International Journal of Farm Sciences **6(3):** 49-54, 2016

Sensory characteristics and nutrient composition of Sev prepared by using seed powder of date fruit (*Phoenix dactylifera*)

VINITA* and DARSHAN PUNIA

Department of Foods and Nutrition, CCS Haryana Agriculture University Hisar 125004 Haryana, India

Email for correspondence: vinita2390bhadu@gmail.com

ABSTRACT

The present study was conducted to evaluate the suitability of date seed powder for preparation of Sev and to study sensory characteristics and nutrient composition of it. The powder of seeds obtained from four varieties of date fruit namely Hillawi, Khadrawi, Medjool and Shamran were used for preparation of Sev. Three types of Sev were prepared viz Type-I (using 5% seed powder), Type-II (using 10% seed powder) and Type-III (using 15% seed powder). It was observed that Sev prepared from seed powder of all the varieties was acceptable in terms of all the sensory characteristics however the scores were higher in Type-I as compared to Type-II and Type-III. The findings of the study showed that Sev prepared from seed powder of Khadrawi variety was highly acceptable. The nutrient composition revealed that there was a non-significant difference in the crude protein and fat and ash content of Sev prepared using seed powder of all the varieties. Crude fiber content was found to be highest in Sev of Hillawi variety (5.46%) followed by Medjool (5.31%), Khadrawi (5.15%), Shamran (4.79%) and control (2.93%). Sev prepared from seed powder of Khadrawi was highly acceptable and crude fibre was maximum in the Sev prepared from Hillawi variety.

Keywords: Sensory characteristics; nutrient composition; date seed powder; Sev

INTRODUCTION

Date palm is an important and one of the oldest trees cultivated by man (Beech and Shepherd 2001, Beech 2003). It has good tolerance to cold and dry–hot climates. Dare fruits have been found effective in constipation, inflammation, chemical induced toxicity, ulcer and hypertension. Its seeds constitute between 10 to 15 per cent of date fruit weight (Hussein et al 1998) and contain relatively high amount of protein (5.1 g/100 g) and fat (9.0 g/100 g) compared to date flesh. They are very rich source of dietary fiber (73.1 g/100 g), phenolics (3942 mg/100 g) and antioxidants (80400 µmol/100 g). The seeds have been used traditionally as the animal feed or grinded into smaller size and being roasted to turn them into

caffeine-free coffee substitute which has been commercialized by the Arabs in two types either plain or mixed with coffee (Rahman et al 2007, Al-Farsi and Lee 2011). At present date seeds are used mainly for animal feed. Utilization of such waste is very important as date seeds could potentially be considered as inexpensive source of dietary fiber and natural antioxidants. The aim of this study was to utilize date seed powder in preparation of Sev and to study sensory characteristics and nutrient composition of it.

MATERIAL and METHODS

Four varieties of date fruit namely Hillawi, Khadrawi, Medjool and Shamran were procured from the Department of Horticulture, College of Agriculture, CCS Haryana Agricultural University, Hisar, Haryana. Fruits were cleaned and washed under tap water to remove dirt and dust and deseeded. The seeds were coarsely ground using pestle mortar and to the fine powder in an electric grinder. The dried powders were stored in air tight containers at room temperature for further use.

Three types of Sev were prepared viz Type-I (using 5% seed powder), Type-II (using 10% seed powder) and Type-III (using 15% seed powder). For making Sev 95 g Bengal gram flour and 5 g date seed powder were sieved; salt (2 g), red chilli powder (2 g) and Garam Masala (1 g) were added and stiff dough was made using water. Sev was prepared by passing dough through Sev making machine directly in Karahi containing hot oil. Sev was fried on low flame till it turned to golden brown. The Sev prepared from seeds of four varieties of date fruit and control are given in Fig 1.

The developed products were evaluated organoleptically using a 9-point Hednoic scale prepared by a panel of ten judges selected from IC College of Home Science, CCS Haryana Agricultural University, Hisar, Haryana. Their proximate composition (moisture, crude protein, fat, crude fibre and ash) was also analysed using standard methods (Anon 2000). The results were statistically analysed using ANOVA.

RESULTS and DISCUSSION

Sensory evaluation

The mean scores of sensory characteristics of Sev are presented in Table 1. The mean sensory scores of Type-I (Hillawi) were 7.85, 7.50, 7.60 and 7.65 for appearance, aroma, taste and overall acceptability respectively which fell in the category of 'like very much'. The mean sensory scores of Type-II and Type III (Hillawi) fell in the category of 'like moderately' and 'like slightly'.

