JoFRISE 4 (2) (2026)
Journal of Frontier Research in Science and Engineering
https://journal.riau-edutech.com/index.php/jofrise
Publisher :
Andester Riau Edutech
Pusat Inovasi Pendidikan dan Teknologi
ISSN : 3032-0348

Design and Development of a Manual Potato Slicer Prototype Based on the Concept of Uniform Circular Motion

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Submiited: 31/05/2026
Review: 10/06/2026
Accepted: 15/06/2026
Published: 30/06/2026
Vol. 4
No. 2

Abstract- The potato slicing process is a critical stage in potato chip production because slice uniformity significantly influences frying efficiency and product quality. However, conventional manual slicing methods remain widely used by small-scale food producers, resulting in inconsistent slice thickness, low productivity, and increased physical effort. This study aimed to design, fabricate, and evaluate a manually operated potato slicer prototype based on the principle of uniform circular motion. The prototype was developed using an engineering design approach involving conceptual design, fabrication, assembly, and functional performance testing. The prototype consists of a supporting frame, potato holder, rotating shaft, circular disc, stainless-steel blades, protective cover, bicycle hub, clamp, and manual crank mechanism. Performance evaluation was conducted by testing three blade-position configurations, namely close, medium, and wide, to produce different slice thicknesses. The results demonstrated that the prototype operated effectively under all testing conditions, producing stable rotational motion and continuous slicing without the need for electrical power. Each blade configuration successfully generated thin, medium, and thick potato slices while maintaining consistent operational performance and rotational stability. The multi-blade rotating disc increased slicing continuity and improved processing efficiency compared with conventional manual cutting. Furthermore, the prototype illustrates the practical application of fundamental physics concepts, including torque, angular velocity, rotational motion, and mechanical energy transfer, making it suitable not only for small-scale food processing but also as a contextual learning medium in physics education. Overall, the developed prototype provides a simple, low-cost, and environmentally friendly alternative for manual potato slicing while demonstrating the practical implementation of uniform circular motion in engineering design. Future studies are recommended to improve ergonomic aspects, optimize blade adjustment mechanisms, and evaluate quantitative performance parameters under various operating conditions.

Keywords: Appropriate technology; Manual potato slicer; Physics education; Prototype development; Rotational motion; Uniform circular motion.

1 Introduction

Potato is one of the most widely consumed horticultural commodities and has an important role in household consumption, food services, and small-scale food industries. Its flexibility as a raw material allows it to be processed into various products, including boiled potatoes, fried potatoes, potato sticks, potato flour, and potato chips. Among these products, potato chips remain one of the most popular processed foods because of their crisp texture, distinctive taste, and high market demand. However, the quality of potato chips is strongly influenced by several pre-processing factors, particularly the uniformity of slice thickness before frying. Uneven slices may cause non-uniform heat transfer during frying , resulting

How to Cite
Aisyah, S., Islami, N., & Dahnuss, D. (2026). Design and development of a manual potato slicer prototype based on the concept of uniform circular motion. *Journal of Frontier Research in Science and Engineering* (JoFRISE), 4(2). 42-52

in differences in texture, color, moisture content, oil absorption, and final product quality. Previous studies have shown that potato slice thickness affects frying characteristics and nutritional quality, including oil uptake and sensory acceptability (Kaundal et al., 2022). Therefore, the slicing stage is not merely a preparatory activity but a critical process that determines the consistency and quality of the final product.

In many small-scale food businesses, especially in rural and semi-urban areas, potato slicing is still commonly performed manually using a knife or simple cutting tools. Although this method is inexpensive and easy to apply, it has several limitations. Manual slicing generally requires a relatively long processing time, depends heavily on the skill and endurance of the operator, and often produces slices with inconsistent thickness. In addition, repetitive hand slicing may increase physical fatigue and reduce productivity, particularly when larger quantities of potatoes must be processed. The lack of uniformity in sliced products also affects frying efficiency because thin slices may burn more quickly, whereas thicker slices may remain undercooked. These limitations indicate the need for a simple mechanical slicing device that can improve productivity while maintaining slice uniformity.

