



AEIC

Analytical Environmental Immunochemical Consortium

AEIC Fall Meeting – New Orleans

December 5 – 6, 2001

Hosted by Genescan

NOTE: I would like to thank Dean Layton, Stacy Charlton and Randy Giroux for filling in as Secretary and taking meeting notes in my absence---P. Hunst, AEIC Secretary.

Meeting Notes:

Allergenicity Assessment - Sue Hefle

Sue provided an overview of allergens, what they are and how they are detected. She discussed the challenges of detecting allergens in food with current methodologies. She reviewed the trade-offs of using a competitive assay versus a sandwich type and concluded that the sandwich was the format of choice as competitive assays are too prone to matrix effects and interference. There was further discussion of immunogen selection and the differences between raw versus crude peanut or roasted versus raw peanuts, for example. Sue went on to outline some of the differences between current commercially available kits for the primary allergens of concern in food. She stressed the importance of not making the kits too sensitive and targeting for detection at about 1 - 2.5 ppm. She indicated that there were qualitative as well as quantitative kits for different applications. There are fully developed kits for peanut, egg, casein, whey, almond, and kits in development for soybean, walnut/pecan, hazelnut, cashew, clam, sesame seed, and shrimp. (I could have missed some) Codex specifies specific acceptance levels. She also indicated that there was a need for protein methods for meat speciation, as Japan prefers protein methods for this application.

One large food processor (GM) was not interested in 30 minute assays to test for allergens, they cannot wait that long for results. Anne Bridges did indicate that they could use a lateral flow strip test for risk assessment as part of their HACCP plan.

Challenges in ELISA Development Using StarLink as a Model - Sue MacIntosh

Sue presented the data from the Aventis study that examined Cry9C levels in various food fractions to determine the extent of protein removal during different food processing conditions. Food products were produced using StarLink corn and the reduction of detectable Cry9C protein was measured for different dry milled versus wet milled corn products. As expected, highly processed dry milled products like corn puffs, ringed cereal and corn flakes showed very low or non-detectable levels of Cry9C. The whole grain, corn meal and corn flour had 14 to 15 ppm of Cry9C, but processing into hush puppies or corn bread showed a drop in detectable Cry9C

protein (2.3-2.6 ppm). MASA processed or wet milled products showed the lowest levels of Cry9C remaining or at non-detectable levels. Sue discussed the use of a polyclonal ELISA plate kit from EnviroLogix as it showed detection at somewhat lower levels for some food fractions. The theory being that perhaps the polyclonal Abs may be able to bind to more of the isotopes on partially denatured proteins.

Organizational Update -- USDA/GIPSA – Don Kendall

Don reviewed the proposal for new qualitative and quantitative method performance validation protocols. The new protocols call for more sample data points and include:

Qualitative tests

120 negative and positive controls at the maximum detection limit
30 positive and negative tests at both the 18°C and 30° C to test the ruggedness at different ambient conditions
5 controls for cross-reactivity (other events)
5 controls for major grains (corn, soybeans, wheat, barley, etc)
Test at threshold tolerance levels

Quantitative tests

120 negative and positive controls @ MDL
5 controls for other events (cross-reactivity)
5 controls for major grains (corn, soybeans, wheat)
Identify specific quantitation levels/range

Don also discussed their new Proficiency Program that replaces the accreditation program. He said it was a voluntary program in terms of participation and anonymity is preserved. There is no fee and the samples will be disseminated quarterly, which will include 12 samples (corn).

AEIC Goals

We discussed the organization's goals for the next 6-12 months and outlined the following:

1. EPA Workshop
2. ANSI participation
3. Produce three papers
 - a. Uses of Immunoassay Methods in Food & Feed
 - b. PCR Validation (R. Giroux, Ray Shillito, Frank Spiegelhalter, Stacy Charlton)
 - c. Sampling Paper (S. Charlton, Tom Currier, Randy Giroux, Mike Russell)
 - d. Immunoassay in food/feed matrices (Cindy Lipton, Dave Grothaus, Jim Stave, Tom Currier)
4. PowerPoint Presentation (D. Layton)

Spring meeting (2002): May 9-10 in Research Triangle Park, NC; Hosted by Aventis & Syngenta

Topics under consideration

1. Pros and Cons of monoclonal and polyclonal antibodies for developments of immunoassays
2. Emerging detection technologies: Third Wave, clinical microsensors, etc.
3. Small peptide immunoassays
4. Mycotoxin detection: current state of the art
5. Consumer perspectives on GMO's

AEIC Officer Election Results:

President: Jim Stave (SDI)

Vice President: Stacy Charlton (Syngenta)

Secretary: Penny Hunst (Dow AgroSciences)

Treasurer: Dean Layton (Envirologix)

Membership Report – Dean Layton

2001 AEIC Member Summary			
2001 Dues Outstanding			
Large Corporate Members	13	2	(Bayer, BASF)
Small Corporate Members	12	3	(Biacore, Biogenic Services, EPL Bioanalytical)
Affiliate Members	13	2	(Agdia, Cargill)
Individual Members	4		

Treasurer's Report – Dean Layton:

AEIC Treasurers Statement – December 6, 2001

Summary 2001

Starting Balance January 1, 2001 \$10,670.39

2001 Expenditures

Fall 2000 Meeting	\$1,644.00
Flowers	\$63.37
AOCS (Partial Pmt. US TAG)	\$1,750.00
Refreshments at spring meeting	\$95.42
Sidewinder (Website)	\$780.15
<u>TOTAL</u>	\$4,332.94

2001 Income

Membership	\$15,500.00
Interest	\$289.37
TOTAL	\$15,789.37

Account Balance as of December 1, 2001 **\$22,126.82**