



E-ISSN: 2320-7078

P-ISSN: 2349-6800

www.entomoljournal.com

JEZS 2020; 8(5): 990-993

© 2020 JEZS

Received: 13-07-2020

Accepted: 19-08-2020

A Harikrishnaa

Vth BVSc & A.H., College of
Veterinary Science, SVVU,
Proddatur, Andhra Pradesh,
India

K Vidyadhara Reddy DVG

Vth BVSc & A.H., College of
Veterinary Science, SVVU,
Proddatur, Andhra Pradesh,
India

R Sai Dilip Gupta

Department of Livestock
Products Technology, CVSc,
Proddatur, SVVU, Andhra
Pradesh, India

D Maheswara Reddy

Department of Livestock
Products Technology, CVSc,
Proddatur, SVVU, Andhra
Pradesh, India

N Ranga Rao

Vth BVSc & A.H., College of
Veterinary Science, SVVU,
Proddatur, Andhra Pradesh,
India

K Yogeswari

Department of Livestock
Products Technology, CVSc,
Proddatur, SVVU, Andhra
Pradesh, India

Corresponding Author:

D Maheswara Reddy

Department of Livestock
Products Technology, CVSc,
Proddatur, SVVU, Andhra
Pradesh, India

Standardization and comparative study of chevon cutlets incorporated with shredded potato and radish

A Harikrishnaa, K Vidyadhara Reddy DVG, R Sai Dilip Gupta, D Maheswara Reddy, N Ranga Rao and K Yogeswari

DOI: <https://doi.org/10.22271/j.ento.2020.v8.i5n.7646>

Abstract

The present study was intended to standardize the recipe and procedure of chevon cutlets and to compare the effect of potato and radish addition in the product. Meat cutlets are ready to eat, crispy snack item and widely used in the breakfast. Chevon cutlets were prepared with cooked meat instead of minced meat with shredded potato and radish in 1:1 ratio (one part meat and one part potato/radish). Results revealed that chevon cutlets prepared with radish recorded significantly ($P \leq 0.05$) lower PH, lower cooking loss, higher % of bread pickup, higher moisture, crude fiber and lower crude fat. Chevon cutlets prepared with incorporation of radish paste recorded significantly ($P \leq 0.05$) higher juiciness and tenderness when compared to potato. Moreover, mouth coating is also well appreciated in radish incorporated cutlets. Hence, there is scope for inclusion of radish in cutlets by replacing the potato. Thus, good quality chevon cutlets could be prepared by incorporating radish paste instead of shredded potato.

Keywords: Chevon cutlets, shredded potato, radish, quality characteristics

Introduction

Meat cutlets are prepared to eat advantageous meat items that are exceptionally well known all through the world and generally utilized in the morning meal. Cutlets are flat croquette of meat, shredded potato, condiments, spices and often coated with rusk crumbs. The nutritive worth and tangible nature of the cutlets can be additionally upgraded by use of goat meat. Being less in cholesterol and fats and having minimum total calories, high potassium and low sodium the chevon cutlets will prove a better option for the non-vegetarian consumers. The ready to eat / ready to prepare (RTE/ RTP) food provided a reasonable choice to customers in the present occupied way of life. The goat meat is very popular and widely favored by the consumers in India. Chevon is a red meat that is often viewed as potential competitor to beef and mutton. It is almost universally acceptable and free from culture, tradition, social and economic conditions^[1].

Incorporation of vegetables in meat products would serve as substitute for non-meat ingredients that will bring substantial cost reduction and also improve the nutritive value. The potato (*Solanum tuberosum*) is widely used in the development of food products and preparation of different variety of crispy food products including meat products^[2]. Radish is a root plant related to mustard family and is one of the richest sources of iron and calcium among all common vegetables. It contains flavonoids such as kaempferol glycosides, peroxidases and antioxidants. The studies reported that radish extract showed antimicrobial and antimutagenic effects^[3]. Thus, the present study was envisaged to standardize the recipe and to compare the effect of potato and radish addition in chevon cutlets.

