2016 Proposal 12 Supporting Evidence

Soybean on Agar August 2015

This experiment was conducted to test the efficacy of agar as a viable media option for various seed types, in this case a large seeded legume.

Seed used: Mid-west Soybean (*Glycine max*) Referee 2015

Referee protocol: Enclosed are 6 different lots/samples of Soybeans with varying degrees of germination percentages. Each sample is to be planted two separate ways.

1. 25C or 20-30C on media of analyst's choice for 7 days.
2. 25C or 20-30C on media of analyst's choice for 8 days.

Creped cellulose paper (CCP) was used for the experiments. Two lab members participated in the referee. Person A planted samples using method 1, method 2 as well as seed on 0.6% agar to be evaluated on day 7. Person B planted samples using method 1, and method 2. Samples were planted on 0.6% agar 1 week later to be evaluated on day 7.

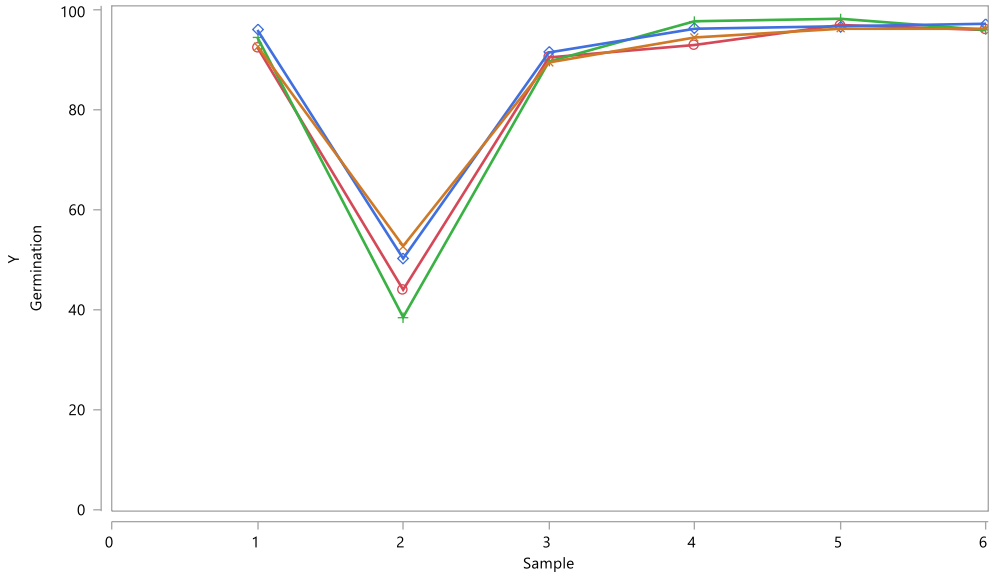
Results: Samples 1-6 for both persons A and B comparing CCP to agar the result had an R^2=0.99 and all tests were within test to test tolerance. When comparing the samples of creped cellulose from person A to the results of the creped cellulose paper to person B the correlation was R^2= 0.99 and all tests were in tolerance. The samples on agar when comparing person A to B the correlation R^2=0.99, it should be noted that 1 sample was out of tolerance when comparing test to test results. The test was unable to be repeated as the supply of seed had been depleted.

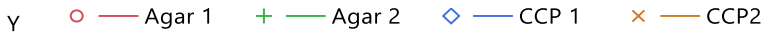
The experiment suggests that agar if optimized is a viable media option for soybean germination testing.

	CCP Avg	Agar Avg
Person A	88	86
Person B	87	86

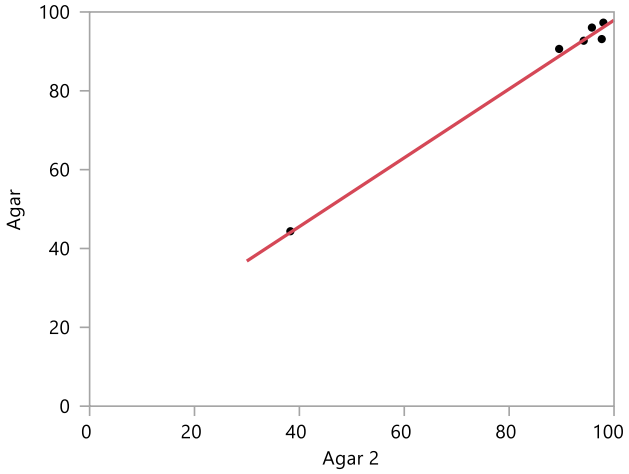
Table 1 Average of samples by evaluator broken out by media

