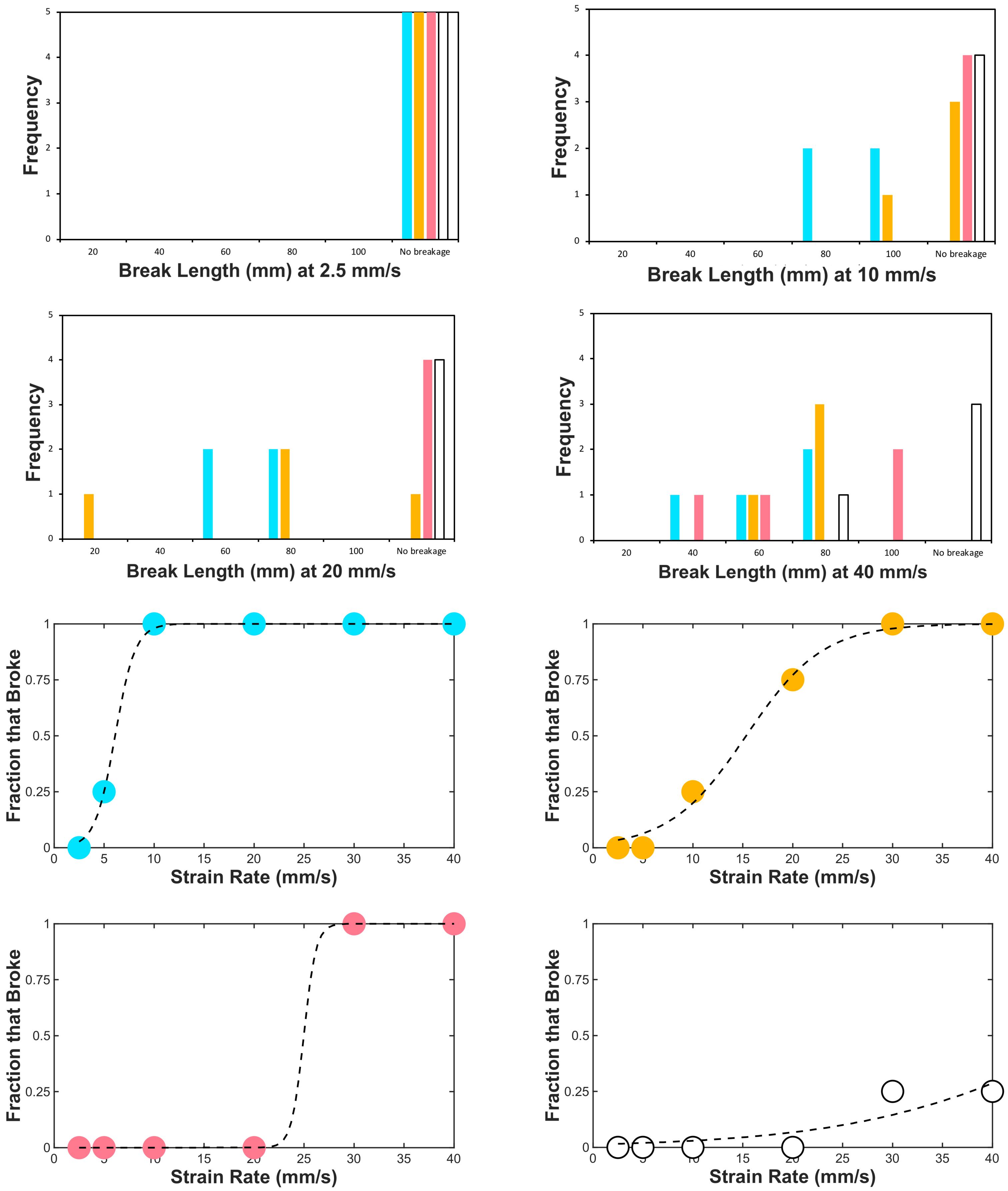


ABSTRACT

A study on how slime composition and strain rate affect slime stretchiness can be useful for the consumer product industry and for novel research. Different mixtures of water, borax, and glue yield slime with differences in stretchiness, quantifiable in graphs of force versus distance. The breaking points of slime were found using a pull test on a texture analyzer. The fraction of samples that broke was graphed over strain rate and fit to a sigmoidal function to find the critical strain rate, or the rate at which 50% of the samples were predicted to break. Slime with a decreased amount of borax had a critical strain rate of 50.6 ± 20.0 mm/s, higher than slime with a regular amount of borax. Decreasing the amount of borax increases the slime stretchiness across different strain rates.

