Development of Version 4.0 of the ILSI® Crop Composition Database

International Life Sciences Institute
International Food Biotechnology Committee

BASF Plant Science
Bayer CropScience
Dow AgroSciences
Monsanto
Pioneer/DuPont
Syngenta

SkyDev Technologies
(Software development)

Dr. Wayne Parrott, UGA
(Academic consultant)

ILSI® and IFBiC – Brief Summary

International nonprofit foundation: **www.ilsi.org**

Global science network: **Academia, govt, industry, WHO, FAO**

Goal: **Scientific solns to global health issues**

Focus areas : **Obesity, biotech-derived foods, functional foods, risk assessment**

Support: **Govt funding, endowment, charitable & corporate foundations**

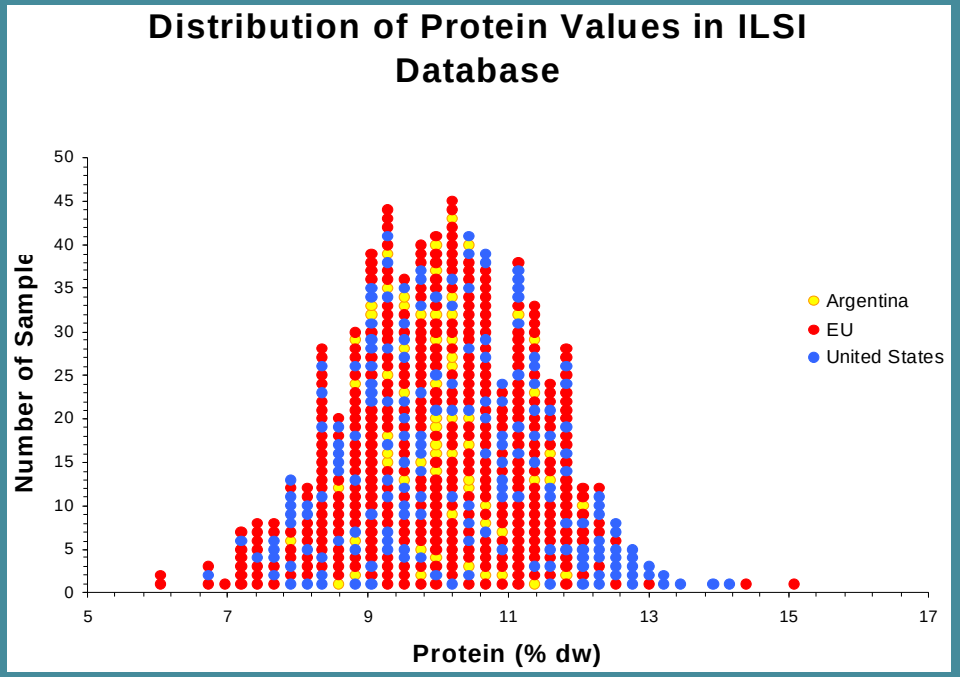
Food Safety Assessments

Substantial equivalence, GRAS & HOS

Compare to conventional crops

Companies accumulating high-quality comp data

Need accessible curated data sources



ILSI® Crop Composition Database

www.cropcomposition.org

Conventional crops: corn, soybean, cotton (forage, grain/seed)

Metabolites: nutrients, anti-nutrients, other metabolites

Data: 114 analytes, > 115K data points

Years: 1995 – 2004

Sites: Argentina, Australia, Brazil, Bulgaria, Canada, Chile, France, Germany, Hungary, Italy, Philippines, Spain, United States

What's New in Version 4.0?