Overlay Plot





Bivariate Fit of Agar 1 By Agar 2



Linear Fit

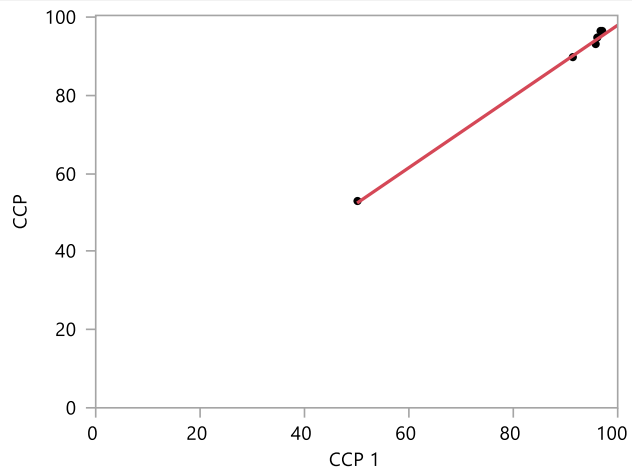
Linear Fit

Agar 1 = 10.615974 + 0.8729947*Agar 2

Summary of Fit

RSquare	0.993047
RSquare Adj	0.991309
Root Mean Square Error	1.908301
Mean of Response	85.5
Observations (or Sum Wgts	6

Bivariate Fit of CCP2 By CCP 1



Linear Fit

Linear Fit

CCP2 = 6.8997979 + 0.9102296*CCP 1

Summary of Fit

RSquare	0.996408
RSquare Adj	0.99551
Root Mean Square Error	1.137026
Mean of Response	87
Observations (or Sum Wgts	6

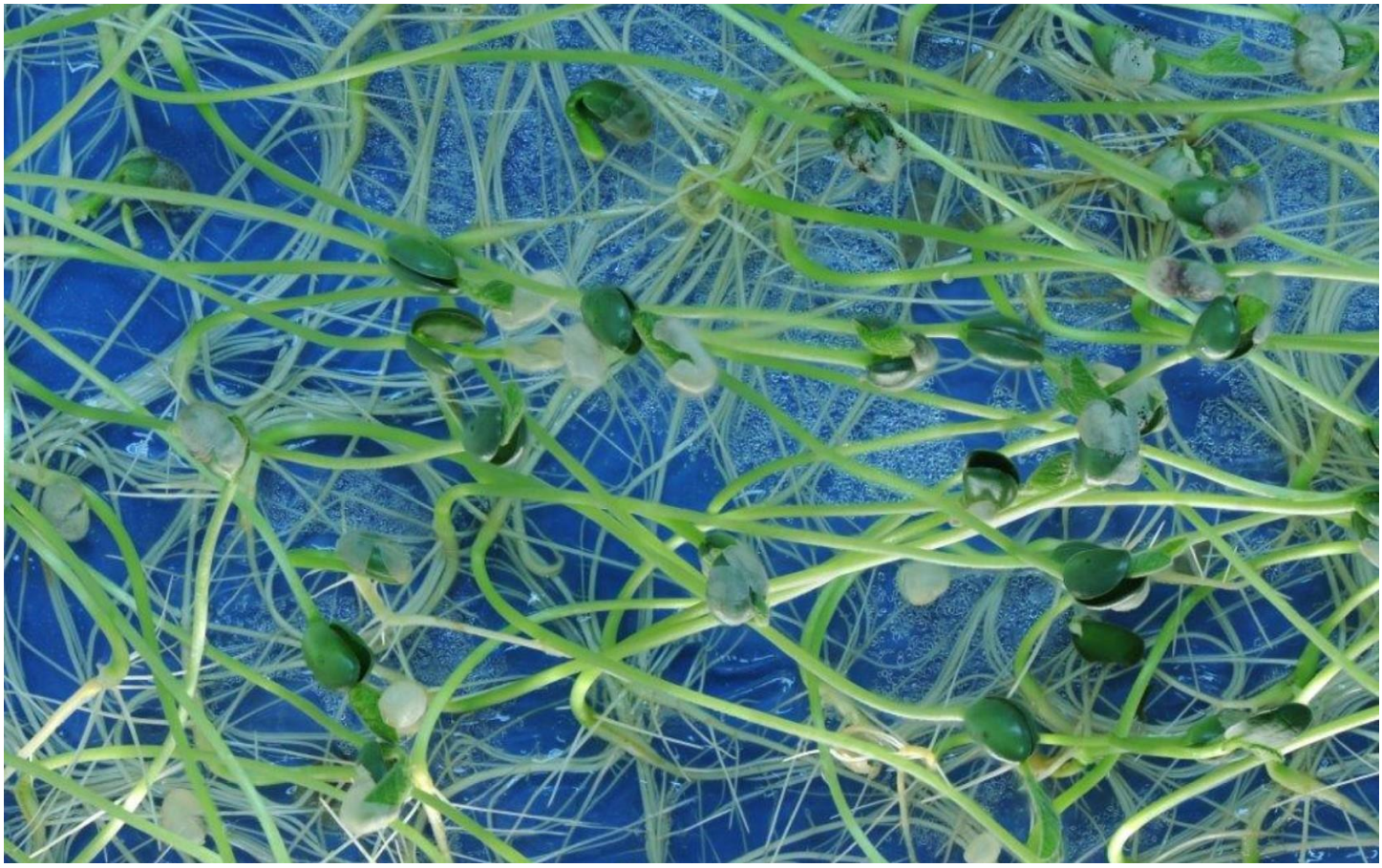


Figure 1 Soybeans on agar