APPENDICES

Appendix 1: Calibration curve data and pesticide removal percentage

Table A1: Calibration Curve Data

Concentration (µg/mL)	Peak area		
	Dimethoate RT (12.79 min)	Carbendazim RT (13.60 min)	Chlorpyrifos RT (23.53 min)
0	0	0	0
0.5	11.5	101.3	14.6
2	29	300	68
4	43.7	640.35	148.5
6	77.7	1110.4	224.3
8	98.54	1464.4	305.76
10	107.47	1773.15	372.94

Appendix 2: Total sugar content and reduction percentage

Table B1: Total Sugars Contents (mg/g Glucose Equivalent) and % Reduction in Samples Washed by Water, 1 % Detergent Solutions, and Sodium Chloride (1 %, 2 % and 3 %) Solutions Compared to Control Sample

Sample	TS mg/g	Rd %
Unwashed(control)	775.7 ± 29.14	-
Tap water, 2min, 25°C	700.97 ± 18	10.8
Tap water, 2min, 37°C	634.25± 1l.3	19.32
Tap water, 5min, 25°C	676.4 ± 11.92	12.30
Tap water, 5min, 37°C	526.47 ± 16.13	32.95
Detergent 1%, 5min, 25°C	690.5 ± 3.78	12.11
Detergent 1%, 5min, 37°C	584.6 ± 40.68	25.59
NaCl 1%,5min, 25°C	707.5 ± 13.1	7.34
NaCl 1%, 5min, 37°C	645.77±15.5	17.81
NaCl 2%, 5min, 25°C	728.1± 23.3	9.96
NaCl 2%, 5min, 37°C	693.28 ± 21.1	11.76
NaCl 3%, 5min, 25°C	642.62 ± 6.2	18.22
NaCl 3%, 5min, 37	639.21± 8.12	18.65

Table B2: Total Sugars (TS) Contents and (TS) Reduction % in Samples Washed by Different Concentrations of Sodium Bicarbonate, Acetic Acid, Hydrogen Peroxide and Potassium Permanganate Solutions at 25°C and 37°C and Time Intervals of 2,5 and 10 Minutes (Mean ± SD).

Experimental conditions	$NaHCO_3$		Acetic acid		H_2O_2		$KMnO_4$	
	TS	Rd %	TS	Rd %	TS	Rd %	TS	Rd %
1%, 2min, 25°C	772.59	0.39	769.8	0.76	744.4	4.03	772.13	0.46
1%,5min, 25°C	768.5	0.92	763.56	1.56	741.34	4.43	770.68	0.65
1%,10min, 25°C	755.5	2.6	754.36	2.75	738.23	4.83	767.80	1.02
1%,2min, 37°C	769.77	0.76	762.66	1.68	756.37	2.49	753.48	2.86
1%,5min, 37°C	762.04	1.76	757.41	2.36	762.04	1.76	752.66	2.97
1%,10min, 37°C	751.80	3.08	749.53	3.38	770.58	0.66	740.27	4.57
2%, 2min, 25°C	770.14	0.71	765.81	1.28	733.94	5.38	719.52	7.25

Table B2, continued

Experimental conditions	NaHCO₃		Acetic acid		H_2O_2		$KMnO_4$	
	TS	Rd %	TS	Rd %	TS	Rd %	TS	Rd %
2%, 5min, 25°C	765.79	1.28	765.47	1.32	730.80	5.79	716.38	7.69
2%,10min, 25°C	753.45	2.88	759.88	2.05	725.92	6.42	711.49	8.28
2%, 2min, 37°C	767.11	1.10	760.88	1.91	740.34	4.56	725.91	6.42
2%, 5min, 37°C	763.70	1.55	759.73	2.06	718.97	7.314	707.44	8.80
2%,10min, 37°C	748.9	3.45	753.69	2.84	715.07	7.82	700.65	9.68
3%,2min, 25°C	758.79	2.18	756.60	2.46	686.48	11.5	680.71	12.24
3%,5min, 25°C	731.1	5.75	754.58	2.72	681.38	12.16	666.94	14.02
3%,10min, 25°C	738.04	4.85	742.22	4.315	680.39	12.28	658.75	15.08
3%, 2min, 37°C	746.95	3.71	750.92	3.19	717.35	7.52	558.62	27.98
3%,5min, 37°C	723.73	6.69	745.81	3.85	712.75	8.12	551.28	28.93
3%,10min, 37°C	717.53	7.5	737.47	4.93	701.98	9.5	514.39	33.68