Software & Hardware:

Java™

Oracle Database 11g SE1

Dell Quad-Core200 Server

Enhancements:

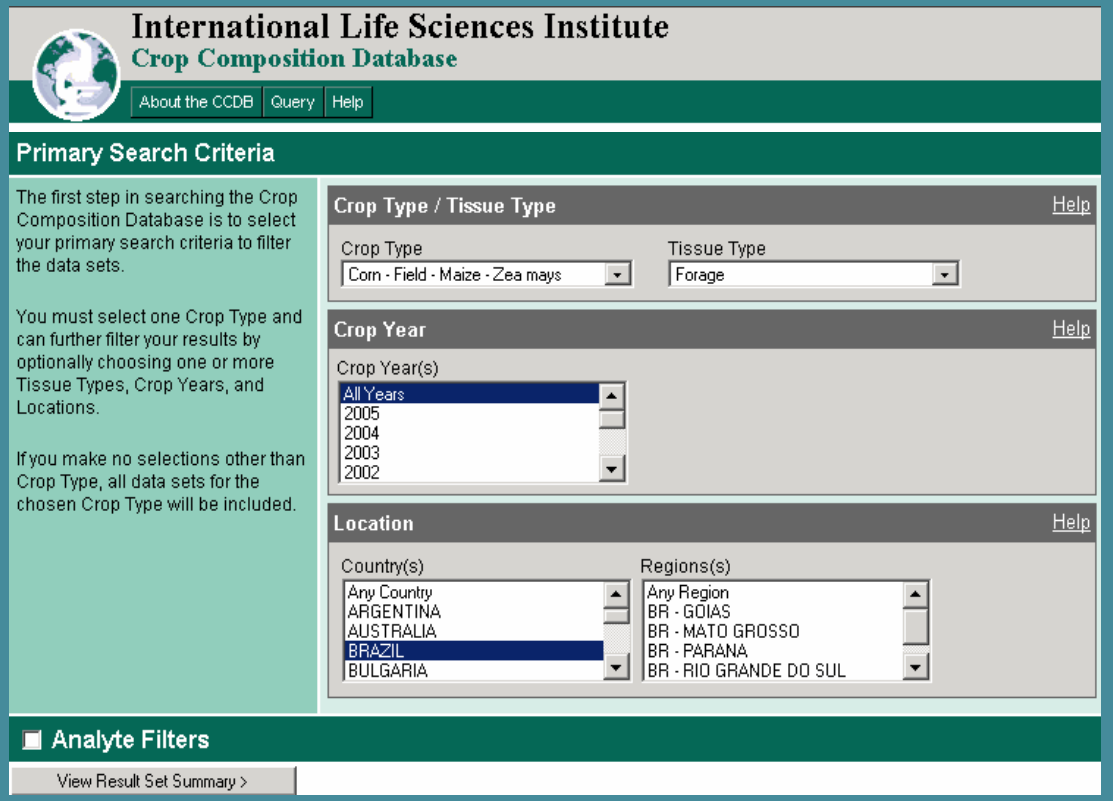
Intuitive GUI

Speed

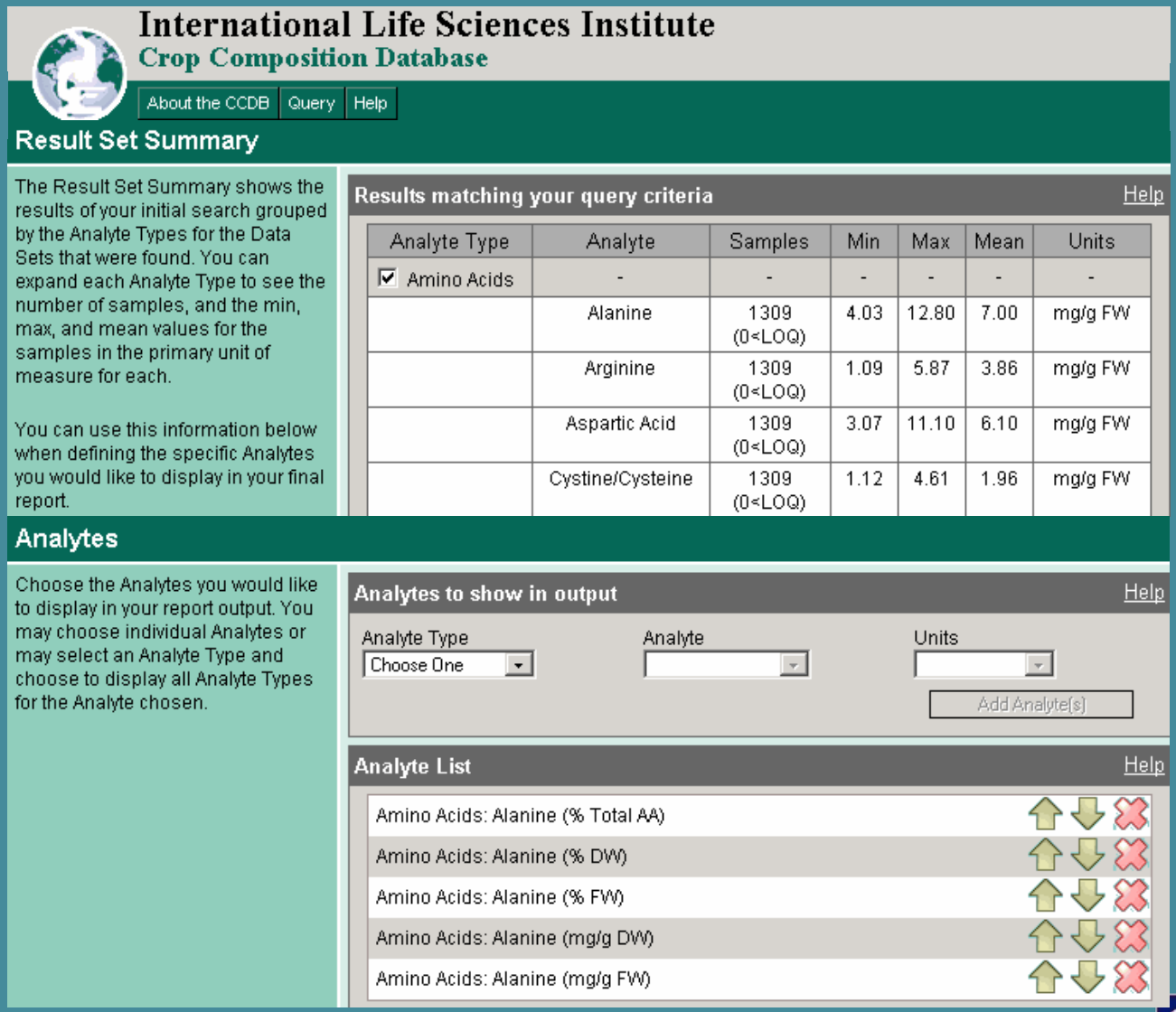
Scalability

Security

Multiple output formats (analytes, units, report type)



Database Output



International Life Sciences Institute
Crop Composition Database

About the CCDB | Query | Help

Result Set Summary

The Result Set Summary shows the results of your initial search grouped by the Analyte Types for the Data Sets that were found. You can expand each Analyte Type to see the number of samples, and the min, max, and mean values for the samples in the primary unit of measure for each.

You can use this information below when defining the specific Analytes you would like to display in your final report.

Results matching your query criteria Help

Analyte Type	Analyte	Samples	Min	Max	Mean	Units
☑ Amino Acids	-	-	-	-	-	-
	Alanine	1309 (0<LOQ)	4.03	12.80	7.00	mg/g FW
	Arginine	1309 (0<LOQ)	1.09	5.87	3.86	mg/g FW
	Aspartic Acid	1309 (0<LOQ)	3.07	11.10	6.10	mg/g FW
	Cystine/Cysteine	1309 (0<LOQ)	1.12	4.61	1.96	mg/g FW

Analytes

Choose the Analytes you would like to display in your report output. You may choose individual Analytes or may select an Analyte Type and choose to display all Analyte Types for the Analyte chosen.