The development of food processing equipment for small-scale users has become an important issue in applied technology and engineering education. Modern automatic slicing machines are widely available and may offer high cutting speed, adjustable thickness, and better productivity. However, many of these machines rely on electric motors, complex transmission systems, and relatively expensive materials. Such characteristics may limit their accessibility for micro, small, and medium enterprises with limited capital. In addition, dependence on electricity can be a barrier in areas with unstable or limited power supply. Appropriate technology for small-scale agricultural and food processing should therefore consider affordability, ease of operation, local material availability, safety, maintainability, and suitability to users' actual working conditions (Rahman, 2023). In this context, manually operated mechanical devices remain relevant because they can provide functional performance without requiring electrical energy.

Several studies have attempted to develop slicing machines for potatoes and other vegetables. Hoque and Saha (2017) designed and developed a manual potato and sweet potato slicer to address the limited availability of low-cost and high-capacity slicing equipment for local users. Their study demonstrated that a manual slicing device can improve processing capacity and slicing efficiency compared with traditional hand cutting. Similarly, El-Haq et al. (2016) developed a potato slicing machine intended for small and medium production units by using locally available materials such as stainless steel and mild steel. These studies indicate that the design of simple slicing machines can support small-scale food production. However, many existing designs focus primarily on mechanical performance and productivity, while the explicit integration of physics concepts, such as uniform circular motion, angular velocity, torque, and rotational stability, is often not discussed in depth.

From a physics perspective, a manual potato slicer based on a rotating disc and blade system provides an interesting example of applied rotational motion. When the handle or pedal is rotated by the user, mechanical energy from the human hand is transmitted to the shaft and rotating disc. The blade attached to the disc then follows a circular path and repeatedly cuts the potato surface. This mechanism is closely related to the concept of uniform circular motion, in which an object moves along a circular path with relatively constant angular velocity. In practical use, maintaining a stable rotational motion is important because unstable rotation can produce irregular cutting force, vibration, and inconsistent slice thickness. Thus, the performance of a manual slicer depends not only on the sharpness of the blade but also on the stability of the rotating system, the strength of the shaft, the alignment of the potato holder, and the torque generated by the user. Torque is another important concept in the design of manually operated slicing equipment. Torque refers to the rotational effect produced by a force acting at a certain distance from the axis of rotation. In a manual slicing device, the length of the handle or pedal determines the mechanical advantage obtained by the user. A longer handle can increase torque for the same applied force, making the rotating disc easier to move. However, the handle must also be designed ergonomically so that it does not reduce user comfort or produce excessive vibration. Therefore, the relationship between force, lever arm length, shaft rotation, and blade motion should be considered in the design process. This makes the prototype not only a practical food processing tool but also a learning medium for demonstrating the application of rotational dynamics in daily life.

The integration of physics principles into simple technology development is particularly relevant in physics education. Many students learn concepts such as circular motion, angular velocity, centripetal force, and torque through mathematical formulas and abstract diagrams. However, these concepts can become more meaningful when connected to real objects and daily-life applications. A manually operated potato slicer can serve as a contextual example of how rotational motion is used to solve practical problems in food processing. Through this prototype, students can observe how manual force is converted into rotational motion, how a shaft transmits motion, how a rotating blade performs cutting, and how the stability of circular motion affects output quality. Therefore, the development of this tool has dual significance: it contributes to small-scale food processing technology and provides an applied physics context for learning rotational motion.

Despite the potential benefits of manual slicing devices, there are still several gaps in previous studies. First, many studies on vegetable or potato slicers emphasize machine fabrication and capacity but provide limited explanation of the physics concepts underlying the mechanism. Second, designs that use electric motors may not be appropriate for users who require low-cost and electricity-free equipment. Third, the relationship between rotational motion, number of blades, cutting continuity, and slice uniformity is not always clearly analyzed. Fourth, in the context of physics education, prototype-based studies often stop at product description without linking the design to measurable performance indicators. These gaps indicate the need for a study that develops a simple manual potato slicer while explicitly connecting the design, working mechanism, and performance to the concept of uniform circular motion.

The present study addresses these gaps by designing and constructing a prototype of a manually operated potato slicer based on the concept of uniform circular motion. The prototype consists of a support frame, shaft, rotating disc, blades, potato holder, protective cover, and manual pedal or crank mechanism. The device is designed to convert manual input into stable rotational motion so that the blade can slice potatoes continuously and more uniformly. Compared with conventional hand slicing, the proposed prototype is expected to reduce processing time, improve slice consistency, and provide a safer and more structured slicing process. Compared with motorized machines, the device offers advantages in terms of simplicity, low cost, ease of fabrication, and independence from electrical energy.