Appendix 3: Calibration curves

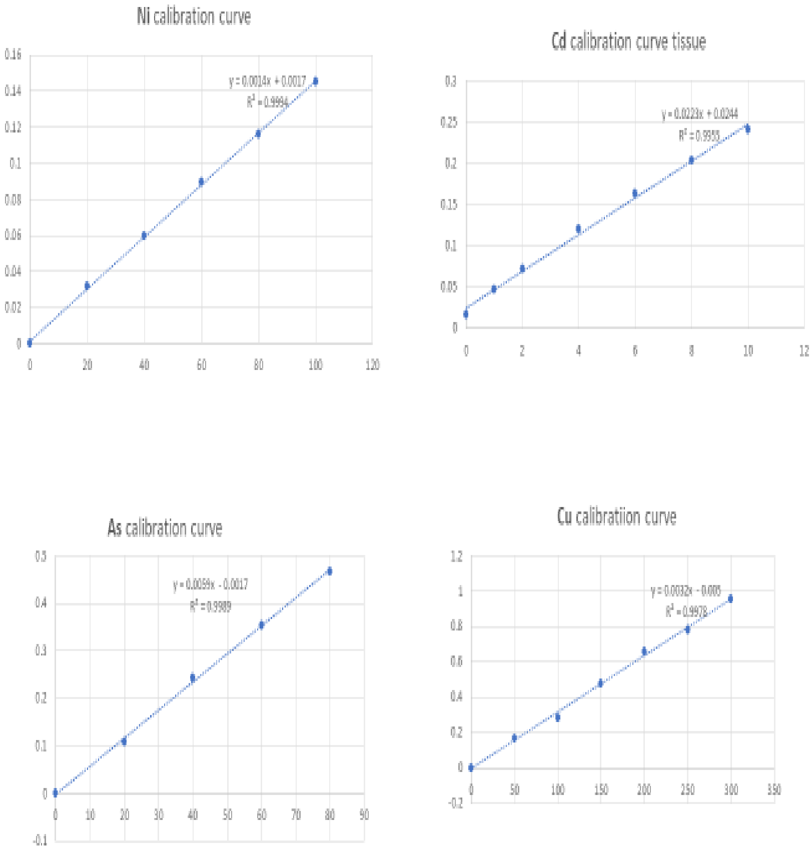

Figure C1: Calibration Curves of Ni, Cd, As and Cu

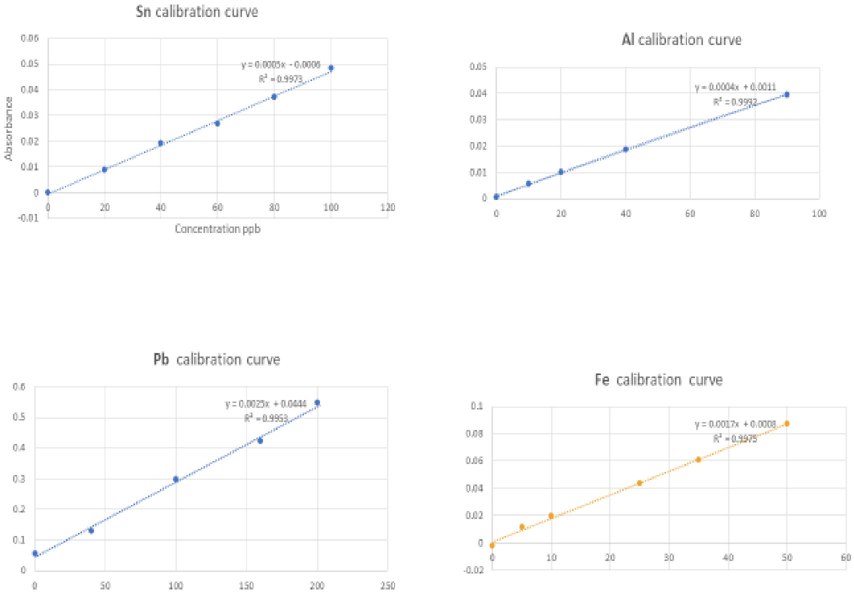

Figure C2: Calibration Curves of Sn, Al, Pb and Fe

Appendix 4: Conferences Participation and Honor Certificates

IFRC 2019
2nd International Food Research Conference
FOOD RESEARCH: BRIDGING THE GAP, TRANSFORMING THE FUTURE

Certificate of Participation

This is to certify

Ali, A.K., Zanariah, C.W., and Mohd, S.H.

have successfully participated as presenter for the poster entitled

"Determination of Heavy Metals Content and Risk Assessment of Imported Date Fruits Collected from Malaysian Stores"

in the

2nd INTERNATIONAL FOOD RESEARCH CONFERENCE 2019

on

27th – 29th AUGUST 2019

at

THE EVERLY HOTEL, PUTRAJAYA

Organized by

UPM UNIVERSITI PUTRA MALAYSIA

Prof. Dr. Jinap Selamat
Chairperson, 2nd IFRC 2019

Prof. Dr. Nazamid Saari
Dean, Faculty of Food Science and Technology

Figure D1: Attendance and Participation in IFRC 2019

CERTIFICATE OF PARTICIPATION

This certificate is presented to

ALI AHMEDA SALEH KALEFA

as

PRESENTER

for paper entitled

REMOVAL OF DIMETHOATE, CARBENDAZIM AND CHLORPYRIFOS RESIDUES FROM DATE FRUITS AND EVALUATION OF THE TREATMENTS EFFECT ON THE NUTRITION VALUE.

at the

Asia E-Conference on Social Sciences, Education and Technology 2021 (ACSET2021)

Kuala Lumpur, MALAYSIA
29 May 2021

Figure D2: Attendance and Participation in Asia E-Conference on Social Sciences Education and Technology 2021 (ACSET2021)