The mean sensory scores of Type-I (Khadrawi) were 8.10, 7.65, 7.65, 7.55, 7.60 and 7.66 for colour, appearance, aroma, texture, taste and overall acceptability

Fig 1. Sev prepared from seeds of four varieties of date fruit

respectively which fell in the category of 'like very much'. Similarly the mean scores of Type-II (Khadrawi) for colour, appearance, aroma and taste were 7.90, 7.55, 7.55 and 7.55 which fell in the category of 'like very much' whereas mean score for texture was 7.40 which fell in the category of 'like moderately'. The mean score of Type-II (Khadrawi) for overall acceptability was 7.56 which fell in the category of 'like very much'. The mean sensory scores of Type-III (Khadrawi) were 7.40, 6.80, 6.95, 6.55, 6.75, and 6.91 for colour, appearance, aroma, texture, taste and overall acceptability respectively which fell in the category of 'like moderately'.

The mean scores of Type-I (Medjool) for colour, appearance, aroma, texture, taste and overall acceptability were 8.10, 7.60, 7.65, 7.65, 7.75 and 7.69 respectively which fell in the category of 'like very much'. The mean sensory scores of Type-II (Medjool) were 7.00, 6.80, 6.85, 6.85 and 6.98 for appearance, aroma, texture, taste and overall acceptability respectively and fell in the category of 'like moderately' except colour (7.80) which was under 'like very much'. Type-III (Medjool) had 6.45, 6.20 and 6.20 mean scores for aroma, texture and taste respectively and fell in the category of 'like slightly'. The scores for appearance and overall acceptability were 6.60 and 6.73 respectively which fell in the category of 'like moderately'.

The mean scores of Type-I (Shamran) for aroma, texture, taste and overall acceptability were 7.40, 7.50, 7.30 and 7.45 respectively which fell in the category of 'like moderately' whereas mean score for colour and appearance were 8.05 and 7.70 respectively which fell in the

Table 1. Mean scores of sensory characteristics of Sev incorporating seed powder of date fruits

Product	Sensory characteristics score					
	Colour	Appearance	Aroma	Texture	Taste	Overall acceptability
Hillawi Sev						
Type-I (DSP:BGF::5:95)	8.10 ± 0.18	7.85 ± 0.22	7.50 ± 0.15	7.40 ± 0.15	7.60 ± 0.26	7.65 ± 0.18
Type-II (DSP:BGF::10:90)	7.40 ± 0.16	6.70 ± 0.17	6.80 ± 0.11	6.65 ± 0.13	6.65 ± 0.11	6.84 ± 0.08
Type-III (DSP:BGF::15:85)	7.00 ± 0.37	6.25 ± 0.21	6.15 ± 0.18	5.75 ± 0.17	5.800 ± 0.13	6.30 ± 0.22
$CD_{0.05}$	0.70	0.58	0.48	0.48	0.54	0.52
Khadrawi Sev						
Type-I (DSP:BGF::5:95)	8.10 ± 0.23	7.65 ± 0.35	7.65 ± 0.34	7.55 ± 0.22	7.60 ± 0.26	7.66 ± 0.30
Type-II (DSP:BGF::10:90)	7.90 ± 0.18	7.55 ± 0.22	7.55 ± 0.22	7.40 ± 0.31	7.55 ± 0.35	7.56 ± 0.20
Type-III (DSP:BGF::15:85)	7.40 ± 0.17	6.80 ± 0.20	6.95 ± 0.26	6.55 ± 0.22	6.75 ± 0.20	6.91 ± 0.15
$CD_{0.05}$	0.53	0.72	NS	0.66	0.69	0.60
Medjool Sev						
Type-I (DSP:BGF::5:95)	8.10 ± 0.07	7.60 ± 0.15	7.65 ± 0.13	7.65 ± 0.13	7.75 ± 0.17	7.69 ± 0.12
Type-II (DSP:BGF::10:90)	7.80 ± 0.13	7.00 ± 0.18	6.80 ± 0.17	6.85 ± 0.17	6.85 ± 0.15	6.98 ± 0.13
Type-III (DSP:BGF::15:85)	7.70 ± 0.15	6.60 ± 0.19	6.45 ± 0.23	6.20 ± 0.24	6.20 ± 0.25	6.73 ± 0.20
$CD_{0.05}$	0.34	0.49	0.49	0.51	0.53	0.42
Shamran Sev						
Type-I (DSP:BGF::5:95)	8.05 ± 0.19	7.70 ± 0.26	7.40 ± 0.22	7.50 ± 0.27	7.30 ± 0.21	7.45 ± 0.22
Type-II (DSP:BGF::10:90)	7.00 ± 0.33	7.00 ± 0.20	6.95 ± 0.20	6.85 ± 0.27	6.95 ± 0.29	6.89 ± 0.23
Type-III (DSP:BGF::15:85)	6.20 ± 0.39	5.90 ± 0.31	6.70 ± 0.36	5.90±0.41	6.00 ± 0.47	6.34 ± 0.32
$CD_{0.05}$	0.82	0.69	0.68	0.84	0.89	0.68
Control:BGF	8.30 ± 0.15	8.10 ± 0.21	7.90 ± 0.15	7.90 ± 0.15	7.90 ± 0.15	8.02 ± 0.15

