



Public Health Lessons from HACCP-Based Inspection Models Project

*Presentation by Loren D. Lange
August 7, 2007*



Three Topics

- Overview of Current Young Chicken HIMP Establishments
- Data from Before and After HIMP Implementation
- Comparing Data From HIMP Establishments with Data From Traditional Establishments



Overview of Current Young Chicken HIMP Establishments



Young Chicken HIMP Establishments

- Currently 20 HIMP establishments (18 Large, 2 Small)
- CY 2006: 224 establishments slaughtered young chickens under Federal inspection
- 177 establishments account for >99.9%
- HIMP establishments 11.3% of the 177
- 20 HIMP establishments account for over 16.5% production (CY 2006)
- One out of every 6 birds now produced under HIMP



**Implementation Schedule
(Currently 20 Young Chicken
HIMP Establishments)**

Time Period	Number
1999	2
Jan - June 2000	8
July - Dec 2000	0
Jan - June 2001	5
July - Dec 2001	4
2003	1



- HIMP was designed to free up inspection resources for additional higher priority public health tasks or inspection procedures. It was not designed to meet a goal of reducing incidence of *Salmonella*, but more recent data indicate that HIMP, in conjunction with the types of inspection procedures performed, is having a positive affect on public health.



Data from Before and After HIMP Implementation

(Same Establishments – Different Time
Periods)



History of HIMP *Salmonella* Data

- As establishments were joining HIMP, a contract lab analyzed samples from 300 carcasses before and after HIMP implementation.
- 10 samples per day for 30 days (6 weeks).
- Sets of 300 referred to as Baseline versus Models.



History of *Salmonella* Data (Cont'd.)

- Results for 8 establishments published in *Journal of Food Protection*, Vol. 64, No. 6, 2001, Pages 826-832 Copyright International Association for Food Protection.

	Number Samples	Percent Positive
Baseline	2,438	5.7
Models	2,587	5.9

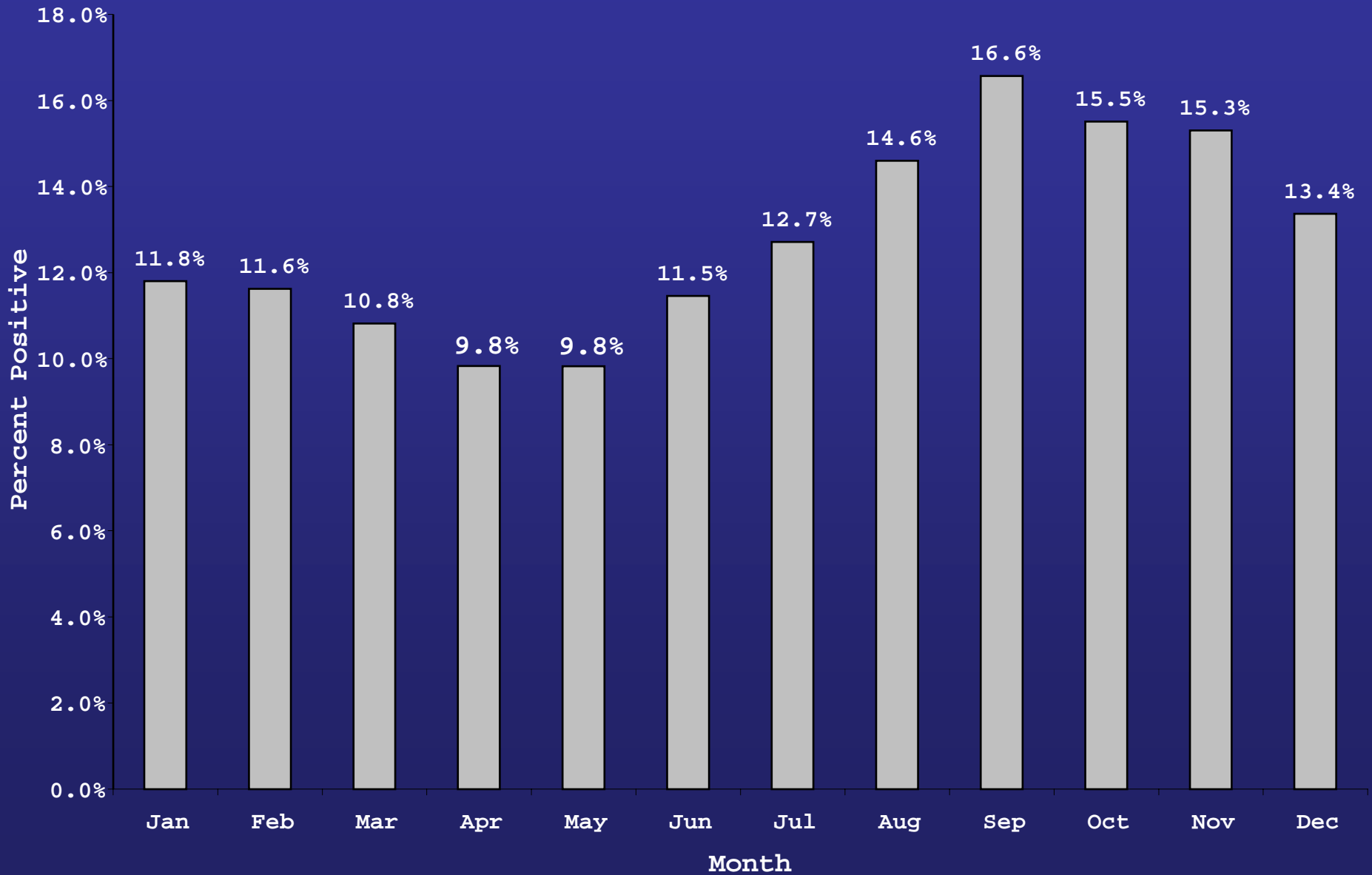
- Conclusion: “Although the *Salmonella* prevalence rates for the two phases were not significantly different ($P = 0.7003$), there was a minor increase numerically in the models phase. This may be a reflection of the more sensitive *Salmonella* detection method used in the models phase for two of the plants.”