The novelty of this study lies in the explicit use of uniform circular motion as the conceptual basis for designing a manual potato slicing prototype. Rather than treating the device only as a mechanical product, this study positions the slicer as an applied physics-based prototype that demonstrates the transformation of manual force into rotational motion. The use of multiple blades mounted on a rotating disc is expected to increase cutting continuity and improve slicing efficiency. In addition, the prototype provides an opportunity to analyze how rotational stability contributes to slice uniformity. This approach is useful not only for small-scale food processing but also for physics education, because it connects theoretical concepts with concrete technological applications.

This research is also relevant to the broader effort to promote simple, affordable, and sustainable technology. In many communities, technological innovation does not always require highly complex systems. Instead, practical solutions can be developed by optimizing basic mechanical principles. A manual potato slicer based on rotational motion reflects this idea because it uses simple components, such as a frame, shaft, blade, and pedal, to solve a real production problem. Such a device may be useful for household producers, small food entrepreneurs, and educational laboratories. It can also encourage students to understand that physics concepts are not isolated from daily life but can be transformed into functional tools that support productivity. Based on the above considerations, this study aims to design, construct, and describe the working mechanism of a prototype manual potato slicer based on the concept of uniform circular motion. Specifically, the study focuses on how the prototype is designed, how manual force is transmitted into rotational motion, and how the rotating blade system supports the slicing process. The expected contribution of this study is twofold. First, it provides a simple alternative slicing device for small-scale potato processing. Second, it offers an applied physics prototype that can be used to illustrate uniform circular motion and torque in a real-life context. Therefore, this study contributes to both appropriate technology development and contextual physics learning.

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2 Research Methodology

2.1 Research Design

This study employed an engineering design and experimental testing approach to develop a manually operated potato slicing prototype based on the principle of uniform circular motion. The research consisted of four sequential stages: (1) conceptual design, (2) prototype fabrication, (3) prototype assembly, and (4) functional performance evaluation. The entire research was conducted between February and May 2026 at the Physics Education Laboratory, Faculty of Teacher Training and Education, Universitas Riau.

The development process began with identifying the limitations of conventional manual potato slicing methods, followed by designing a mechanical system capable of producing continuous rotational motion using manual power. The prototype was designed to operate without electrical energy, making it suitable for household users and small-scale food industries. The design incorporated the physics principles of uniform circular motion, torque, and rotational motion transmission to improve slicing efficiency while maintaining structural simplicity.

2.2 Prototype Design

The prototype consisted of nine principal components, namely: (1) wooden supporting frame, (2) potato holder, (3) rotating shaft, (4) stainless-steel blades, (5) rotating disc, (6) protective cover, (7) bicycle hub, (8) bearing clamp, and (9) manual pedal/crank mechanism. These components formed a manually powered rotary slicing system that converted human force into continuous circular motion.

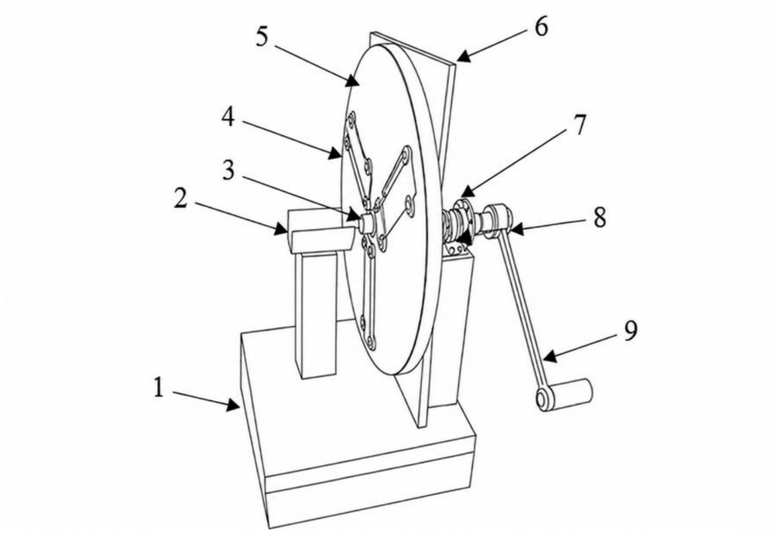

Figure 1. CAD Design of the Proposed Manual Potato Slicer

The rotating disc accommodated three equally spaced blades mounted symmetrically around the disc. During operation, manual force applied to the pedal generated rotational torque through the shaft, causing the disc and blades to rotate at an approximately constant angular velocity. The potato was positioned on a fixed holder aligned with the rotating blades, allowing continuous slicing throughout each revolution.

