



ISSN (E): 2277- 7695

ISSN (P): 2349-8242

NAAS Rating: 5.23

TPI 2021; 10(6): 242-248

© 2021 TPI

www.thepharmajournal.com

Received: 10-03-2021

Accepted: 23-04-2021

Varnam Radhika

Ph.D., Student, Department of RMCS, College of Community Science, Professor Jayashankar Telangana State Agricultural University, Hyderabad, Telangana, India

Velivelli Vijaya Lakshmi

Professor and University Head, Department of RMCS, College of Community Science, Professor Jayashankar Telangana State Agricultural University, Hyderabad, Telangana, India

Corresponding Author:

Varnam Radhika

Ph.D., Student, Department of RMCS, College of Community Science, Professor Jayashankar Telangana State Agricultural University, Hyderabad, Telangana, India

Evaluation of different types of vegetable chopping boards

Varnam Radhika and Velivelli Vijaya Lakshmi

Abstract

Vegetable chopping board is the most basic and important tool in the kitchen. Almost every homemaker is using either wooden or plastic chopping board to cut the vegetables, fruits, meat etc. Different types and unique design vegetable chopping boards are available in the markets and also in online shopping websites like flip kart, amazon, India MART etc. So, people are used to buy through online and offline source. An attempt was made to analyse the features of different types of vegetable chopping boards available in the market. Secondary sources of data were used to analyse the features of the chopping boards.

Keywords: Vegetable chopping board, features, defects, materials

Introduction

Currently, food preparation chopping boards are accessible in the market as a plenty of varieties by using different materials like types of woods, acrylic, bamboo, polymers, stainless steel and glass etc. Though, in the early years of 1970s, wood was the dominating material (Ak *et. al.* 1994) [2].

Gaststatten *et al.* (2010) [3], stated that tools and contact surfaces made up of wood, cutting boards from plastic, they should be clean and should need a smooth surface without any grooves. They should be kept in good conditions. Wood surfaces are not appropriate for all the purposes, because of its porous surface. The present rules, regulations and standards of cutting boards are based on the conjecture that wooden cutting boards are difficult to clean.

European Community (2004) [5] defined the properties of food contact materials like chopping boards. Generally chopping boards must be very smooth, free of hollows, grooves and cracks, should be easy to clean and suitable to be disinfected.

Abrishami *et al.* (1994) [1] conducted an experimental study on bacterial adherence and viability on cutting board surfaces. The observance and capability of *Escherichia coli* inoculated onto the surfaces of plastic cutting boards new and used wood cutting boards were evaluated. Results and microscopic pictures of the experiments revealed that bacteria that adhered to plastic surfaces were more easily removed by low-temperature washing than were cells that adhered to wood surfaces. Bacteria adhering to wood surfaces resided within the structural and vegetative elements of the wood's xylem tissues were viable. Wood was more retaining than plastic. Saturation of the inoculum liquid promoted cell adherence to the wood matrix and conditioning of wood with water before inoculation interfered with bacterial adherence.

Lucke and Skowyrska (2015) [6] investigated on disinfected aspects of using wooden and plastic cutting boards, evaluated in laboratory and small cooking units. They conducted two experiments one in home kitchen and another one in laboratory kitchen for all three types of cutting boards (maple, beech and plastic). Results revealed that the experiments performed both in the laboratory kitchen (with three different cutting boards) and in the bistro (with maple board) indicated no significant differences in growing microbiological counts on both plastic and wooden cutting boards after thorough cleaning. The complete hygienic status of the inspected boards was good and categorized as suitable. They revealed that there is no proof for an increased microbiological risk when properly maintained wooden cutting boards were used at home or in any cooking units. However, cleaning procedures should be always adjusted according to the material of the boards. Hence, the instructions of the manufacturers on cleaning and maintenance should be followed, to ensure optimal performance and safety of the food preparation.

Boursillon and Riethmuller (2007) [4] studied on the safety of wooden cutting boards. Main aim of the study was to compare the aptitude of pine as a softwood and beech as a hardwood, regarding their different retention and antimicrobial performances as compared to polyethylene. For all experiments wood and control blocks or chippings were sharp with bacteria and tested at set intervals for bacterial counts using standard procedures. Results revealed that wood performed good than polyethylene. Polyethylene was not as easy to clean. The problematic cleaning capabilities of wood were rewarded by its open structure. Pine utilized antimicrobial abilities faster than beech and showed better performance than both beech and polyethylene. Hence, to know about the different vegetable chopping boards available in the market, the present study has been taken up to study the features of different vegetable chopping boards available in the market.