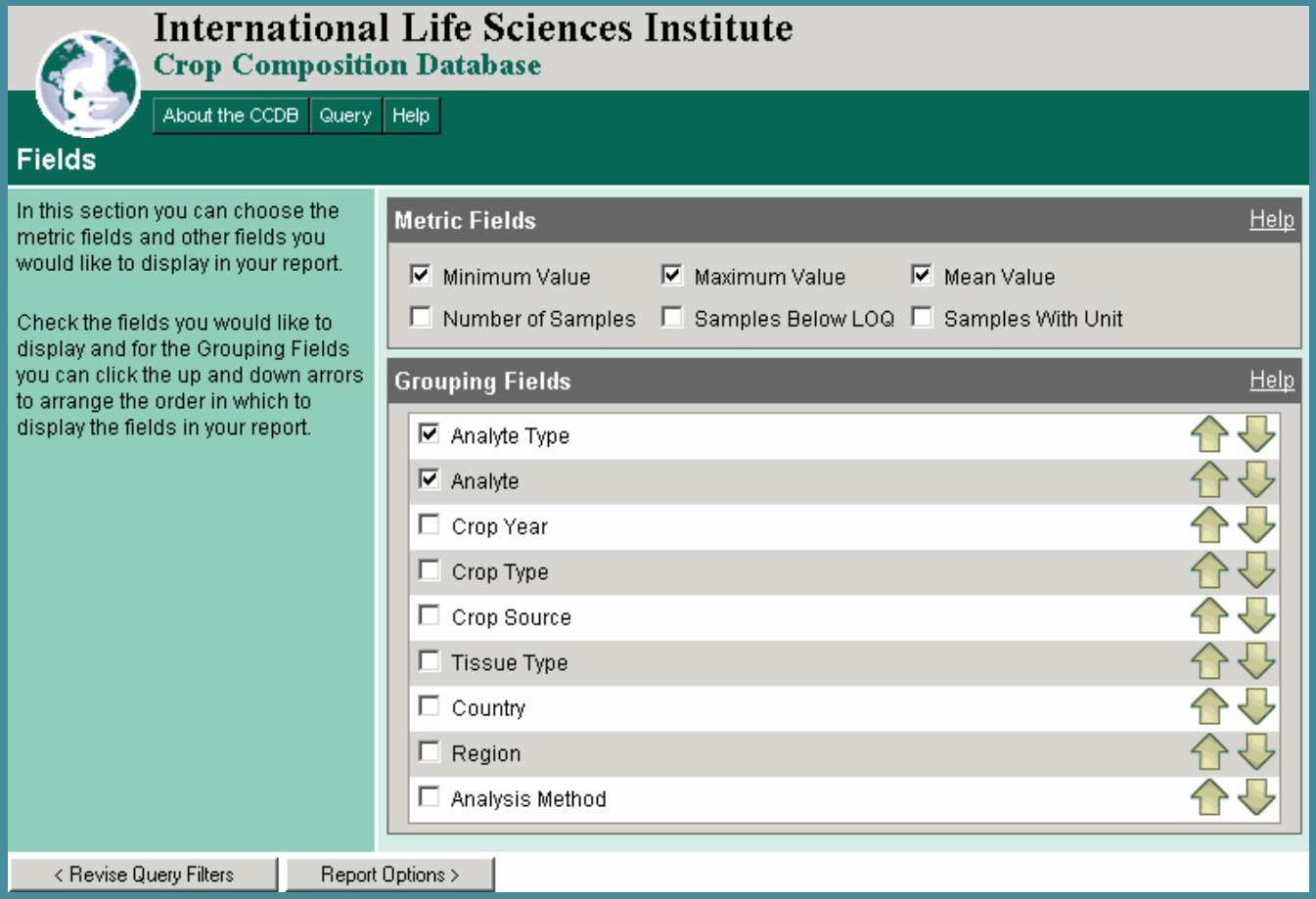
Analytes to show in output Help

Analyte Type: Choose One | Analyte | Units | Add Analyte(s)

Analyte List Help

- Amino Acids: Alanine (% Total AA)
- Amino Acids: Alanine (% DW)
- Amino Acids: Alanine (% FW)
- Amino Acids: Alanine (mg/g DW)
- Amino Acids: Alanine (mg/g FW)

Report Output Options



What's New in Version 4.0?