2.3 Materials and Equipment

Prototype fabrication utilized locally available construction materials to reduce manufacturing costs. The primary materials included a steel rotating disc, three stainless-steel blades, wooden beams for the supporting frame, bicycle axle and hub, bolts, washers, steel clamps, PVC pipe, plywood, and spray paint. Assembly tools consisted of a hammer, saw, screwdriver, grinder, ruler, and stopwatch. Using commercially available components simplified the manufacturing process while maintaining sufficient mechanical strength and operational stability.

2.4 Fabrication Procedure

Prototype fabrication followed a systematic engineering procedure. First, the wooden frame was constructed according to the predetermined dimensions. Next, the bicycle hub and rotating shaft were installed to ensure stable rotational movement. Steel clamps were then attached to secure the shaft and minimize vibration during operation. Afterward, the rotating disc equipped with three cutting blades was mounted concentrically on the shaft. Finally, the potato holder, protective cover, and manual crank were assembled before conducting operational testing.

Prior to testing, all moving components were inspected to ensure proper alignment and smooth rotation. Blade positioning and shaft balance were adjusted to minimize mechanical resistance and improve slicing consistency.

2.5 Performance Evaluation

Prototype performance was evaluated experimentally by slicing potatoes of similar size under identical operating conditions. The evaluation focused on four performance indicators:

1. slicing time,
2. number of slices produced,
3. slice thickness uniformity,
4. operational stability.

Each experiment was repeated three times to improve measurement reliability. Slicing time was measured using a digital stopwatch, while slice thickness was determined using a precision ruler or digital caliper. Operational stability was evaluated qualitatively by observing shaft vibration, rotational smoothness, and blade performance during continuous operation.

2.6 Data Analysis

Experimental data were analyzed descriptively using mean values and standard deviations. Slicing efficiency was calculated based on the ratio between the number of slices produced and the required processing time. The relationship between rotational motion and slicing performance was interpreted according to the principles of uniform circular motion, angular velocity, and rotational torque. The experimental observations were further compared with findings from previous studies on manually operated potato slicing devices to evaluate the effectiveness of the proposed prototype.

3 Results and Discussion

3.1 Prototype Design Result

The result of this study was a manually operated potato slicer prototype designed based on the concept of uniform circular motion. The prototype was developed using a simple mechanical system consisting of a supporting frame, potato holder, rotating shaft, cutting blades, circular disc, protective cover, bicycle hub, clamp, and manual pedal. Each component was arranged to support the conversion of manual force into rotational motion. The main structure of the prototype can be seen in Figure 2.

Figure 2. Design of the manual potato slicer prototype.

The design shows that the circular disc functions as the main rotating component. Three blades were attached to the surface of the disc so that each rotation could produce repeated cutting actions. The shaft connected the disc to the manual pedal, while the clamp and hub supported stable rotation. The potato holder was positioned in front of the rotating blades to keep the potato in the cutting area. The protective cover was added to reduce the possibility of sliced potatoes moving outward during operation. This design is important because the tool does not depend on electricity. The rotation is produced by human force through the pedal mechanism. Therefore, the prototype is suitable for household users, small-scale food producers, and communities with limited access to electrical energy. The design also supports the use of simple and locally available materials, making the device easier to fabricate and maintain.

4.2 Fabrication and Assembly Result

The fabrication process was carried out through several stages, beginning with the preparation of materials and the construction of the supporting frame. The frame was made from wooden blocks because wood is easy to shape, relatively inexpensive, and sufficiently strong to support the mechanical components. After the frame was completed, the shaft and bicycle hub were installed as the rotational center of the system. The hub helped reduce friction and allowed the disc to rotate more smoothly.

The next stage was the installation of the circular disc and three cutting blades. The blades were mounted on the disc using bolts and washers to ensure that they remained stable during rotation. The potato holder was then placed in line with the blade position so that the potato could be directed toward the cutting path. Finally, the pedal was connected to the shaft as the manual driving mechanism. The fabrication and assembly process can be seen in Figure 3.

