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SENSORY EVALUATION AND SALE PRICE OF PANEER SOLD IN WARDHA CITY

Shreya S. Gawande[1], V. G. Atkare[2] and S. D. Temak[3]

ABSTRACT

Samples of paneer from Wardha city were examined during the course of investigation. In all 60 samples were collected from four different regions *viz*., east, west, north and south region of Wardha city. 15 samples from each group were analyzed during three fortnights. Sensory scores of colour and appearance were found to be 6.82 (T_1, East), 6.92 (T_2, West), 8.03 (T_3, North) and 8.20 (T_4, South), body and texture found to be 6.77 (T_1, East), 6.89 (T_2, West), 8.30 (T_3, North) and 8.55 (T_4, South), flavour score found to be 6.66 (T_1, East), 6.84 (T_2, West), 8.08 (T_3, North) and 8.42 (T_4, South) and scores overall acceptability were found to be 6.28 (T_1, East), 6.99 (T_2, West, 8.02 (T_3, North) and 8.57 (T_4, South) in east, west, north and south region respectively. The sensory profile of paneer produced and marketed in south (T_4) region of Wardha city was better and scored highest (8.57) sensory score. It was inferred that, sensory quality of south region paneer was good than north, west and east region paneer which were fair in quality.

The sale price of paneer in Wardha city from south region was found to be Rs.360 kg^{-1} which was highest amongst all regions while, the lowest cost of paneer was found in west and east regions i.e. Rs. 300 kg^{-1}. The cost of paneer obtained from north region was found to be Rs. 320 kg^{-1}. The difference in sale price kg^{-1} of paneer sold in Wardha city might be due to the quality parameters.

(Keywords:Paneer, sensory attributes, sale price and cost)

INTRODUCTION

Paneer, a popular indigenous dairy product of India, is similar to an unripened variety of soft cheese which is used in the preparation of a variety of culinary dishes and snacks. It is obtained by heat and acid coagulation of milk, entrapping almost all the fat, casein complexed with denatured whey proteins and a portion of salts and lactose. Paneer is marble white in appearance, having firm, cohesive and spongy body with a close-knit texture and a sweetish-acidic-nutty flavour (Kumar *et al.,* 2014). 100 grams of Paneer gives 18 grams of protein. People who undergo weight training in the gym need a large amount of protein in their body. They are recommended to include paneer in their daily diet. It is also a rich source of selenium and potassium. Potassium benefits in curbing memory loss and selenium is useful in infertility treatments. Paneer also has calcium. It helps in building stronger teeth and bones (Anonymous, 2020).

Paneer is used in a variety of forms *viz*., base for variety of culinary dishes, ingredient for various vegetable dishes and snacks etc. The production of Paneer is now spreading throughout the world. The ability of Paneer to be deep fried is one feature that has led to its wider acceptance and a favourite for making snacks, pakoras or fried Paneer chunks (Aneja, 2007).

Due to high nutritive value, demand for paneer in Wardha city has raised therefore, preparation and marketing of the panner is done on large scale by retailers, halwais etc.Therefore, the present paper planned to study sensory evaluation and sale price of paneer marketed in Wardha city.

MATERIALS AND METHODS

Evaluation of sensory qualities of paneer samples was carried out in the laboratory of Animal Husbandry and Dairy Science section, College of Agriculture, Nagpur during year 2021-2022. In all 60 samples of paneer were examined during the course of investigation which were collected from different regions *viz*., east, west, north and south region. From each region, 15 samples were collected and analyzed during three fortnights. These paneer samples were collected by adopting stratified randomization technique.The quality of paneer was judged by sensory evaluation in respect of colour and appearance, body and texture, flavour and overall acceptability by offering sample, to panel of 5 judges in

1. P.G. Student, Animal Husbandry and Dairy Science Section, College of Agriculture, Nagpur
2. Professor, Animal Husbandry and Dairy Science Section, College of Agriculture, Nagpur
3. Ph. D. Scholar, Deptt. of Fruit Science, Dr. PDKV, Akola

each trial separately with the help of 9 point hedonic scale by Nelson and Trout (1964).

RESULTS AND DISCUSSION

Sensory evaluation of paneer

The data pertaining average scores of colour and appearance, body and texture, flavour, overall acceptability and sale price $kg^{-1}$of paneer sold in Wardha city are presented inTable 1.