CERTIFICATE OF ACHIEVEMENT

This certificate is presented to

ALI AHMEDA SALEH KALEFA

in recognition of

BEST PAPER AWARD

for paper entitled

REMOVAL OF DIMETHOATE, CARBENDAZIM AND CHLORPYRIFOS RESIDUES FROM DATE FRUITS AND EVALUATION OF THE TREATMENTS EFFECT ON THE NUTRITION VALUE.

at the

Asia E-Conference on Social Sciences, Education and Technology 2021 (ACSET2021)

Kuala Lumpur, MALAYSIA
29 May 2021

CONF.ASIA

Ts. Dr. Zahari Abu Bakar
Director

ACSET

Figure D3: Certification of The Best Paper Award in Asia E-Conference on Social Sciences Education and Technology 2021 (ACSET2021)

Appendix 5: List of Publications

Ali, A.K, * Zanariah, C.W and Mohd, S.H. Determination of heavy metals content and risk assessment of imported date fruits collected from Malaysian stores. Poster presentation. 2nd International Food Research Conference (IFRC2019). 27/08/2019. UPM

Ali, Ahmeda. Kalefa, Zanariah, C. W and Mohd, Sukri.H (2021). Removal of Dimethoate, Carbendazim and Chlorpyrifos Residues from Date Fruits and Evaluation of the Treatments Effect on The Nutrition Value. Recorded Video Presentation, *Asia E-Conference on Social Sciences Education and Technology 2021 (ACSET2021)*. Full paper published in *Asian Journal of Fundamental and Applied Sciences,* 2(2), 85-102.

Ali, Ahmeda. K - Zanariah, C. W – Mohd, Sukri.H.(2020). Effect of washing on heavy metals contents on date fruits. *ARID International Journal for Science and Technology (AIJST), Vol (1),* ISBN/ISSN.2662.https://doi.org/10.36772/arid.aijst.2020.351