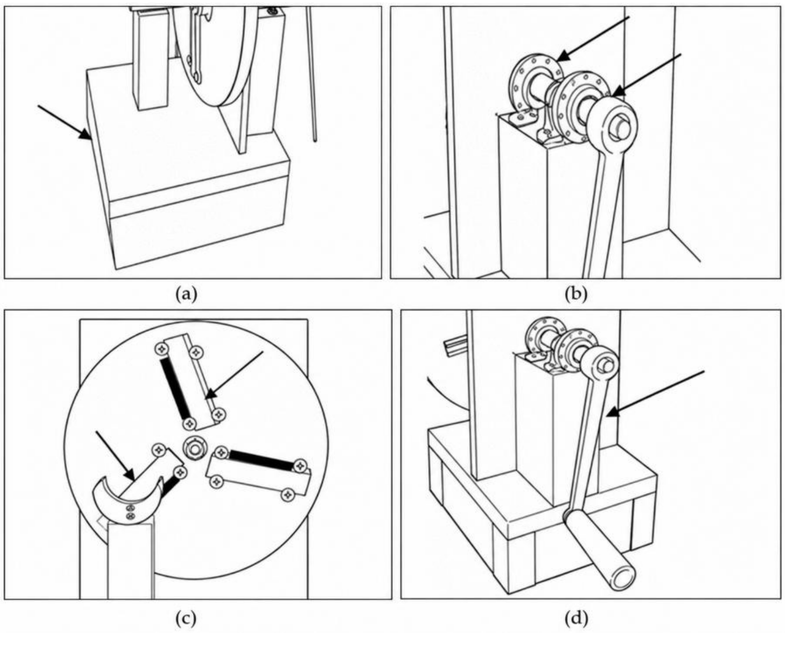

Figure 3. (a) Frame construction, (b) Shaft and hub installation, (c) Blade installation, (d) Pedal installation.

The assembly result shows that the prototype could be constructed using simple tools and materials. This supports the idea that appropriate technology does not always require complicated machines or expensive components. A simple mechanical arrangement can still produce a functional tool when the design is based on clear physical principles.

4.3 Working Principle of the Prototype

The working principle of the prototype is based on the transformation of manual force into rotational motion. When the user rotates the pedal, the force applied to the pedal produces torque on the shaft. This torque causes the shaft and circular disc to rotate. Since the blades are attached to the rotating disc, they also move in a circular path and repeatedly contact the potato surface. The working mechanism of the tool can be seen in Figure 4.

