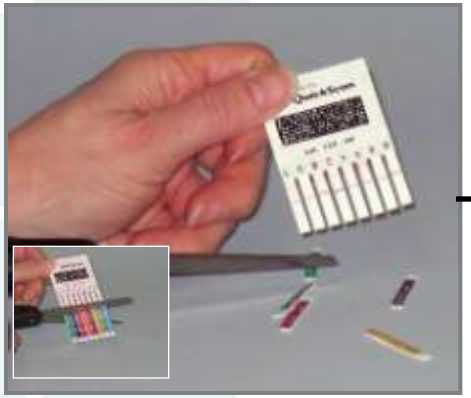
Preparing Strips for QuickScan

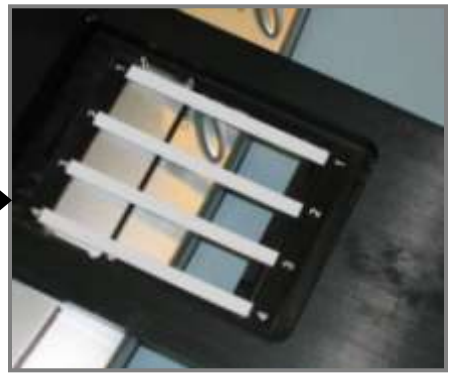
Upon reacting the strips, per the instructions …

1. Cut off tailpad(s)



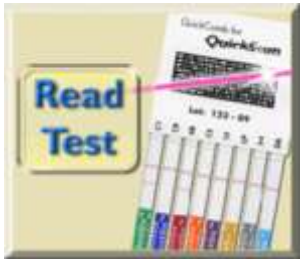


2. Insert strip(s) into carrier



3. Slide in carrier

4. Touch Read Test



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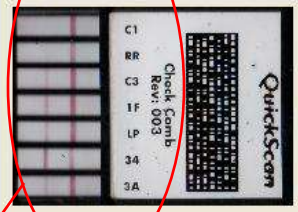
Results Screen for GMO Corn Comb

QuickScan Results Table 1 Test Kit

	Sample ID	Supplier	Comment 1	Comment 2	Action	Test Kit	Analyte	Result(%)	TL CL	Lot
1	Truck ABC	Farmer Bob	Corn	Very High	Accept	AQ-036 TC 13-8	C1: Cry1Ab	< LOQ		3
2							RR: CP4 EPSPS	0.94		
3							C3: Cry3Bb	1.5		
4							1F: Cry1F	2.2		
5							LP: PAT/pat	1.8		
6							34: Cry34	3.7		
7							3A: mCry3A	1.5		
8						GMO Sum =		11.6		

Action drop-down tracks loads accepted or rejected

Results presented as %GMO per trait tested. Sum is reported if that option is chosen



Save Report | Print Report | Help | Close

Calculation of test results is determined by measuring test line intensities of each strip, followed by regression analysis. Regression is performed with lot-specific standard curves embedded within the barcodes on each strip, greatly increasing precision.