History of *Salmonella* Data (Cont'd.)

- 30-day windows before and after implementation raised questions about effect of seasonality on the results
- Following is a slide from the February 2006 public meeting in Atlanta on the *Salmonella* initiative
- Baseline versus Models Data was not adjusted for seasonality. We know that in recent years other variables have “masked” any affect of seasonality.

Broilers - by Month (1998-2004)
(7 years of data)





FSIS Analysis (December 2002)

1998 through HIMP Implementation	8.0
HIMP Implementation Date through December 1, 2002	7.9

**Note: 20 establishments that included 19 of
the current (1 has since been replaced)**



Conclusion

- The Implementation of HIMP in young chicken establishments from 1999 to 2001 did not appear to have any short-term affect on *Salmonella* rates in the HIMP establishments.



Comparing Data Between HIMP and Traditional Establishments

(Different Establishments – Same Time
Period)



Review by National Alliance for Food Safety Technical Team (September – October 2002)

- Looked at verification data from 21 establishments operating under traditional system and 21 establishments under HIMP
- Data prior to September 30, 2002 (exact timeframe not found)
- Found 8.0% from traditional establishments not significantly different from 8.2% under the HIMP system



Review by National Alliance for Food Safety Technical Team (September – October 2002) (Cont'd.)

- Review team stated that sets from 51 days (over approximately 3 months) should reduce potential effect of seasonable bias
- Review conclusion: “These data suggest that implementation of the HIMP system does not affect *Salmonella* recovery frequency.”



- Slides that will follow compare the *Salmonella* results from the HACCP verification sampling for HIMP versus Traditional for 2001 – 2007.
- Earlier presentations of similar data raised the following question:
 - Do HIMP establishments have lower levels of *Salmonella* today because (as a group of volunteer establishments) they have always had the best control?