Materials and Methods

Chevon cutlets were prepared with cooked meat instead of minced meat with shredded potato and radish in 1:1 ratio (1-part meat and 1-part potato/radish) and subjected them to quality analysis i.e. Physio-chemical characteristics like cooking loss, % bread pick up, pH, proximate composition and sensory evaluation. The cooking loss was recorded by noting the weight of cutlets before and after frying.

$$\text{Cooking loss (\%)} = \frac{\text{Weight of raw enrobed cutlets} - \text{Weight of fried enrobed cutlets}}{\text{Weight of raw enrobed cutlets}} \times 100$$

The rusk pickup percent was determined as per formula; noting the weights of cutlets before and after rusk pick up. [4]

$$\text{Rusk powder pick up (\%)} = \frac{\text{Weight of cutlet after dusting} - \text{weight of cutlet before dusting}}{\text{Weight of cutlet before dusting}} \times 100$$

The pH of fried chevon meat cutlets was determined as per

procedure [5]. The proximate analysis was conducted as per the procedures [6]. Sensory evaluation of the product was carried out on a 9-point hedonic scale. Sensory evaluation panel consisting of nine members including faculty of CVSc, Proddatur, SVVU evaluated the cutlets. Coded samples for sensory evaluation were prepared and served warm to the panelists. Water was provided for oral rinsing between the samples. Each experiment was replicated three times and the data generated was analyzed using Two sample T-test [7] to determine significant differences ($P \leq 0.05$) between treatments.

Methodology: Preparation of Chevron cutlets with Potato /Radish was depicted in Figure.1.

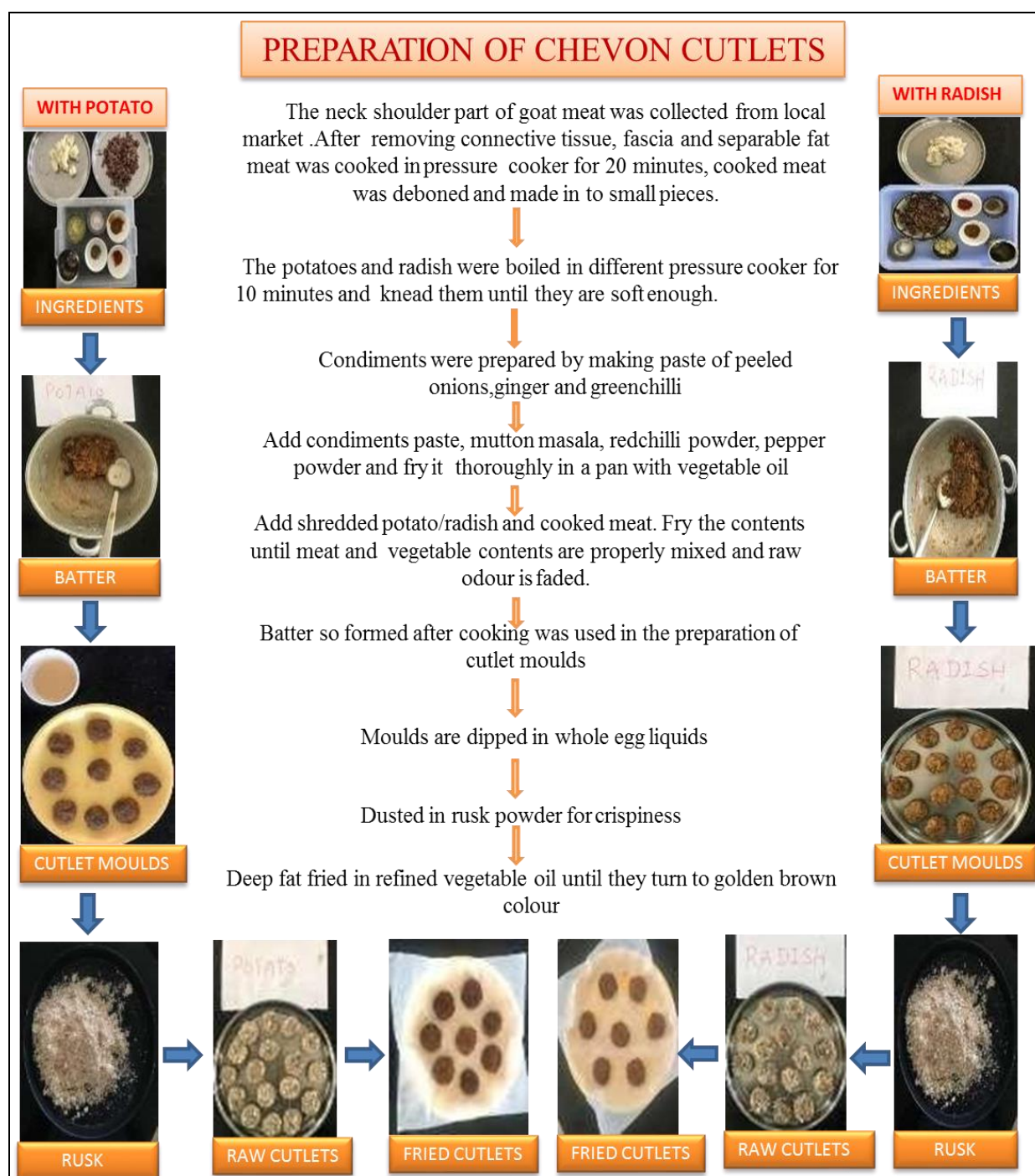


Fig 1: Preparation of Chevron cutlets with Potato /Radish.