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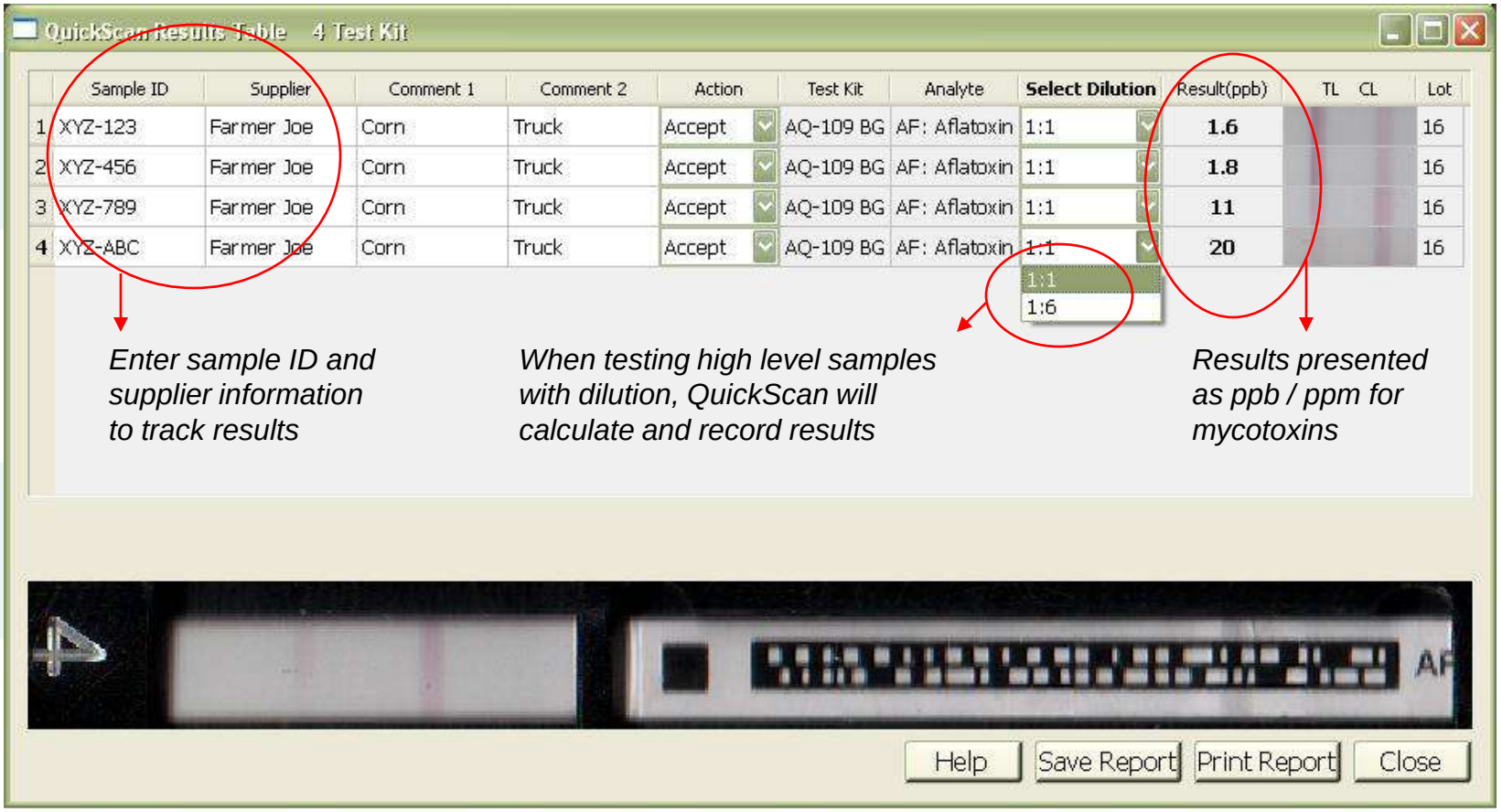
Results Screen for Aflatoxin Strips



Enter sample ID and supplier information to track results

When testing high level samples with dilution, QuickScan will calculate and record results

Results presented as ppb / ppm for mycotoxins

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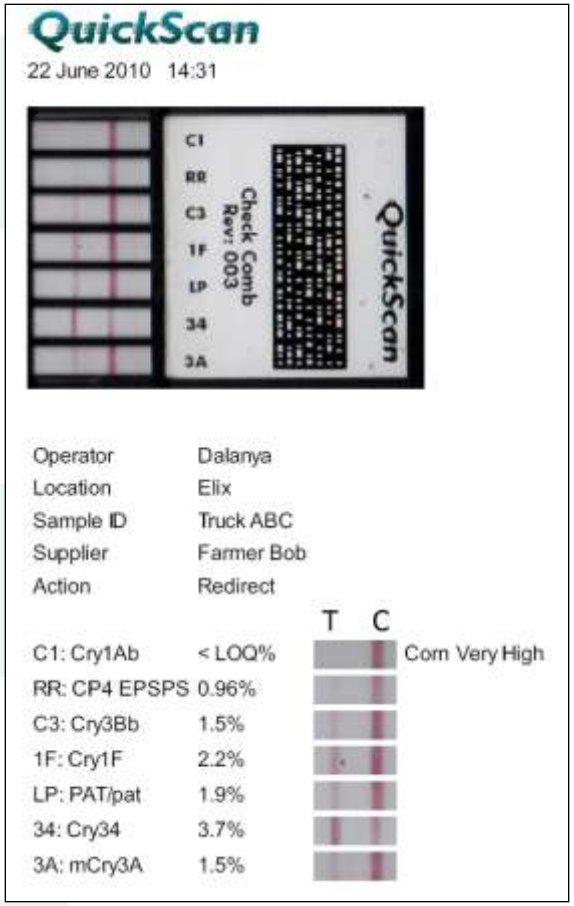
QuickScan Reporting