Methodology

Secondary sources of information were used to evaluate the features of vegetable chopping boards available in the market.

The chopping boards used for the evaluation were brought from different online sources i.e. online shopping websites and from the articles. A total of 20 different vegetable chopping boards were selected for the evaluation. Most popular vegetable chopping boards with unique design features, made up of different materials like wood, bamboo, plastic, steel etc. were included in this study.

The selected chopping boards were analyzed according to their features, design, material used, size, durability, quality and the price.




Results and Discussion


Results of the current study were discussed below in detail







Vegetable chopping boards available in the market


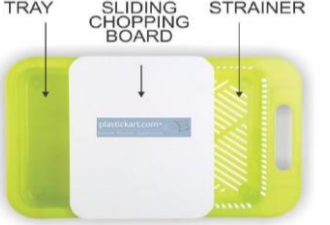



When designing or making changes in vegetable chopping board, it is important to first understand what type of vegetable chopping boards are available in the market which are more durable, high quality, comfortable to use, with best price etc. Different vegetable chopping boards and their salient features were presented in Table 1.

Table 1: Description of vegetable chopping boards

Name of the vegetable chopping board	Image	Salient features	Defects
1. Bamboo cutting board with trays		<ul style="list-style-type: none"> ✓ It has removable trays to keep the chopped vegetables. ✓ It is suitable for the modern kitchens. ✓ Look more luxurious ✓ Trays will be used to store the food in refrigerator ✓ It is durable and easy to clean. ✓ 4PCS Rubber anti slip ✓ Smooth round corners 	<ul style="list-style-type: none"> ➤ There is no separate storage facility for knives, peelers etc. ➤ Handle was not provided (Small groove was provided to hold but it is not sufficient). ➤ Storage boxes can break easily. ➤ Costly
2. Wood chopping board with vegetable chopper (Tredy Foods)		<ul style="list-style-type: none"> ✓ It is very efficient ✓ The cutter has a sharp blade with helps in cutting any vegetables or fruits quickly. ✓ It is easy to maintain ✓ It is easy to clean ✓ Eco friendly 	<ul style="list-style-type: none"> ➤ Handle was not provided to hold the board
3. Zureni Bamboo Reversible Wooden Bamboo Cutting Board		<ul style="list-style-type: none"> ✓ High quality bamboo non slip surface ✓ Elegant presentation piece for kitchen ✓ Knife Friendly Surface won't dull and damage the blade ✓ Soft, straight and Less porous ✓ Thick, Sturdy and Durable ✓ Antimicrobial and antibacterial Property ✓ Eco friendly ✓ Finished with food-safe mineral oil. 	<ul style="list-style-type: none"> ➤ Very thin

<p>4. Elementary Beige Solid Wooden Chopping Board</p>		<ul style="list-style-type: none"> ✓ Luxurious look to kitchen ✓ Suitable for formal events to everyday home use and add charm to kitchen. ✓ Highly durable ✓ High quality ✓ Easy to use ✓ Water resistant 	<ul style="list-style-type: none"> ➤ Small and thin ➤ When juicy vegetables or fruits are cut, will flow on to the sides
<p>5. AOOMI Premium Teak Wood Vegetable Cutting Board</p>		<ul style="list-style-type: none"> ✓ Eco friendly ✓ Very stylish which is made up of A-Grade Teak wood ✓ Non-toxic ✓ Non- absorbent ✓ Stain Resistant ✓ Reversible ✓ Non-slip 	<ul style="list-style-type: none"> ➤ Requires more space to store it when not in use
<p>6. Premium teak wood chopping board</p>		<ul style="list-style-type: none"> ✓ This Natural teak wood board gives aesthetic look to the kitchen. ✓ Usable on both sides ✓ Wall hanging handle for easy hanging ✓ Highly durable ✓ High quality ✓ Easy to use and maintain ✓ Eco friendly 	<ul style="list-style-type: none"> ➤ Less working place ➤ There is no proper handle to hold the board
<p>7. Safal Beige Pure Natural Wooden Contemporary Chopping Board</p>		<ul style="list-style-type: none"> ✓ Beautiful, sturdy and hand-carved wooden chopping board ✓ Water resistant ✓ Easy to use ✓ Easy to maintain ✓ Eco friendly ✓ High quality ✓ Protect your knives and is a very good non-reactive 	<ul style="list-style-type: none"> ➤ Less working place ➤ Thin
<p>8. Classical Youth Butterfly-shaped Chopping Board</p>		<ul style="list-style-type: none"> ✓ High quality ✓ Not collapsible ✓ Non- toxic ✓ Non- flexible ✓ Anti- bacterial ✓ Durable and easy to use ✓ Smooth and resistant to cutting surface ✓ Suitable for fruits and vegetables 	<ul style="list-style-type: none"> ➤ Less working area ➤ Hard to hold ➤ It may move while using
<p>9. PEDPIX Multi-Purpose Natural Wooden Cutting Board & Steel Tray</p>		<ul style="list-style-type: none"> ✓ This multipurpose chopping board has tray to keep chopped vegetables ✓ It is eco friendly ✓ Easy to maintain ✓ Easy to clean 	<ul style="list-style-type: none"> ➤ Less working place ➤ There is no handle to hold the board and to pull the tray