Table 1. Table for sensory evaluation of paneer

Treatments	Colour and appearance (out of 9)	Body and texture (out of 9)	Flavour (out of 9)	Overall acceptability (out of 9)	Cost kg^{-1} (Rs.)
T_1 East	6.82	6.77	6.66	6.28	300
T_2 West	6.92	6.89	6.84	6.99	300
T_3 North	8.03	8.30	8.08	8.02	320
T_4 South	8.20	8.55	8.42	8.57	360
SE(m)±	0.07	0.09	0.11	0.26	—
CD at 5 %	0.21	0.27	0.33	0.77	—

Values with different super script differ significantly (P<0.05)

Colour and appearance scores

It is inferred from Table 1 that, the average score of colour and appearance of Wardha city paneer ranged from 6.82 to 8.20.The average score of colour and appearance of east (T_1), west (T_2), north (T_3) and south (T_4) region paneer of Wardha city were found to be (T_1) 6.82, (T_2) 6.92, (T_3) 8.03 and (T_4) 8.20, respectively. The average scores obtained for colour and appearance of Wardha city differed significantly. South (T_4) paneer samples was found to be superior over rest of the regions i.e., east (T•), west (T_2) and north (T_3). respectively, with white colour in respect to average colour and appearance score.

Bhoyar *et al.* (2020) reported on sensory evaluation and overall acceptability of marketed paneer. They found that, the average score of colour and appearance of east (T_1), west (T_2), north (T_3) and south (T_4) region of Gondia city were 6.56, 7.02, 7.68 and 8.08, respectively.

Body and texture

It is inferred from Table 1 that, the average score of body and texture of Wardha city paneer ranged from 6.77 to 8.55. The average score of body and texture of east (T•). west (T_2), north (T_3) and south (T_4) region paneer of Wardha city were found to be (T_1) 6.77, (T_2) 6.89, (T_3) 8.30 and (T_4) 8.55, respectively. The maximum score (8.55) was recorded in south (T_4) region paneer while, minimum (6.77) in east (T•) paneer.

Reeta Kumar and Kumbhar (2012) studied on sensory and textural properties of paneer using edible coating. They found colour and appearance, flavour, body and texture and overall acceptability, adhesiveness of paneer in the range of 6.8 to 8.2. The combination of ingredients level of whey protein concentrate, glycerol, potassium sorbate and nisin were 10, 3, 0.7 and 5 ppm, respectively.

Singh *et al.* (2015) prepared low fat paneer from skim milk powder to find out the nutritive value as well as sensory acceptability. Sensory evaluation of the prepared paneer was carried out using score card. The highest average score for overall acceptability of paneer (7.70) was recorded in T_1 (standardized milk with 3% fat and 8.5%SNF) followed by T_0 (standardized milk with 2.5% fat and 8.5% SNF) 7.37, T_2 (standardized milk with 2.5% fat and 8.5%SNF) 7.20, T_3 (standardized milk with 2% fat and 8.5%SNF) 6.66 and T_4 (standardized milk with 1.5% fat and 8.5%SNF) 6.25. Almost the different combinations used of milk in a ratio of 2.5 (Fat): 8.5 (SNF), T_2 treatment was the best in term of flavour, taste, body, texture and overall acceptability.

These results are more or less similar with the findings of present study.

Flavour

The average scores obtained for flavours of paneer sold in Wardha city ranged from 6.66 to 8.42 out of 9(Table 1). The average values of east (T_1), west (T_2), north (T_3) and south (T_4) region paneer recorded as 6.66, 6.84, 8.08 and 8.42, respectively. These differences were found to significant for flavour score.Maximum average scores (8.42) were contributed by south (T_4) region paneer.

Bhoyar *et al.* (2020) also reported on sensory evaluation and overall acceptability of marketed paneer. They found the average score of flavour of east (T_1), west (T_2), north (T_3) and south (T_4) region of Gondia city were 6.46, 7.08, 7.68 and 8.28, respectively.

Overall acceptability

It is inferred from Table 1 that, the average scores obtained for overall acceptability of paneer sold in Wardha city ranged from 6.28 to 8.57 out of 9. The average values of east (T_1), west (T_2), north (T_3) and south (T_4) region paneer recorded 6.28, 6.99, 8.02 and 8.57 respectively. These differences were found to significant for overall acceptability score. Maximum average scores (8.57) were contributed by south (T_4) region paneer whereas, minimum (6.28) by east (T_1) paneer.

Bhoyar *et al.* (2020) reported overall acceptability score of marketed paneer in Gondia city in the range of 6.48 to 8.19 out of 9. However, mean values of samples sold in east(T_1), west (T_2), north(T_3) and south(T_4)region contributed toT_1 (6.48),T_2 (7.09), T_3 (7.60) and T_4(8.19) respectively.

Sale price of paneer

Data regarding prevailing sale price $kg^{-1}$of paneer sold in Wardha city of various regions (Rs.) are given in Table 1.

The sale price of paneer obtained from south region was found to be (Rs.360kg^{-1}) which was highest among all regions. The sale price obtained north it was Rs.320 kg^{-1},

while the lowest cost of paneer was found in east and west (Rs.300 kg^{-1}) respectively. The difference in sale price $kg^{-1}$of paneer sold in Wardha city might be due to the quality parameters. Bhoyar *et al.* (2020) reported sale price of paneer in Gondia city was in the range of 280-320 Rs. kg^{-1}.

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