- Answer: Hard to answer

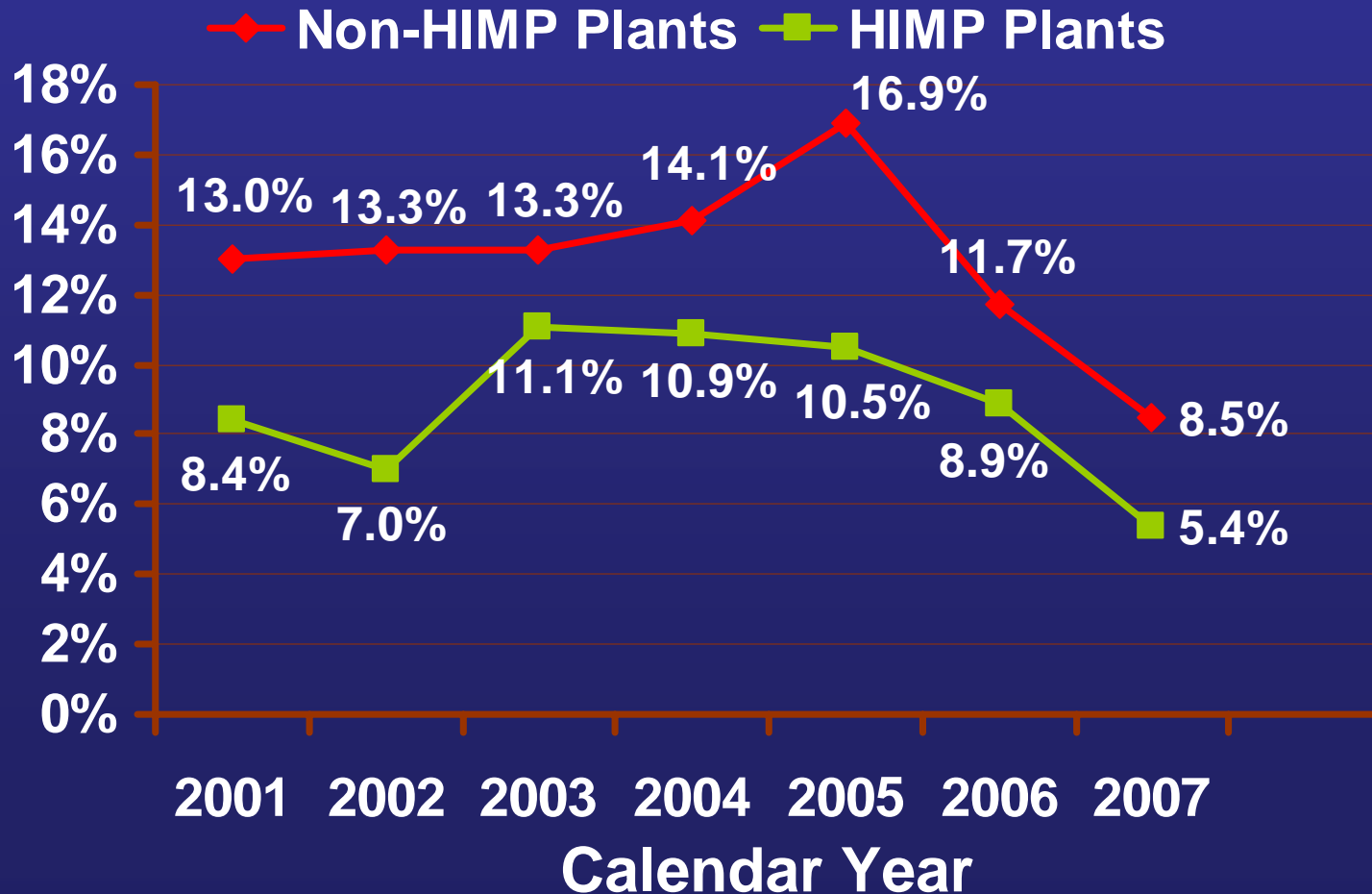
Year	Number of Current HIMP/Plants Tested (Samples)	% Positive for Future HIMP	% All Establishments
1998 ("A" Samples)	17 (804)	10.7	10.8
1999 (All Samples)	19 (739)	5.1	9.8*

* Large establishments (including all sizes - 11.7%)