<p>10. Teak Wood Vegetable Round Chopping Board</p>		<ul style="list-style-type: none"> ✓ Easy to hang the chopping board on wall hooks. ✓ Flexible to use ✓ Non-toxic ✓ Non-absorbent ✓ Stain resistant ✓ Reversible ✓ Suitable for all vegetables and fruits ✓ Micro wave safe ✓ Freezer safe ✓ Eco friendly ✓ Easy to use ✓ Easy to clean 	<ul style="list-style-type: none"> ➤ No handle was provided to hold.
<p>11. Natural Organic Moso Bamboo Cutting Board with Two Integrated Stainless Steel Bowls</p>		<ul style="list-style-type: none"> ✓ High quality wood and steel ✓ Highly durable ✓ Easy to clean ✓ Natural color ✓ Suitable to all types of kitchens ✓ Gives good modern look to kitchens ✓ Non-porous ✓ Stain resistant ✓ It has two holders to store chopped vegetables after cutting 	<ul style="list-style-type: none"> ➤ No handle was provided to hold
<p>12. Plastic Chopping Board</p>		<ul style="list-style-type: none"> ✓ Highly flexible ✓ High quality plastic ✓ Easy to use ✓ Easy to clean ✓ It will not crack ✓ Highly durable ✓ Non-porous 	<ul style="list-style-type: none"> ➤ Handle is like groove ➤ May leave knife marks on the surface so may not last longer
<p>13. Plastic Cutting Board</p>		<ul style="list-style-type: none"> ✓ Durable knife-friendly cutting surface. ✓ Perfect for cleaning and soaking vegetables, fruits before cooking. ✓ Easy to use ✓ Multipurpose for chopping, washing and storing vegetables 	<ul style="list-style-type: none"> ➤ Since many folding are there, cut vegetables might stuck in them ➤ Can break and bend easily while using
<p>14. Cut and Wash Vegetable Chopping Board with Knife</p>		<ul style="list-style-type: none"> ✓ High-quality stainless steel blade and plastic board,. ✓ Helps your chopping more faster 	<ul style="list-style-type: none"> ➤ Can break easily ➤ Less place for cutting vegetables ➤ Hard to hold the knife knob (grip) ➤ There is no handle ➤ Blade might injure the fingers while using
<p>15. Ankur plastic Cut and Wash Vegetable Chopping Board with Knife</p>		<ul style="list-style-type: none"> ✓ Doubles up as a strainer. ✓ Tray to keep chopped vegetables ✓ Durable ✓ Easy to clean. ✓ Easy to use 	<ul style="list-style-type: none"> ➤ Can break easily ➤ Less place for cutting vegetables ➤ Hard to hold the knife knob (grip) ➤ There is no handle for it ➤ Low quality ➤ Requires more counter space