QuickScan

22 June 2010 14:31

		T	C	
Operator	Dalanya			
Location	Elix			
Sample ID	Truck ABC			
Supplier	Farmer Bob			
Action	Redirect			
C1: Cry1Ab	< LOQ%			Corn Very High
RR: CP4 EPSPS	0.96%			
C3: Cry3Bb	1.5%			
1F: Cry1F	2.2%			
LP: PAT/pat	1.9%			
34: Cry34	3.7%			
3A: mCry3A	1.5%			

Upon saving test results, QuickScan creates a .pdf file in a Reports folder that can be opened, emailed or printed at any time. Each report consumes 130 KB of hard disk storage. (1GB of storage holds 7,700 reports!)

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Tracking Results – *the DataLog File*

Date and Time	Report	Operator	Location	Test Kit	Action	Supplier	Sample ID	Analyte	Result	Unit	Lot	Error	Comment 1	Comment 2
22-Jun-2010 2.33.16	Saved	Dalanya	Elix	AQ-036 TC 13-8	Redirect	Farmer Bob	Truck ABC	C1: Cry1Ab	< LOQ	%	3		Corn	Very High
22-Jun-2010 2.33.16	Saved	Dalanya	Elix	AQ-036 TC 13-8	Redirect	Farmer Bob	Truck ABC	RR: CP4 EPSPS	0.96	%	3			
22-Jun-2010 2.33.16	Saved	Dalanya	Elix	AQ-036 TC 13-8	Redirect	Farmer Bob	Truck ABC	C3: Cry3Bb	1.5	%	3			
22-Jun-2010 2.33.16	Saved	Dalanya	Elix	AQ-036 TC 13-8	Redirect	Farmer Bob	Truck ABC	1F: Cry1F	2.2	%	3			
22-Jun-2010 2.33.16	Saved	Dalanya	Elix	AQ-036 TC 13-8	Redirect	Farmer Bob	Truck ABC	LP: PAT/pat	1.9	%	3			
22-Jun-2010 2.33.16	Saved	Dalanya	Elix	AQ-036 TC 13-8	Redirect	Farmer Bob	Truck ABC	34: Cry34	3.7	%	3			
22-Jun-2010 2.33.16	Saved	Dalanya	Elix	AQ-036 TC 13-8	Redirect	Farmer Bob	Truck ABC	3A: mCry3A	1.5	%	3			

- *Test results automatically added*
- *Stored in QuickScan Log folder*
- *Shortcut on the Desktop*
- *Sort, filter, analyze results at any time*
  - *Find your "best" suppliers*
  - *Identify trends in the supply chain*
  - *Improve reporting practices*

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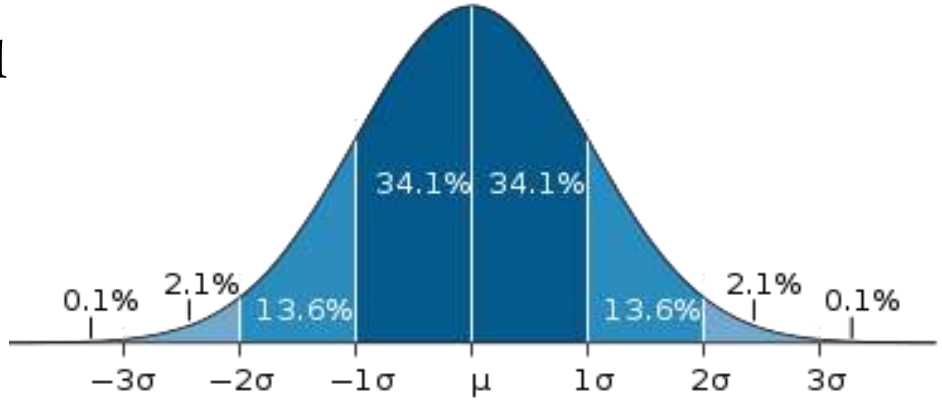
Accuracy and Precision of Results

