

A photograph of a bowl filled with yellow corn kernels, surrounded by several ears of corn on a wooden surface. The corn is bright yellow and appears to be freshly harvested. The background is dark, making the corn stand out.

# 2023 Region 1, Northwest Uniformity in Sweet Corn Germination

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# Objective of the Referee

- Survey uniformity among seed laboratories with regard to seed testing methods and interpretation of the existing AOSA Rules for sweet corn.
- Survey uniformity within laboratories among the seed analysts.

# Design

- Seed was donated by Crookham Company
- 7 laboratories participated
- Referee participants were instructed to test seed according to AOSA Rules
- Each lab received 4 different lots, 3 replications
- Testing intervals – weekly, for three weeks
- The only specific direction was to count and record normal seedlings, abnormal seedlings, and dead seeds
- Results are recorded in percentage



# Laboratories

Crookham  
Company - Idaho

Idaho Seed State  
Lab - Idaho

ADM  
Edible Bean Idaho

Sakata -  
Washington

Sakata -  
California

Illinois Crop  
Improvement  
Association -  
Illinois

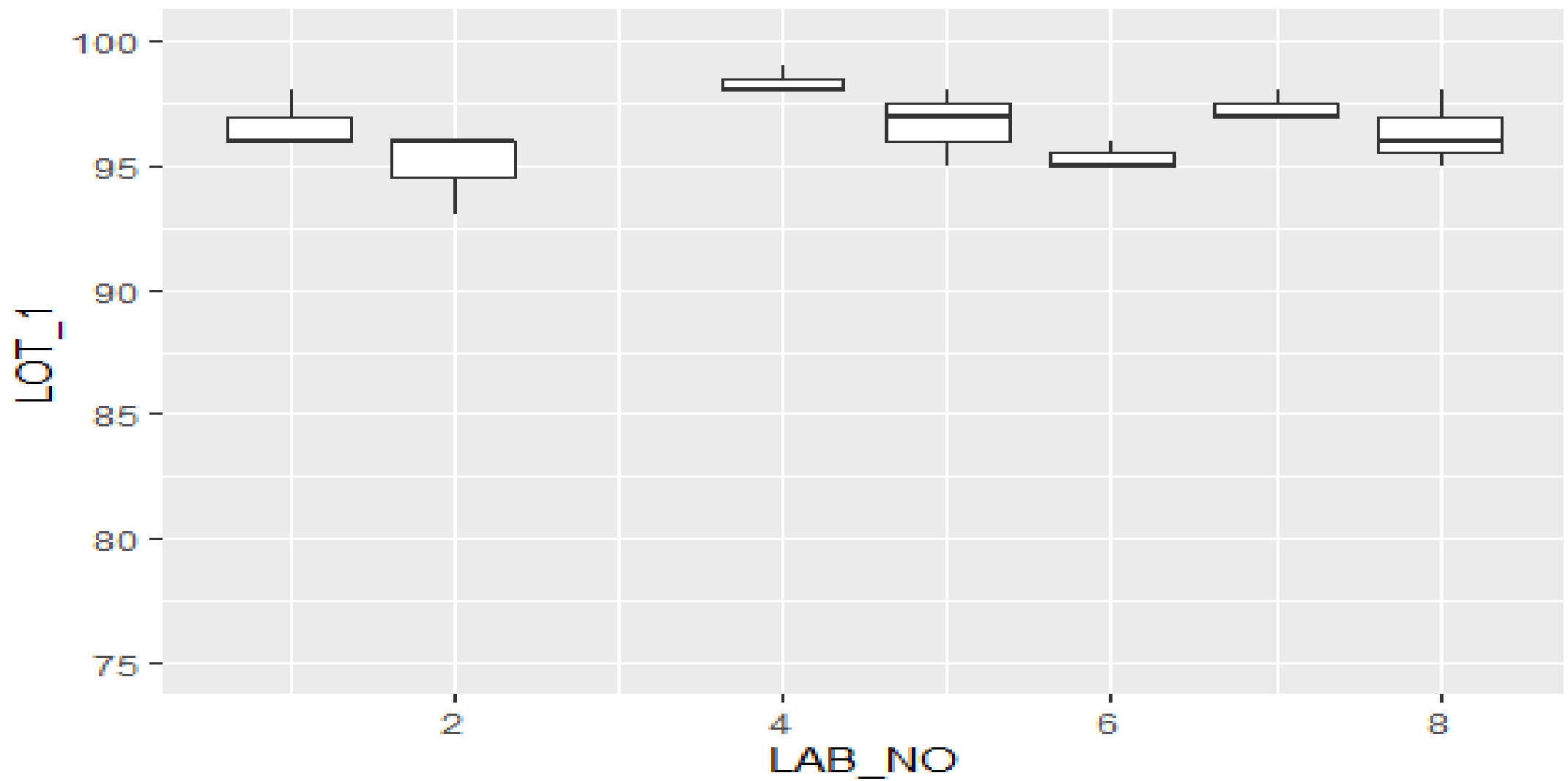
SoDak Labs -  
South Dakota

# Germination results

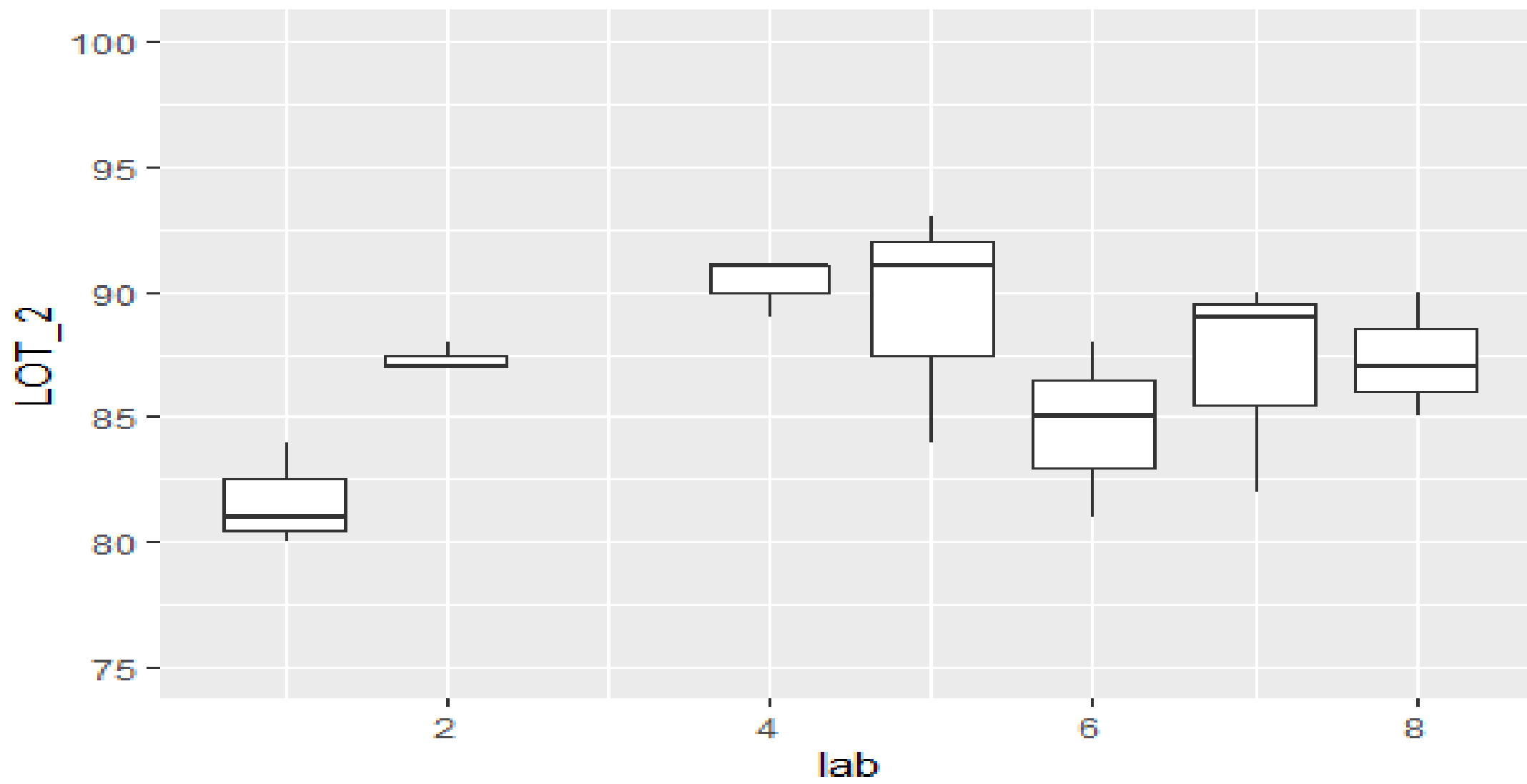
2023 Sweet Corn Referee Germination Results												
	Week 1				Week 2				Week 3			
Lab #	Sample #	Sample #	Sample #	Sample #	Sample #	Sample #	Sample #	Sample #	Sample #	Sample #	Sample #	Sample #
	1	2	3	4	5	6	7	8	9	10	11	12
1	98	84	94	86	96	80	81	72	96	81	93	89
2	93	88	93	93	96	87	94	89	96	87	94	93
4	98	91	96	90	99	91	94	92	98	89	96	90
5	95	93	95	91	98	84	87	87	97	91	95	92
6	96	88	93	89	95	85	92	88	95	81	94	85
7	97	89	90	90	98	90	91	92	97	82	90	90
8	95	90	93	89	98	85	91	89	96	87	91	89