<p>16. Plastic Cutting Board</p>		<ul style="list-style-type: none"> ✓ Sturdy plastic chopping board with a removable basket for conveniently putting the cut vegetables in to the vessel. ✓ Easy to use ✓ Easy to clean ✓ Non- toxic ✓ Non- slippery ✓ Stain resistant ✓ Non absorbent 	<ul style="list-style-type: none"> ➤ Can break easily ➤ There is no handle for board ➤ Need plain surface to fit ➤ Less flexible
<p>17. Chop and Store Joyo Chopping Board with Strainer and Tray</p>		<ul style="list-style-type: none"> ✓ Resistant from Cracks, Twisting and Fragment. ✓ Can use dual purpose for strain and store. ✓ Strong ✓ Can clean easily. 	<ul style="list-style-type: none"> ➤ Low quality ➤ Can break easily ➤ Less working space
<p>18. Gorlera stainless steel cutting board</p>		<ul style="list-style-type: none"> ✓ Highly durable ✓ High quality steel ✓ Suitable for all types of knives ✓ Easy to use ✓ Eco friendly ✓ Easy to maintain ✓ look perfect in any kitchen 	<ul style="list-style-type: none"> ➤ Handle is like small grove ➤ May not able to hold the cut vegetables from slipping to the sides
<p>19. Infinite Wiz Steel Stainless Steel Cutting Board</p>		<ul style="list-style-type: none"> ✓ It will not mold, cracked or warped, ✓ There will be no dirt, debris or plastic fibers contaminating your food ✓ Healthy and hygienic compared to cheap plastic and wood chopping boards. ✓ The surface of the cutting board is very smooth, no food remains after use, ✓ it is easy to clean 	<ul style="list-style-type: none"> ➤ Handle is like small grove ➤ very thin
<p>20. DUSASA Duel use Chopping Board with Knife Sharpener</p>		<ul style="list-style-type: none"> ✓ Environmental friendly ✓ Smooth, easy to wipe away water stains and residual food, ✓ Easy to clean and Storage ✓ Knife sharpener at the board to keep the knife sharp. ✓ Excellent anti-skid ability ✓ Non-porous ✓ Suitable for family outdoor barbecue and picnic use. 	<ul style="list-style-type: none"> ➤ Handle is small can't fit the fingers to hold

When existing vegetable chopping boards were evaluated, it was found that more or less all the cutting boards had similar features like having highly durable, high quality, eco-friendly, non- porous and non-toxic material. However they were different from each other in terms of size, shape and color. Only few boards had storage facility, handles, dual use, attached cutter and knife sharper. Some plastic boards had storage and strainer.

In this evaluation survey some defects were found in vegetable chopping boards i.e. most of the chopping boards

do not have proper handle to hold the board. So it is difficult to hold the board while chopping the vegetables. There was no separate storage facility to store knives, peelers and slicers. If the storage was provided within the chopping board consumer can save energy and reduce number of movements in the kitchen instead of searching for knives and peelers while cutting the vegetables. Few of the cut and wash type chopping boards with knife had insufficient place to cut the vegetables. Some other plastic boards were of very poor quality, can bend easily while using.