Values are mean ± SE of ten independent determinations, DSP= Date seed powder, BGF= Bengal gram flour

category 'like very much'. The mean sensory scores of Type-II (Shamran) were 7.00, 7.00, 6.95, 6.85, 6.95 and 6.89 for colour, appearance, aroma, texture, taste and overall acceptability respectively which fell in the category of 'like moderately'. The mean scores of Type-III (Shamran) for colour, appearance, texture, taste and overall acceptability were 6.20, 5.90, 5.90, 6.00 and 6.34 respectively which fell in the category of 'likes lightly' whereas mean score for aroma was 6.70 which fell in the category 'like moderately'. In overall it was observed that supplemented Sev prepared from seed powder of all the varieties was acceptable in terms of all the sensory characteristics however the scores were higher in Type-I as compared to Type-II and Type-III. Ashoush and Gadallah (2011) reported that biscuits fortified with 20 per cent mango kernel powder showed highest score in overall acceptability as compared to other concentrations of mango kernel powder. Halaby et al (2014) reported that pan bread fortified with 15 per cent date seed powder showed the highest score in overall acceptability when compared to control pan bread and other concentrations of date seed powder.

Nutrient composition

Data presented in Table 2 indicate that there was non-significant difference observed in the moisture content of the Sev prepared using seed powder of different varieties of date fruit. It is evident from the data that there was a non-significant difference in the crude protein and fat content of Sev prepared using seed powder of all the varieties of date fruit. Crude fiber content was found to be highest in Sev of Hillawi variety (5.46%) followed by Medjool (5.31%), Khadrawi (5.15%), Shamran (4.79%) and control (2.93%). There was non-significant difference observed in the ash content of the Sev of different varieties.

Table 2. Proximate composition of date Sev incorporating seed powder of date

Variety	% content in Sev on dry weight basis				
	Moisture	Crude protein	Fat	Crude fiber	Ash
Control	4.04 ± 0.04	18.82 ± 0.43	20.14 ± 0.18	2.93 ± 0.09	0.66 ± 0.02
Hillawi	3.98 ± 0.01	17.20 ± 0.50	18.98 ± 0.38	5.46 ± 0.28	0.29 ± 0.01
Khadrawi	3.93 ± 0.02	17.02 ± 0.26	19.49 ± 0.33	5.15 ± 0.32	0.28 ± 0.02
Medjool	4.20 ± 0.06	16.02 ± 0.61	17.31 ± 0.28	5.31 ± 0.55	0.29 ± 0.03
Shamran	3.90 ± 0.01	16.88 ± 0.33	18.75 ± 0.27	4.79 ± 0.23	0.27 ± 0.01
$CD_{0.05}$	0.11	1.41	0.91	1.06	0.03

Values are mean ± SE of three independent determinations

CONCLUSION

It was observed that Sev prepared from seed powder of all the varieties was acceptable in terms of all the sensory characteristics however the scores were higher in Type-I as compared to Type-II and Type-III Sev. The study showed that Sev prepared from seed powder of Khadrawi variety was highly acceptable. Crude fiber content was highest in Sev of Hillawi variety.

REFERENCES

Al-Farsi MA and Lee CY 2011. Usage of date (*Phoenix Dactylifera* L) seeds in human health and animal feed. In: Nuts and seeds in health and disease prevention (VR Preedy, RR Watson and VB Patel eds), Elsevier, USA, pp 447-452.

Anonymous 2000. Official methods of analysis of AOAC International. Association of Official Analytical Chemist, Washington, DC.

Ashoush IS and Gadallah MGE 2011. Utilization of mango peels and seed kernels powders as sources of phytochemicals in biscuit. World Journal of Dairy and Food Science **6(1):** 35-42.

Beech M 2003.Archaeobotanical evidence for early date consumption in the Arabian Gulf. In: The date palm- from traditional resource to green wealth (ECSSR edn), The Emirates Center for Strategic Studies and Research, Abu Dhabi, pp 11-31.

Beech M and Shepherd E 2001. Archaeobotanical evidence for early date consumption on Dalma Island, United Arab Emirates. Antiquity **75:** 83-89.

Halaby MS, Farag MH and Gerges AH 2014. Potential effect of date pits fortified bread on diabetic rats. International Journal of Nutrition and Food Sciences **3(2):** 49-59.

Hussein AS, Alhadrami GA and Khalil YH 1998. The use of dates and date pit in broiler starter and finisher diets. Bioresource Technology **66:** 219-223.

Rahman MS, Kasapis S, Al–Kharusi NSZ, Al–Marhubi IM and Khan AJ 2007. Composition characteristics and thermal transition of date pits powders. Journal of Food Engineering **80(1):** 1-10.

Received: 29.2.2016 ***Accepted: 14.5.2016***