boxplot of datapoints LOT\_1

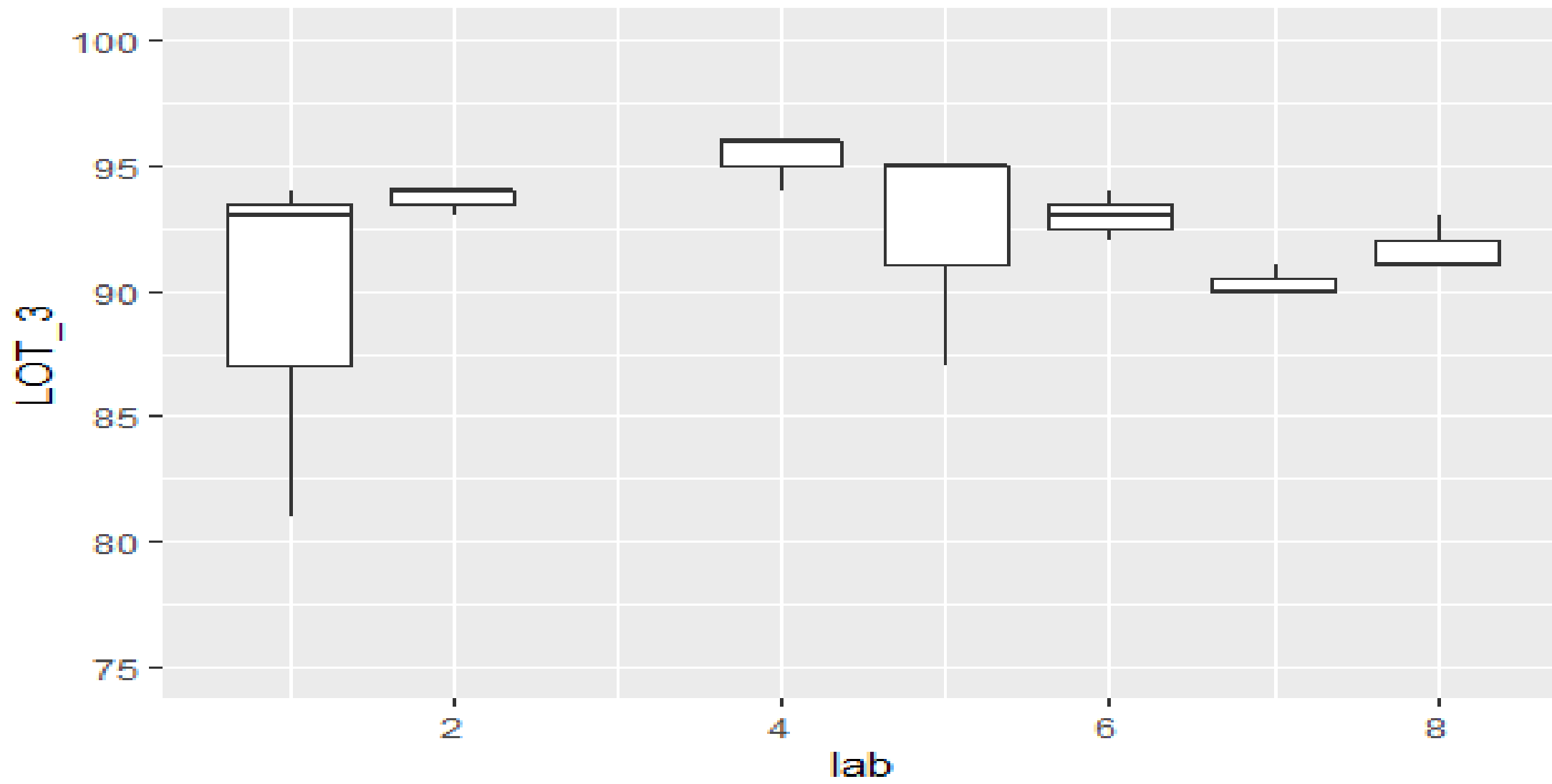


boxplot of datapoints LOT\_2

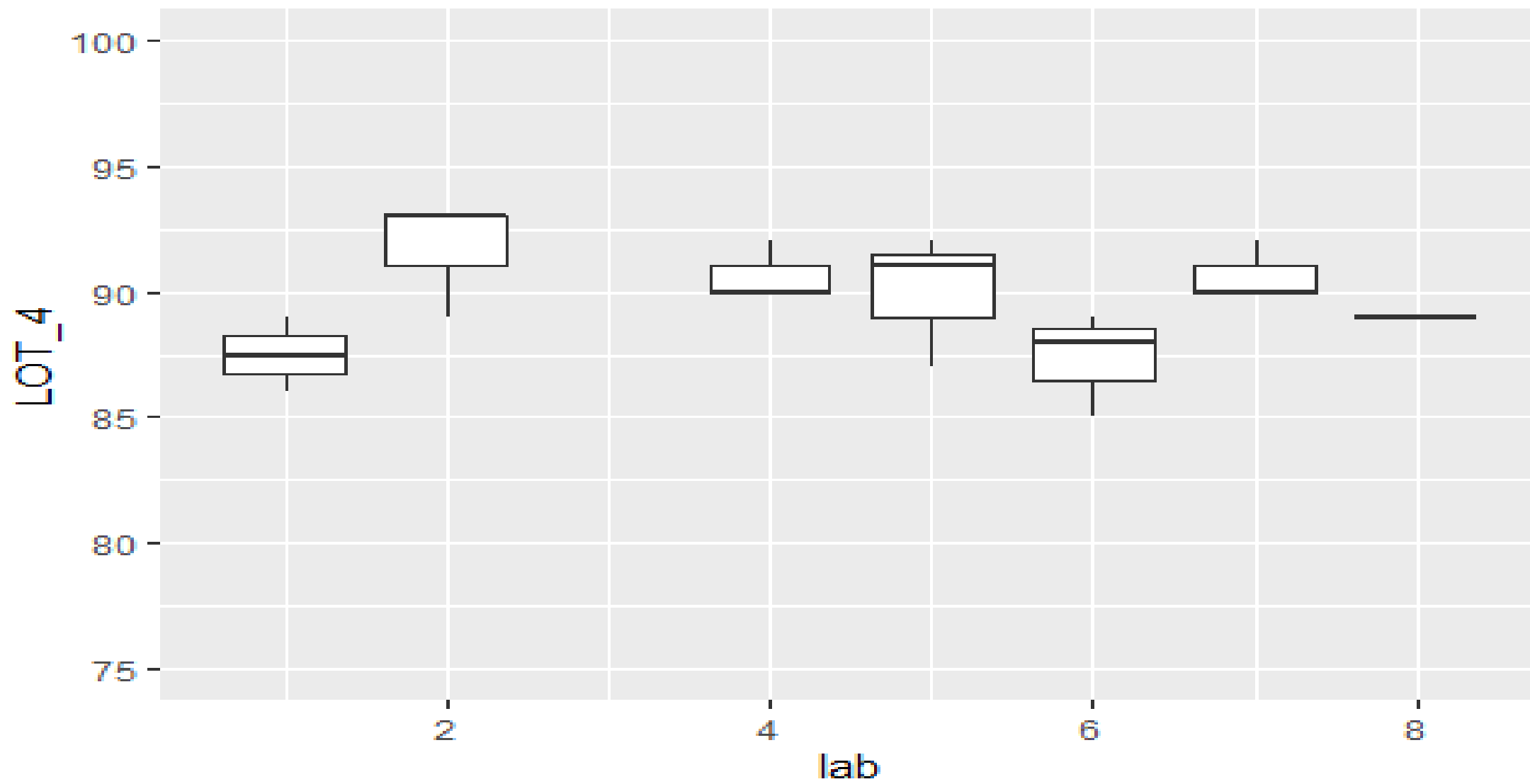




boxplot of datapoints LOT\_3



boxplot of datapoints LOT\_4



Variation<sup>†</sup> in weekly test results and among seed laboratories, in germination test results of four sweet corn seed lots.

<sup>†</sup>Based on analysis of variance results (*F* test) with two factors, “Week” and “Seed Lot.”

\*Variation is significant indicating low reproducibility.

<sup>NS</sup>Variation is not significant, indicating either good repeatability or reproducibility.

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<b>Source of Variation</b>	<b>Seed Lot</b>			
	1	2	3	4
<b>Weeks</b> (a measure of repeatability)	NS	NS	NS	NS
<b>Seed Labs</b> (a measure of reproducibility)	*	*	NS	NS

# Conclusion

- Uniformity between labs is very good
- Uniformity within the lab, and between analysts is very good

# Acknowledgements

- Thanks to all of the participating laboratories:  
ADM- Edible Bean Seed Lab, Idaho State Seed Lab, Sakata Seed Lab, Washington, Sakata Seed Lab California, Illinois Crop Improvement Association, and SoDak Labs.

# QUESTIONS

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THANK YOU!

