

October 28, 2003

Certification of Cost of Production Rating Methodology for Cotton

This is to certify that I have reviewed the data, process and analysis utilized in the development of the rating methodology for the Cost of Production program for Cotton as outlined in the revised document dated June 13<sup>th</sup>, 2003. The following all conform to the ratemaking standards of the Casualty Actuarial Society and American Academy of Actuary for property and casualty ratemaking as they relate specifically to Multiple Peril Crop Insurance.

**Data**

The data utilized in developing the rating methodology was reviewed to determine:

- If it was appropriate to the nature of the analysis being done,
- The accuracy of the data was verified to the extent possible,
- The data was utilized appropriately in the methodology and
- If there was additional data available that would have enhanced the process.

I believe that all of the above were handled in an appropriate manner. A number of the rating elements identified the need for additional information that should be captured on an ongoing basis to enhance the process in the future.

In a number of instances, such as the adjustment for producers with limited experience, it was deemed necessary to develop rating factor/factors even though the data available was not as robust as would normally be desired. I believe that the process, as utilized, was appropriate in these instances.

The ratemaking process was enhanced via the introduction of additional data from the RMA database which was previously unavailable. I believe that the additional data was incorporated in a meaningful way into the ratemaking process to maximize its value.

**Process**

The process utilized in developing the rating methodology was reviewed to determine:

- Conformity with standard ratemaking methods as applied uniquely to Multiple Peril Crop Insurance,
- Consistency of application throughout the methodology,
- Resulting methodology is consistent with the policy, marketing and claims handling and
- Resulting rates are reasonable and based on credible data.

I believe that all of the above have been addressed appropriately given the data available for the review. The addition of data from the actual operation of the program and the additional data elements that may be captured in the future will need to be incorporated into the program as they become available.

In particular, a large amount of effort has been done by Agri-Logic to determine the reasoning behind the disparity of rates as determined in their ratemaking methodology as compared to the APH rates as generated by RMA for comparable coverage levels. Based on their work and my own review and knowledge of the two programs I believe that the rating differentials are justified based on the model and the differences between the programs. The final appropriateness and differential between the two programs will only be determined after the programs have been running concurrently for a number of years.

It is essential that the recommended rates be reevaluated on regular basis, preferably annually, in order to reflect the actual experience and mix of business that is attracted to this policy.

I have not reviewed the calculations of each and every rate, but have relied on the integrity of Agri-Logic in following the procedures that I have reviewed to calculate the rates. Only samples of the rates were reviewed to determine their calculation to be in accordance with the recommended methodology and the appropriateness of that methodology.

### **Analysis**

The analysis utilized in developing the rating methodology was reviewed to determine:

- Was there a consistent process for making decisions,
- Is the amount of documentation necessary to recreate the results available,
- Do the resulting rates have a reasonable relationship to other MPCl products when adjusted for differences in the programs
- Are the calculated rates reflective of the underlying data,
- Does the methodology result in a structure that is internally consistent with limited ability to be manipulated by the producer and
- Does the methodology lend itself to adaptation as new data is captured or the program is modified.

I believe that all of the above have been adequately addressed.

I believe that Agri-Logic has done a commendable job of identifying the areas where they see the need for additional studies and/or the need for additional data to verify the reasonableness of their assumptions, models and rating factors. While the availability of large volumes of credible data in great detail would result in a perfect rating environment, this rarely exists in a typical ratemaking environment. Agri-Logic has clearly identified the areas where judgment was utilized or where the need for additional data to verify the calculated results is needed. Based on what they were asked to do, the resulting analysis is appropriate under the conditions available.

### **Summary**

In total, I believe that the rating methodology is a fair and appropriate model based on the data available. It is my understanding from reviewing all of the materials that this program results in a sound insurance product based on the principles of the Casualty Actuarial Society and American Academy of Actuaries.

I would refer interested readers to my addendum for additional comments about the methodology in more detail.

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