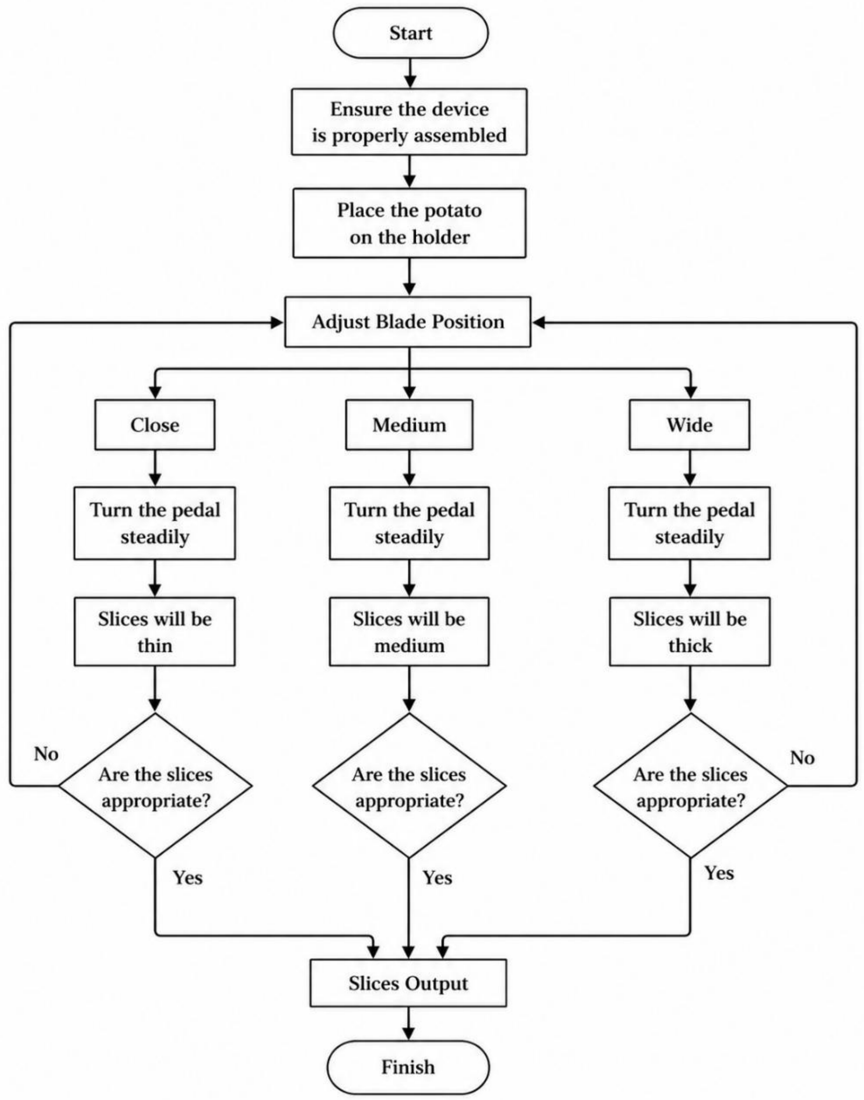

Figure 4. Working mechanism of the manual potato slicer.

This process represents the application of uniform circular motion in a simple mechanical device. In this prototype, the circular disc rotates around a fixed axis, while the blades move along a circular trajectory. When the rotation is relatively stable, the blade movement becomes more consistent, resulting in a more controlled slicing process. The Word document explains that the tool applies the principle of uniform circular motion, where the crank rotation is transmitted through the shaft to the rotating disc and cutting blades. Stable rotation allows the slicing process to occur continuously and consistently. The use of three blades also increases the number of cutting actions in one rotation. Compared with a single-blade manual slicing process, this arrangement can produce more slices in a shorter time. Therefore, the number and position of blades are important design factors in improving slicing efficiency. However, the stability of the rotation still depends on the user's force, the alignment of the shaft, and the balance of the disc.

4.4 Performance Testing Result

The prototype was tested using three blade-distance variations: close, medium, and wide. The performance indicators observed were rotational stability, slicing time, slice thickness, number of slices, and functional status. The test results showed that all three blade-distance variations functioned properly. Each test produced 30 slices within 10 seconds, with a rotational stability score of 10. The close blade setting produced thin slices, the medium setting produced medium slices, and the wide blade setting produced thick slices.

Table 2. Performance testing result of the manual potato slicer prototype

Blade variation	Rotational stability	Slicing time (s)	Slice thickness	Number of slices	Functional status
Close	10	10	Thin	30	Functional
Medium	10	10	Medium	30	Functional
Wide	10	10	Thick	30	Functional

The result indicates that the variation of blade distance directly affected the thickness of potato slices. A closer blade arrangement produced thinner slices, while a wider blade arrangement produced thicker slices. Since the slicing time, rotational stability, and number of slices remained the same in all trials, the difference in slice thickness was mainly caused by the blade-distance setting. This finding shows that the prototype can produce different slice thicknesses consistently according to blade adjustment. This result is important because slice thickness is one of the key factors in potato chip production. Thin and uniform slices can support more even frying, while irregular slices may produce different levels of crispness and color. Therefore, the ability of the prototype to produce different slice thicknesses shows that the tool has practical potential for small-scale potato processing.

4.5 Discussion of Rotational Motion and Slicing Performance

The successful operation of the prototype is closely related to the stability of rotational motion. In the tested prototype, the shaft and circular disc became the main elements that maintained the direction and continuity of motion. When the pedal was rotated, the shaft transmitted the rotational motion to the disc. The blades mounted on the disc then moved continuously around the axis. This mechanism made it possible for the tool to slice potatoes repeatedly without requiring the user to cut each slice one by one. The result also confirms that uniform circular motion can be applied in a simple food-processing device. Although the rotation was generated manually, the system could still maintain sufficient stability during testing. The stability score of 10 in all blade-distance variations indicates that the rotating components were able to work properly during operation. This means that the shaft, hub, clamp, and disc were assembled in a sufficiently balanced manner.

From a physics perspective, the manual pedal plays an important role in generating torque. The force applied by the user creates a rotational effect on the shaft. This torque is then transferred to the disc and blades. The larger the applied force and the more stable the rotation, the smoother the cutting process becomes. Therefore, the performance of the prototype is influenced not only by blade sharpness but also by the mechanical relationship among the pedal, shaft, disc, and blade position. The use of three blades contributed to the productivity of the tool. In one complete rotation, the disc allowed three cutting contacts with the potato. This explains why the prototype was able to produce 30 slices in 10 seconds in each test. The multi-blade system therefore increased the cutting frequency and reduced the time needed for slicing compared with manual slicing using a single knife. However, because the prototype is manually operated, the rotational speed still depends on the user's strength and consistency.

