

Inrae-AgroParisTech International Centre for Molecular and Physical Gastronomy

Authors

Elizabeth Codjoe, Whitney Vale-Hagan, Linda Adu-Kumi, Roisin Burke

Title of the work

Supplementary Material to the article The impact of onion bulb (Allium cepa L.) addition on the softening characteristics of seeds of cowpeas (Vigna unguiculata L. Warp)

Year 2025, Volume 11 (1), Number 6, pp. 1-5.

Published online:

26 May 2025 https://icmpg.hub.inrae.fr/international-activities-of-the-international-centre-of-moleculargastronomy/international-journal-of-molecular-and-physical-gastronomy/4-edible-ideas/4.4.experimental-tests-of-culinary-precisions/onions-and-peas

<u>Supplementary Material to the article The impact of onion bulb (Allium cepa L.) addition on the</u> <u>softening characteristics of seeds of cowpeas (Vigna unguiculata L. Warp)</u> © 2025 by <u>Elizabeth</u> <u>Codjoe, Whitney Vale-Hagan, Linda Adu-Kumi, Roisin Burke</u> is licensed under <u>CC BY 4.0</u>

Experimental test of culinary precisions

Supplementary Material to the article The impact of onion bulb (Allium cepa L.) addition on the softening characteristics of seeds of cowpeas (Vigna unguiculata L. Warp)

Elizabeth Codjoe^{1,2}, Whitney Vale-Hagan³, Linda Adu-Kumi 4, Roisin Burke¹

- 1. Technological University Dublin, Dublin, Ireland
- 2. Lund University, Sweden
- 3. Queens University Belfast, Northern Ireland
- 4. University College Cork, Ireland

*Correspondence: <u>lizbethcodjoe@gmail.com</u>

Statistical analysis details : ANOVA and Post-hoc tests Results

1. Consistency

One-way analysis of consistency by sample with Turkey-Kramer post hoc test (p < 0.05):



International Journal of Molecular and Physical Gastronomy. 2025, 11(1), 6, 1-5 open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/)

Experimental test of culinary precisions

Source	DF	Sum Squares	of Mean Square	F Ratio	Prob > F
Sample	2	12.317460	6.15873	7.7600	0.0010*
Error	60	47.619048	0.79365		
C. Total	62	59.936508			

Analysis of variance (ANOVA) for consistency perception among the samples:

Turkey-Kramer HSD post hoc test results for consistency perception among the samples:

Level		Mean			
2	A	3.8571429			
1	В	3.0952381			
3	В	2.8095238			
Levels not connected by same letter are significantly different.					

2. Odour:

One-way analysis of odour by sample with Turkey-Kramer Post Hoc Test (p < 0.05):



International Journal of Molecular and Physical Gastronomy. 2025, 11(1), 6, 1-5 open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/)

Experimental test of culinary precisions

Analysis of variance (ANOVA) for odour perception among the samples :

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Sample	2	3.079365	1.53968	1.2484	0.2943
Error	60	74.000000	1.23333		
C. Total	62	77.079365			

Turkey-Kramer HSD post hoc test results for odour perception among the samples:

Level		Mean
3	А	2.4761905
2	А	2.0952381
1	А	1.9523810
Levels	not connec	ted by same letter are significantly different.

3. Flavour:

One-way analysis of flavour by sample with Turkey-Kramer post hoc test (p < 0.05)



International Journal of Molecular and Physical Gastronomy. 2025, 11(1), 6, 1-5 open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/)

Experimental test of culinary precisions

Analysis of varience (ANOVA) for flavour perception among the samples:

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Sample	2	0.603175	0.30159	0.2844	0.7535
Error	60	63.619048	1.06032		
C. Total	62	64.222222			

Turkey-Kramer HSD post hoc test results for flavour perception among the samples:

Level		Mean
3	А	3.0000000
2	А	2.9047619
1	А	2.7619048

Levels not connected by same letter are significantly different.

4. Colour

One-Way Analysis of Colour by Sample with Turkey-Kramer Post Hoc Test (p < 0.05):



International Journal of Molecular and Physical Gastronomy. 2025, 11(1), 6, 1-5 open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/)

Experimental test of culinary precisions

Source	DF	Sum Squares	of Mean Square	F Ratio	Prob > F
Sample	2	4.412698	2.20635	3.2102	0.0474*
Error	60	41.238095	0.68730		
C. Total	62	45.650794			

Analysis of variance (ANOVA) for colour perception among the samples:

Turkey-Kramer HSD post hoc test results for colour perception among the samples:

Leve			Mean	
I				
1	А		3.7142857	
3	А	В	3.5714286	
2		В	3.0952381	
Loval	n not oo	nnootod by como la	ttor oro oignifio	onthy difford

Levels not connected by same letter are significantly different.

Citation:

Elizabeth Codjoe, Whitney Vale-Hagan, Linda Adu-Kumi, Roisin Burke. 2025. Supplementary Material to the article "The impact of onion (Allium cepa L.) addition on the softening characteristics of seeds of cowpeas (Vigna unguiculata L. Warp)", *International Journal of Molecular and Physical Gastronomy*, 11(1), 6, 1-5. doi: 10.17180/ijmpg-2025-art06