Table 1: Table showing the ingredients required for preparing chevon cutlets

Ingredients (%)	T1 (Potato)	T2 (Radish)
Cooked Meat	100	100
Potato	100	0
Radish	0	100
Onions	40	40
Green chilly	4.5	4.5
Red chili powder	1.0	1.0
Pepper	0.7	0.7
Ginger	3.5	3.5
Spice mix (Everest Mutton masala)	2.5	2.5
Salt	3.5	3.5
Oil	20	20

Results and Discussion

The results obtained in the present study were depicted in the Table. 2.

Table 2: Effect of incorporation of shredded Potato (T1) and Radish (T2) on the physio-chemical and organoleptic properties of chevon cutlets (Mean \pm S. E)

Parameters	Potato (T1)	Radish(T2)
Cooking loss %	3.615 \pm 0.69 ^B	2.2101 \pm 0.52 ^A
Bread pick up %	9.38 \pm 0.47 ^A	11.5666 \pm 0.75 ^B
PH	6.26 \pm 0.003 ^B	5.93 \pm 0.0029 ^A
Moisture %	60.46 \pm 0.01 ^A	65.94 \pm 0.01 ^B
Crude Protein %	17.03 \pm 0.007 ^B	13.57 \pm 0.001 ^A
Crude Fat %	17.78 \pm 0.007 ^B	14.03 \pm 0.008 ^A
Crude fiber %	2.06 ^A \pm 0.02 ^A	2.43 ^B \pm 0.03 ^B
Total Ash %	2.24 \pm 0.01 ^A	2.22 \pm 0.008 ^A
Appearance	7.81 \pm 0.16 ^B	7.44 \pm 0.13 ^A
Flavor	7.68 \pm 0.06 ^B	7.25 \pm 0.08 ^A
Juiciness	7.13 \pm 0.10 ^A	7.89 \pm 0.20 ^B
Tenderness	7.09 \pm 0.09 ^A	7.72 \pm 0.07 ^B
Mouth coating	7.17 \pm 0.14 ^A	7.65 \pm 0.04 ^B
Overall acceptability	7.32 \pm 0.08 ^A	7.61 \pm 0.06 ^B

($P < 0.05$); Means bearing at least one common superscript in the same row do not differ significantly.

Cooking loss: Chevon cutlets prepared with Radish (T₂) recorded significantly ($P \leq 0.05$) lower cooking loss when compared to Potato (T₁) which could be attributed to the higher moisture retention during cooking by radish fiber. The lower cooking loss in radish added cutlets in the present study well corroborated [8, 9].

Bread Pick Up %: Chevon cutlets prepared with Radish (T₂) recorded significantly ($P \leq 0.05$) higher % bread pick up when compared to Potato (T₁) which might be due to increase in moisture content in the product which facilitates the large pick up of the rusk materials [10, 11].

PH: Chevon cutlets prepared with radish recorded significantly ($P \leq 0.05$) lower pH when compared to potato which might be due to lower pH and slight acidic nature of radish paste and comparatively higher pH of potato paste. The results obtained in the study were in accordance with the reports of carrot incorporated chicken sausages [12] and in turkey sausages [13].

Proximate composition

Moisture: Chevon cutlets prepared with radish recorded significantly ($P \leq 0.05$) higher % moisture than potato added cutlets. This might be due to relatively higher moisture

content within the radish, higher water retention capability of those fibers, the soluble component of which mainly is pectin that will represent up to 30% of the fibers concentrate [11]. These results were in agreement with the chicken nuggets [14], vegetable incorporated meat products [12] and in turkey sausages [13].

Crude protein: Chevon cutlets prepared with potato recorded significantly ($P \leq 0.05$) higher % crude protein than radish added cutlets which might be due to high % protein in potato than radish.

Crude fat: Chevon cutlets prepared with radish recorded significantly ($P \leq 0.05$) lower % crude fat than potato added cutlets. Fat and moisture are two components which are firmly related in meat items and if fat substance is low, the moisture content is probably going to be high [15]. Similar results were also reported in chicken nuggets [14], vegetable incorporated meat products [12] and in turkey sausages [13].

Crude fiber: Chevon cutlets prepared with radish recorded significantly ($P \leq 0.05$) higher % crude fiber than potato added cutlets which might be due to high fiber level in radish. This was found in agreement with the results of chicken nuggets [14], chicken sausages [12] and in turkey sausages [13].