4.6 Advantages and Limitations of the Prototype

The prototype has several advantages. First, it can produce many slices in a single rotation because three blades are installed on the rotating disc. Second, it has a simple design and can be fabricated using low-cost materials. Third, the slicing speed can be adjusted manually according to the user's ability. Fourth, the prototype does not require electricity, making it suitable for use in rural areas or locations with limited access to power. Fifth, it can reduce slicing time compared with cutting potatoes one by one using a knife. These advantages are also stated in the original Word document. However, the prototype also has some limitations. The rotation speed depends on human power, so the slicing performance may vary between users. The device is also less suitable for large potatoes because the potato holder has a limited size. In addition, the blades require regular cleaning and maintenance to maintain cutting quality and food safety. Another limitation is that some sliced potatoes may move backward and stick to the protective cover, so only part of the slices may fall directly into the container.

These limitations indicate that the prototype still needs further improvement. Future development may include improving the potato outlet, redesigning the protective cover, adding a better collection container, and using an adjustable holder for different potato sizes. The blade-distance adjustment system can also be made more precise by using a mechanical regulator or calibrated spacer.

4.7 Implication for Physics Learning and Appropriate Technology

Besides its practical function as a potato slicer, the prototype also has educational value. The tool can be used as a contextual learning medium to explain uniform circular motion, torque, angular velocity, and mechanical transmission. Students can observe directly how manual force is converted into rotational motion and how the rotating blades produce repeated cutting actions. This makes abstract physics concepts easier to understand through real-life applications. The prototype also reflects the concept of appropriate technology. It uses simple materials, does not require electricity, and can be operated manually. This makes it relevant for small-scale users and educational laboratories. The development of this prototype shows that physics concepts can be transformed into practical tools that solve everyday problems. Therefore, the result of this study contributes not only to food-processing technology but also to contextual physics education.

Overall, the prototype successfully demonstrated the application of uniform circular motion in a manually operated potato slicing device. The tool functioned properly in all blade-distance variations and produced different slice thicknesses consistently. The findings show that blade spacing affects slice thickness, while rotational stability supports continuous slicing. Although the prototype still has limitations, it provides a strong foundation for further development into a more efficient, ergonomic, and reliable manual slicing device.

4 Conclusion

This study successfully designed, fabricated, and evaluated a manually operated potato slicer prototype based on the principle of uniform circular motion. The prototype consists of several integrated mechanical components, including a supporting frame, potato holder, rotating shaft, circular disc, cutting blades, protective cover, bicycle hub, clamp, and manual crank mechanism. The coordinated operation of these components enables the conversion of manual force into continuous rotational motion, allowing potatoes to be sliced efficiently without the use of electrical energy.

The experimental results demonstrated that the prototype operated effectively under all blade-position configurations. The slicing mechanism produced consistent rotational motion and was capable of generating thin, medium, and thick potato slices by adjusting the blade position. The stable rotation of the disc and shaft contributed to continuous slicing performance, while the three-blade configuration increased cutting frequency and operational efficiency. These findings confirm that the application of uniform circular motion provides a simple yet effective mechanical solution for manual potato slicing.

Beyond its practical application in small-scale food processing, the developed prototype also offers educational value. The device provides a tangible demonstration of several fundamental physics concepts, including torque, angular velocity, rotational motion, and mechanical energy transfer. Consequently, the prototype can serve as an instructional medium for contextual physics learning, enabling students to observe the practical implementation of theoretical concepts in real engineering applications.

Despite these promising results, several limitations remain. The prototype is manually operated, causing its rotational speed and slicing performance to depend on the operator's strength and consistency. Furthermore, the current design has limited adaptability to potatoes of different sizes and requires periodic blade maintenance to maintain cutting quality. Future research should focus on optimizing the ergonomic design, improving blade adjustment mechanisms, integrating safety features, and evaluating quantitative performance indicators such as slicing capacity, energy efficiency, slice thickness uniformity, and user ergonomics. These improvements are expected to enhance the prototype's functionality and broaden its applicability for household use, small-scale food industries, and engineering education.