- High Level of Variation by Plant

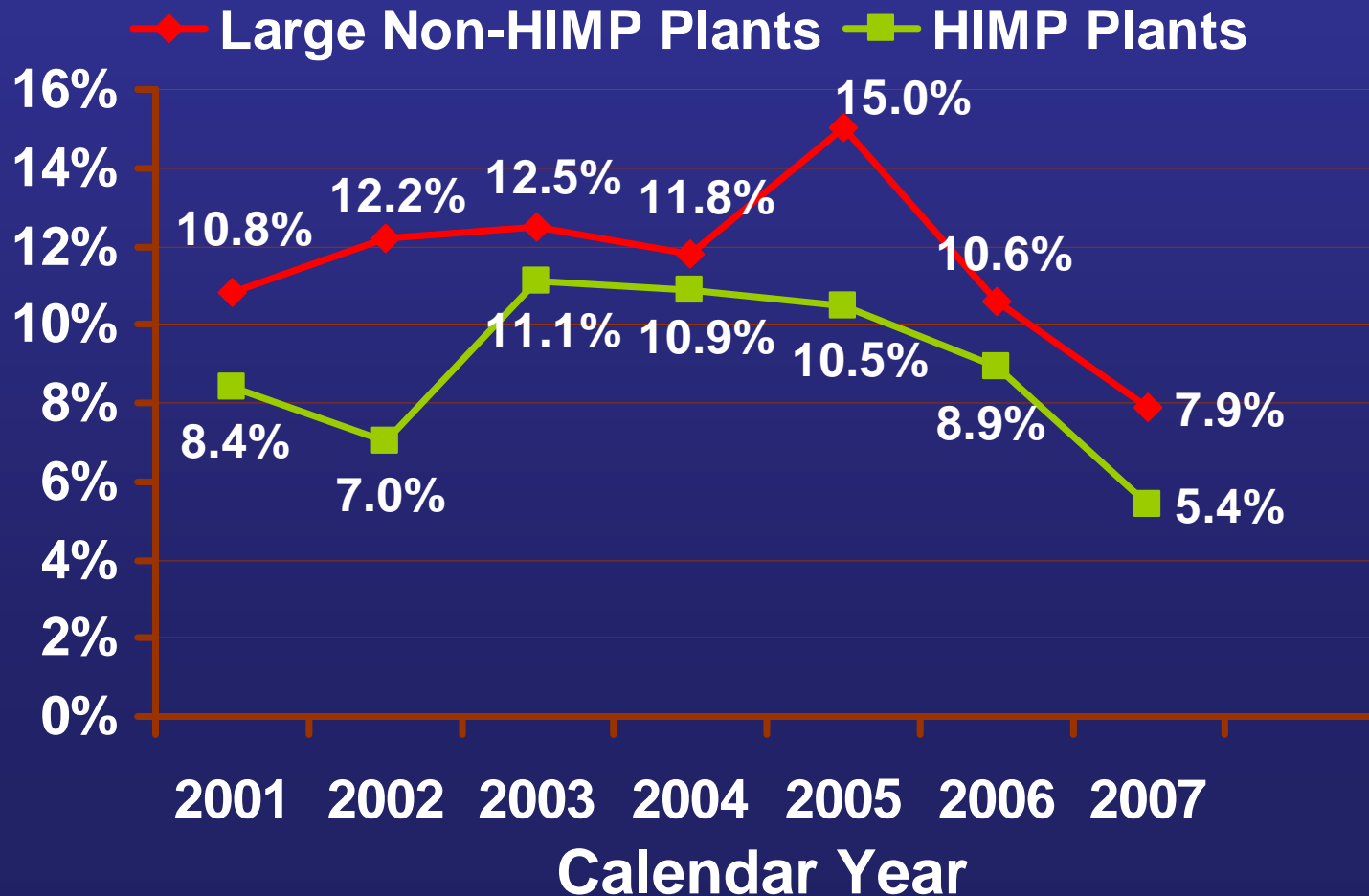


Percentage of Positive Regulatory Samples in Broilers for *Salmonella* in HIMP vs. Non-HIMP Plants