Total ash: No significant difference was observed in total ash content of the both treatments.

Sensory Evaluation: Chevon cutlets prepared with radish (T₂) recorded significantly ($P \leq 0.05$) higher juiciness, tenderness, mouth coating and overall acceptability when compared to T₁ (Potato) which might be due to high moisture retention and high rusk pick up in radish however potato added cutlets recorded significantly ($P \leq 0.05$) high scores for appearance and flavor when compared to radish added cutlets which might be due to good appeal and dominant pleasant flavor of potato than radish. [11] [9] and also in turkey sausages [13].

Conclusion

The results of this study revealed that chevon cutlets prepared with radish recorded significantly ($P \leq 0.05$) lower PH, lower cooking loss, higher % of bread pickup, higher moisture, crude fiber, lower crude fat, higher juiciness, tenderness, mouth coating and overall acceptability when compared to potato. Hence, good quality chevon cutlets could be prepared by incorporating radish paste instead of regularly used shredded potato.

Acknowledgement

We are very much thankful to the faculty of department of LPT, College of Veterinary Science, SVVU, Proddatur for guiding us in successful completion of research work.

References

1. Verma AK, Singh VP, Pathak V. Effect of jackfruit supplement and ageing on the Physico-chemical, texture and sensory characteristics of Chevon patties: Journal of Applied Animal Research. 2014; 43(3):247-255.
2. Bakal SB, Gedam KH, Gyanendra Prakash Sharma. Drying characteristics and kinetics of fluidized bed dried potato. Journal of agriculture and food science. 2010; 19:127-135.

3. Esaki H, Onozaki H. Antimicrobial action of pungent principles in radish root. *Journal of Japanese Society of Food and Nutrition*. 1982; 35:207-211.
4. Hsia HY, Smith DM, Steffe JF. Rheological properties and adhesion characteristics of flour based batters for chicken nuggets as affected by three hydrocolloids: *Journal of Food Science*. 1992; 57(1):16-8.
5. Keller JE, Skelley GC, Acton JC. Effect of meat particle size and casing diameter on summer sausage properties during drying. *Journal of Milk and Food Technology*. 1974; 37(2):101-106.
6. AOAC. *Official Method of Analysis*. 16th edition. Association of Official Analytical Chemists, Washington, DC. 1995.
7. Snedecor GW, Cochran WG. *Statistical Methods*, 1st edition. Ch.12, 13. East-West Press, New-Delhi, 1994.
8. Huber W, Vosgen W, Le Mintier Y. Carrot fiber as opportunity-Natural carrot fiber can be used for dietary fiber enrichment, water-binding and as fat substitute in sausages: *Feischwirtschaft International*. 2002; 4:12-5.
9. Mendiratta SK, Shinde AT and Mane BG. Effect of added vegetable (carrot, radish and capsicum) as functional ingredients in mutton nuggets. *Journal of Meat Science and Technology*. 2013; 1(2):71-76.
10. Essien. *Production of sausage. Sausage manufacture. principle and practices*: Wood head Publishing Limited, Cambridge, England, 2000, 44.
11. Singh PK, Sunil Kumar, Pavan Kumar, Bhat ZF. Standardization of Shredded Potato and Added Water Levels in the Development of Chevron Cutlets: *Journal of Animal Research*. 2014; 4(2):251-261, DOI Number: 10.5958/2277-940X.2014.00012.6.
12. Zargar FA, Kumar S, Bhat ZF, Kumar P. Effect of incorporation of carrot on the quality characteristics of chicken sausages. *Indian Journal of Poultry Science*. 2017; 52(1):91-95.
13. Naveen Kumar M, Shasi Kumar M, Bhaskar Reddy GV, Krishnaiah N, Anitha Reddy, Maheswara Reddy D. Process Optimization of Turkey Meat Sausages by using Raw Radish Paste: *International journal of Current Microbiology and Applied Sciences*. 2020; 9(7):1815-1821.
14. Kaur M, Kumar A, Kumar S, Hakeem HR, Gupta S. Effect of carrot on quality characteristics of chicken nuggets: *Indian Veterinary Journal*. 2015; 92(4):44-47.
15. Brauer MC. Fat reduced frankfurter-type sausage. A technology for prevention too firm and rubbery a bite: *Fleischwirtschaft*. 1993; 73:64-65.
16. Hedrick HB, Aderle ED, Forrest JC, Judge MD and Merkel RA. *Principles of meat science*: Kendall/Hunt publishing co, Iowa, 1994, 144-150.