Table 2: Specifications of different vegetable chopping boards

Name of the vegetable chopping board	Color	Shape	Product dimensions	Cost in Rupees	Storage facility	Material
1. Bamboo cutting board with trays	Brown	Rectangle	Length x Width x Depth 16" x 10" x 4"	7179	4 boxes were provided under the board to keep the chopped vegetables.	Organic bamboo and BPA plastic
2. Wooden chopping board with cutter (Tredy Foods)	White	Rectangle	Length x Width x Height 130.5 cm x 20.3 cm x 7.5 cm	910	-	Wood Stainless steel blade
3. Zureni Bamboo Reversible Wooden Bamboo Cutting Board With Holder	Brown	Rectangle	Length x Width x Height 16" x 6" x 1/2"	245	-	Bamboo and Aluminum Handles
4. Ellementry Beige Solid Wooden Chopping Board	Beige Pattern, Solid with dark stain pattern	Rectangle	Length x Width x Height 16" x 6" x 1/2" weight: 0.32 kg	592	-	Mango wood
5. AOOMI Premium Teak Wood Vegetable Cutting Board	Brown	Rectangle	Length x Width 10.4" x 13.5"	1257	Small hole for wastage	Teak wood
6. Premium Teak Wood Chopping Board	Brown	Oval	Length x Width 15" x 8"	810	-	Natural teak wood without polish
7. Safal Beige Pure Natural Wooden Contemporary Chopping Board	Beige Pattern	Curved Rectangle	Length x Width 16" x 4"	1300	-	Wood
8. Classical Youth Butterfly-shaped Chopping Board	Brown	Butterfly-shape	Width x Height: 13.5" x 7.5"	599	-	Sheesham Wood
9. Multi-Purpose Natural Wooden Cutting Board & Steel Tray	Beige	Rectangle	Width x Height 12" x 10"	1039	Steel tray type storage facility under the cutting board	Wood and Steel
10. Teak Wood Vegetable Round Chopping Board	Beige	Round	Width x Height 8.5" x 8.5"	349	-	Teak wood
11. Natural Organic Moso Bamboo Cutting Board with Two Integrated Stainless Steel Bowls	Bamboo	Rectangle	Width x Height 17.5" x 11.5"	198	Stainless steel bowls to store chopped vegetables	Natural bamboo wood and stainless steel
12. Plastic Chopping Board	Green	Oval	Width x Height 10" x 12"	198	-	Plastic
13. Plastic Cutting Board	White and Grey	Rectangle	Width x Height 16" x 12.6"	459	Plastic bowl for storing and washing the vegetables under the cutting board	Plastic
14. Cut and Wash Vegetable Chopping Board with Knife	Brown	Rectangle	Width x Height 9.5" x 12"	174	Either side of the cutting board plastic bowls are provided one to keep the chopped vegetables and another one for wash the vegetables.	Plastic (Polypropylene)
15. Ankur plastic Cut and Wash Vegetable Chopping Board with Knife	Brown	Rectangle	43 cm length	195	Either side of the cutting board plastic bowls are provided one to keep the chopped vegetables and another one for wash the vegetables.	Plastic
16. Plastic Cutting Board	Green	Rectangle and removable	Board Length x Width 38.2 cm x 29 cm Removable Basket 29cm X 10cm	899	Removable plastic grove type storage to keep chopped vegetables	Antibacterial ABS Quality Plastic
17. Chop and Store Jyoy Chopping Board with Strainer and Tray	Green and white	Rectangle	Length x Width x Height 260 mm x 240 mm x 55 mm approx.	245	Sliding chopping board with one tray to keep chopped vegetables one side and strainer at another side of the cutting board	Plastic
18. Stainless Steel Cutting Board	White	Rectangle	Width x Height: 36" x 25"	429	-	Stainless Steel
19. Steel Stainless Steel Cutting Board	Silver	Rectangle	Width x Height: 10" x 12"	649	-	304-food grade stainless steel antibacterial
20. DUSASA Duel use Chopping Board with Knife Sharpener	Silver and Gray	Rectangle	-	4109	-	316 stainless steel and BPA Free polypropylene

When the specifications of the chopping boards were compared it was found that different types of plastics like Polypropylene and BPA plastic, different types of woods like teak, bamboo and stainless steel were the commonly used materials for making the chopping boards. The specifications mentioned by the manufacturer for chopping boards were material used for making the boards, color, shape, dimensions, and availability of storage facility. Many of the manufacturers have given only 80-85 per cent of the information. Unless the complete information is given, consumer will not be able to take the right decision to choose the correct type of chopping boards.

Conclusion

Review on different types of vegetable chopping boards available in the market will help the consumers to know, find and choose their required chopping board based on the features, quality, and price by assessing the advantages and disadvantages. It makes the consumer aware about the types of vegetable chopping boards available as per their budget and could help them in easy selection based on their purpose and preferences. The price of boards ranged from Rs.175/- to Rs.7100/-. However, none of the manufacturers gave the guarantee period and life span about their performance even for expensive ones. It is recommended that research study can be conducted to find out the satisfaction of users about chopping boards.

References

1. Abrishami S, Tall B, Thomas J, Bruursema, Paul S, Epstein' and Shah, D. Bacterial observance and feasibility on cutting board surfaces.1994. Journal of Food Safety 1994;14:153-172. DOI: 10.1111/j.1745-4565.1994.tb00591.
2. Ak NO, Cliver DO, Kaspar CW. Cutting boards of wood and plastic contaminated and experimented with bacteria. Journal of Food Protection, 1994;57:16-22.
3. Berufsgenossenschaft, Nahrungsmittel and Gaststätten. 2010. Leitlinie fureine Gute Lebensmittel hygiene praxis in ortsveranderlichen Betriebsstätten, Mannheim. Available from <http://www.bgn.de/files/9427/24497/currentVersion/wcoi4f0d64496752a.pdf>. Last accessed 5 March 2015.
4. Boursillon D, Riethmuller V. The safety of wooden cutting boards. Remobilization of bacteria from pine, beech, and polyethylene. British Food Journal 2007; 109(4):315-322.
5. European Community the European Parliament and the Council of 29 April 2004 on the hygiene of foodstuffs. Official Journal 2004.
6. Lucke F, Skowyrska A. Disinfected features of using plastic and wooden chopping boards, evaluated in laboratory and small cooking units. Journal of Consumer Protection and Food Safety 2015. DOI 10.1007/s00003-015-0949-5