Software & Hardware:

Java™

Oracle Database 11g SE1

Dell Quad-Core Server

Enhancements:

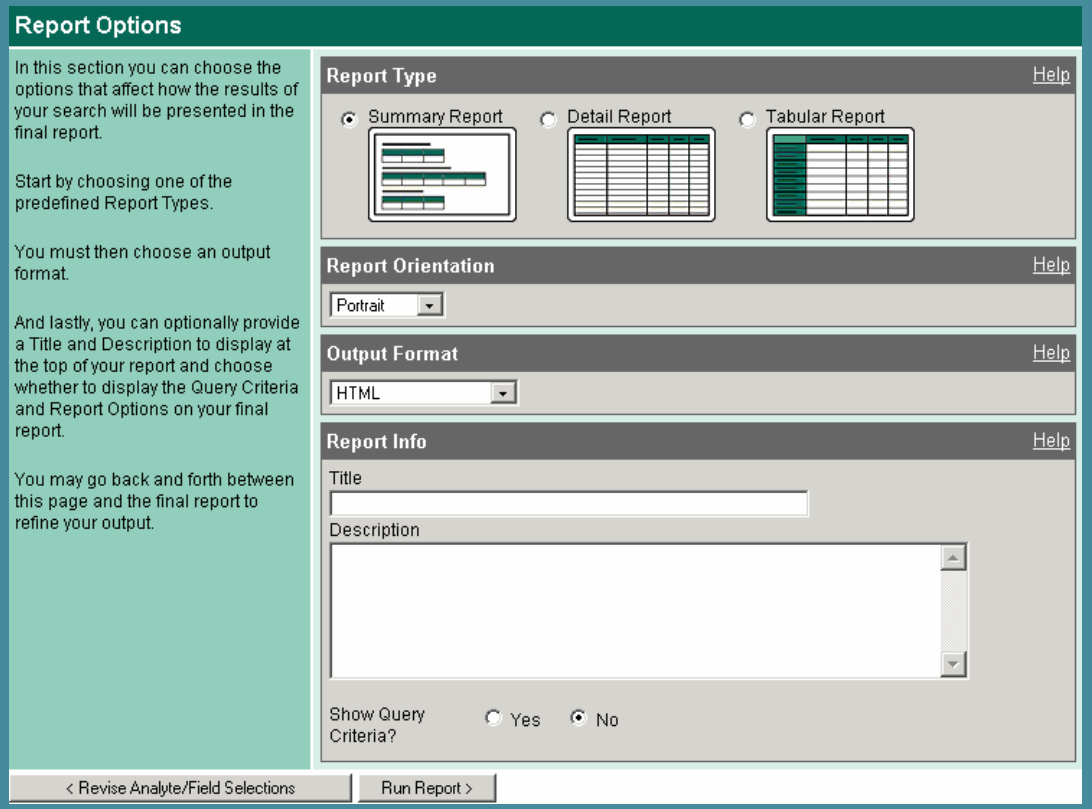
Intuitive GUI

Speed

Scalability

Security

Multiple output formats (analytes, units, report type)



Database Validation Work

Approach: Risk-based validation

Divide workload

Compare v4.0 & v3.0 output

Verify consistency of v4.0 outputs

Results: v4.0 & v3.0 are highly consistent

Some minor differences observed

Conclusion: Verified & improved data quality/integrity

Timeline & Future Directions

Jan 2008: SkyDev Technologies selected as developer

Apr 2009: Complete v4.0 upgrade

May 2009: Public release of v4.0

Fall 2009: Increase data volume

2010+: More crops/tissues, new database fcns, data import tools