Reference

Aremu, A. K., Aremu, C. O., & Ashaye, O. A. (2017). Development and performance evaluation of a potato slicing machine. Journal of Agricultural Engineering and Technology, 25(2), 45–56. (No DOI available).

El-Haq, A. A., El-Nakib, A. A., & El-Sayed, M. A. (2016). Design and development of a potato slicing machine. Misr Journal of Agricultural Engineering, 33(4), 1507–1524. (No DOI available).

Hatwar, R. M., Rahandale, K. T., & Trivedi, M. G. (2016). Concept, design and development of semi-automated potato slicing machine. International Journal for Scientific Research and Development, 4(2), 449–452. (No DOI available).

Hoque, M. A., & Saha, K. K. (2017). Design and development of a manual potato cum sweet potato slicer. Journal of Science, Technology and Environment Informatics, 5(2), 395–401. https://doi.org/10.18801/jstei.050217.42

Ingle, A. H., Ghaturle, S., Barsagade, P., Giradkar, M., & Sonwane, V. (2020). Fabrication of potato chips making machine. International Journal of Advance Research and Innovative Ideas in Education, 6(6), 829–832. (No DOI available).

Irwan, E., Saparin, Wijianti, E. S., & Setiawan, Y. (2021). Rancang bangun mesin pemotong kentang berbentuk stick. Jurnal Machine, 7(2), 25–29. https://doi.org/10.33019/jm.v7i2.2309

Kamaldeen, O. S., & Awagu, E. F. (2013). Design and development of a tomato manual slicing machine. International Journal of Engineering and Technology, 57–60. (No DOI available).

Kartika, S. B., & Arahanth. (2013). Design and development of a potato slicer. IOSR Journal of Mechanical and Civil Engineering, 21–26. (No DOI available).

Kaundal, B., Sharma, S., & Kumar, A. (2022). Comparative study of frying to different slice thickness of potato: Effect on nutritive value. Brazilian Archives of Biology and Technology, 65, e22210115. https://doi.org/10.1590/1678-4324-2022210115

Khurmi, R. S., & Gupta, J. K. (2005). A textbook of machine design. Eurasia Publishing House.

Maharani, S. E., Pribadi, J. S., Santoso, A., Fadillah, & Handayani, M. (2021). Rancang bangun sistem pemotong pada mesin pengupas dan pemotong kentang spiral dengan kapasitas 15 kg/jam. Journal of Surimi, 1(1), 20–27. https://doi.org/10.35970/surimi.v1i1.560

Mhetre, V. M., Surve, A. A., Shirke, P. R., Patil, V. S., Mali, S. A., Swami, K. M., & Gondkar, V. S. (2021). Design and development potato harvesting machine. International Journal of Innovative Studies in Sciences and Engineering Technology, 7(2), 20–26. https://doi.org/10.20431/2455-4863.070205

Olumilua, A. E., Adejumo, B. A., & Adebayo, A. O. (2025). Development and performance evaluation of a commercial and domestic two-feeder slicing machine for Irish potato, plantain and sweet potato. Journal of Natural Science, Engineering and Technology, 24, 56–73. (DOI belum tersedia pada publikasi saat ini.)

Pawar, K. R., Ukey, F., Deshmukh, P., Bansod, K., Jadhav, C., & Aniket, A. (2020). Development of fruit and vegetable slicing machine. International Research Journal of Engineering and Technology, 7(3), 1399–1404. (No DOI available).

Rahman, T. (2023). Sustainable agricultural machinery design for improving food processing efficiency. Open Agriculture, 8(1), 20220232. https://doi.org/10.1515/opag-2022-0232

Sularso, & Suga, K. (2004). Dasar perencanaan dan pemilihan elemen mesin. Pradnya Paramita.

Sugiyanto, D., Rokhani, H., & Novita, D. D. (2022). Design and performance testing of semi-automatic potato slicing machine. Jurnal Teknik Pertanian Lampung, 11(2), 241–252. https://doi.org/10.23960/jtep-l.v11i2.241-252

Wankhede, R., Patil, S., & Kale, P. (2019). Design and fabrication of automatic fruit slicing machine: Testing and performance. International Journal for Scientific Research and Development, 7(3), 297–299. (No DOI available).

Yadollahinia, A., & Jahangiri, M. (2009). Shrinkage of potato slice during drying. Journal of Food Engineering, 94(1), 52–58. https://doi.org/10.1016/j.jfoodeng.2009.02.024