RESULTS



CONCLUSION

Critical strain rate:

- decreased amount of borax: 50.6 ± 20.0 mm/s
- standard slime: 24.98 ± 0.85 mm/s
- increased amount of borax: 15.34 ± 2.01 mm/s
- added shaving gel: 6.11 ± 0.20 mm/s

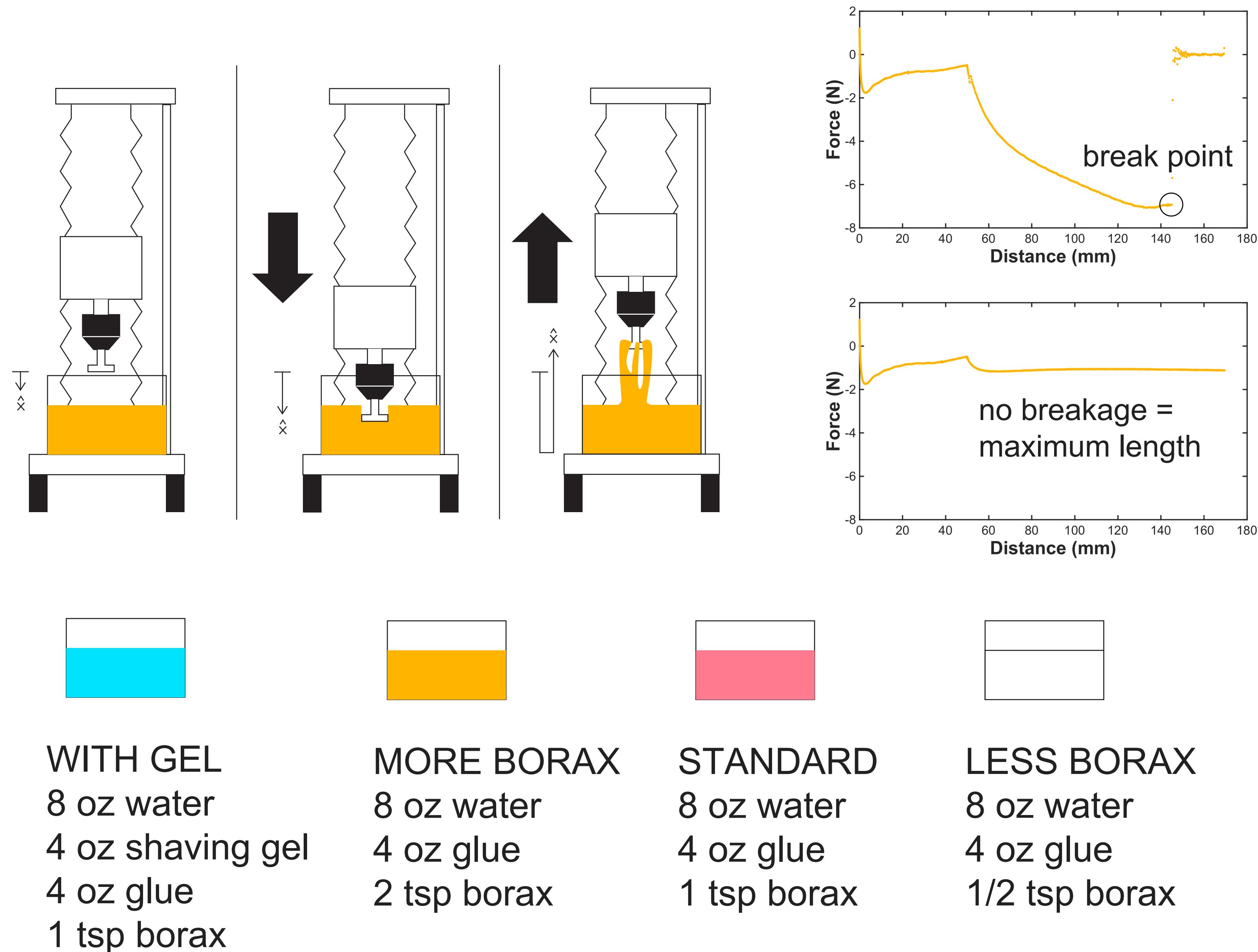
\uparrow critical strain rate = \uparrow stretchiness

Takeaway: Decreasing borax increases stretchiness across strain rates.

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EXPERIMENTAL DESIGN



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