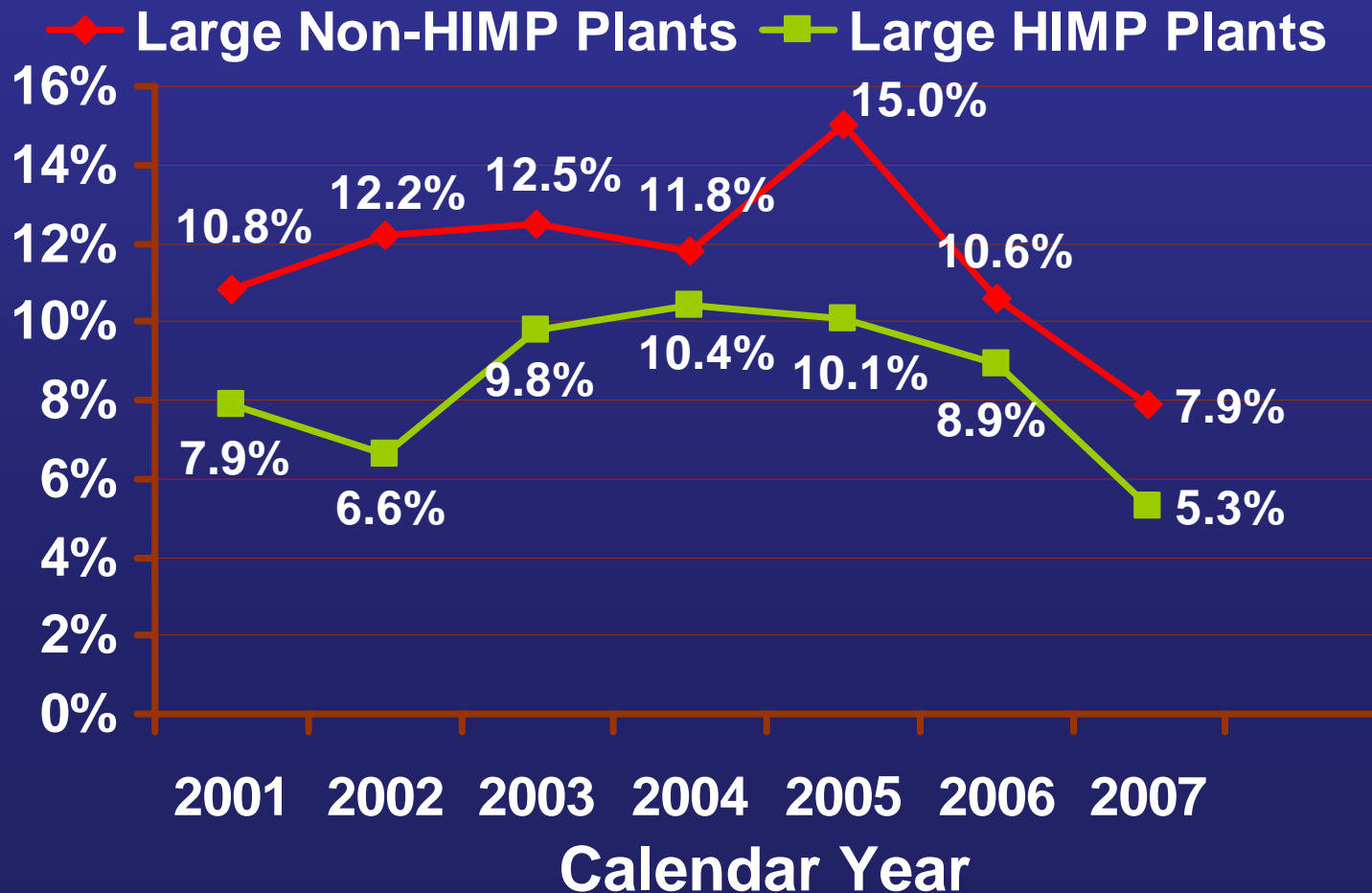


Percentage of Positive Regulatory Samples in Broilers for *Salmonella* in HIMP vs. Large Non-HIMP Plants





Percentage of Positive Regulatory Samples in Broilers for *Salmonella* in Large HIMP vs. Large Non-HIMP Plants





Conclusion

- Over the years, the HIMP plants have continued to control *Salmonella* below the industry average.
- When overall industry rates were increasing during 2003-2005, the 20 HIMP plants actually showed a slight decrease.



What Variables Exist Traditional Versus HIMP

- HIMP establishments have a far larger number of off-line inspection tasks.
- Establishments are assuming different responsibility for sorting carcasses in HIMP plants.
- Risk Assessment Division has integrated details from number and types of inspection tasks, results (NRs), and *Salmonella* results into the risk assessment covering ALL young chicken establishments that will be published shortly.



What Variables Exist Traditional Versus HIMP (Cont'd.)

- This Risk Assessment will incorporate specific NR findings, such as:
 - HIMP young chicken plants are receiving ~3 times as many HACCP (03J) procedures as their non-HIMP counterparts and achieving a higher level of compliance (with a statistically significant difference of at the 95% confidence level)
 - HIMP young chicken plants are receiving nearly the same level of sanitation inspection as their non-HIMP counterparts and are achieving a slightly lower level of compliance (but no statistically significant difference at either the 90% or 95% confidence level)



Summary of Conclusions

- The Implementation of HIMP in young chicken establishments from 1999 to 2001 did not appear to have an effect on *Salmonella* rates.
- Over the years, the HIMP plants have continued to control *Salmonella* below the industry average.
- When overall industry rates were increasing during 2003-2005, the 20 HIMP plants actually showed a slight decrease.
- Risk Assessment will add to our understanding of relationship between inspection procedures and pathogen levels across all young chicken slaughter establishments.