- QuickTox test kits meet GIPSA criteria for quantification (no such standard for GMOs)
- Expected values (i.e. recovery) fall within specified ranges
- Variability of results (measured as CV%) will be less than 20%
- Thus, two-thirds of results will fall within 1 standard deviation of a mean value; 95% of results will fall within 2 standard deviations of a mean value



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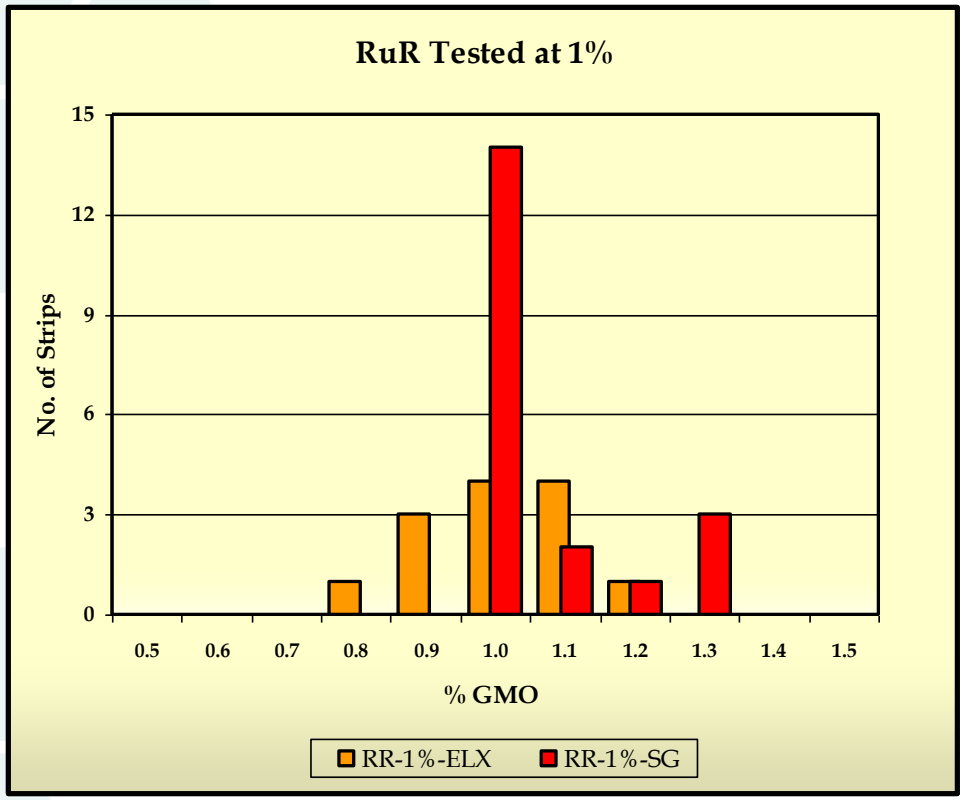
GMO Example: RoundupReady Corn at 1%



- At two locations, numerous strips were run and quantified on known samples of RuR technology in corn
- Expected results were to fall between 0.6% and 1.4% @ 95% confidence 2 st. devs)
- Actual results fell between 0.8% and 1.3% with a CV of 11%
- All samples read within the 95% confidence interval

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Caveats to Quantification

- Accuracy
  - Depends on the grain tested
  - We use average expressors for GMOs
  - But stocks in the field may vary

- Precision
  - Variability associated with all quantitative tests
  - Don't let people tell you otherwise!
  - HPLC, PCR, ELISA all hold variability

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Caveats to Quantification cont'd

- Sound sampling scheme is critical
  - Largest source of error
  - Our Tech Support Team can help
- Follow the Product Insert!
  - Grinding, extracting, pipetting, reading the strips wet
- QuickScan maintenance
  - Keep the scanning plate clean
  - Don't write on the barcodes
  - Recalibrate if you disconnect the USB cable
  - Watch for software upgrades

Summary

- QuickScan is the next level in quantification and traceability of test strips
- The testing system is easy to use, fast and flexible
- QuickScan is accurate and precise – but be sure to sample well and follow the instructions!
- Our Tech Support Team is ready to help

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Questions or Comments?

Please contact Simon Varney

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