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OPTIMIZING THE UTILIZATION OF ONION CHIP CUTTING MACHINES AND STRENGTHENING LEGALITY AND MARKETING ASPECTS AT DAPUR MOM4G MSMES

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Abstract

Small and medium industries play an important role in driving economic growth and creating job opportunities for the community. One micro-enterprise that contributes to the community's economic activities is the "Dapur Mom4G" onion chip production household business located in Medan City, North Sumatra. This business has been managed by Mrs. Annisa Febriani and her husband since 2015 and is engaged in the production of onion chips as a processed food product that has the potential to be developed as a typical Medan souvenir product. Along with the increasing demand, Dapur Mom4G began to need to increase production capacity and strengthen business management. Based on the results of problem identification with partners, the onion chip production process is still carried out manually, especially at the dough cutting stage. This condition causes a relatively long production time, requires a considerable workforce, and results in uneven size and thickness of slices. The partner's current production capacity is around 80 kg per day. In addition to the production aspect, partners also face obstacles in the legal aspect in the form of processing PIRT distribution permits and trademark registration, as well as marketing aspects that are still dominated by conventional marketing and have not optimally utilized digital media. The objective of this Community-Based Empowerment Program is to increase the capacity and empowerment of partners through the application of technology, strengthening legality, and developing marketing. The implementation method of community service is to provide socialization, training, and mentoring to Dapur Mom4G partners. The solutions provided include: 1) design and implementation of an onion chip cutting machine to speed up the production process and produce more uniform slice sizes; 2) assistance in processing PIRT distribution permits and trademark registration to strengthen product legality and identity; and 3) training and mentoring in the use of digital media to improve promotion and expand marketing reach. Through these activities, partners are expected to be able to increase production efficiency and capacity, strengthen business legality, expand marketing, and develop onion chips as a typical Medan souvenir product. With the training and mentoring, Dapur Mom4G partners are expected to be able to operate the onion chip cutting machine independently according to procedures, perform basic machine maintenance, and implement a more effective and efficient production process. Partners are also able to produce onion chip pieces with more uniform size and thickness and increase production capacity compared to the manual cutting process. Furthermore, through digital marketing training, partners are able to create and manage promotional content, utilize social media as a marketing tool, and expand their product reach. Legal assistance also enhances partners' understanding of the importance of PIRT and trademarks in strengthening the identity, consumer trust, and competitiveness of Dapur Mom4G Onion Chips.

Keywords: Optimization; Machine; Onion Chips; MSMEs; Mom4G

1. INTRODUCTION

Development industry small And medium in Indonesia Keep going show increasing from year to year in line with the support of the central and regional governments through various development, mentoring and business facilitation programs [1] . Small and medium industries play an important role in driving national economic growth, particularly through the creation of added value, as well as providing employment opportunities [2] . Business It is hoped that

small businesses will open up job opportunities and strengthen the community's economy in a sustainable manner [3] One micro-enterprise contributing to job creation is the home-based onion chip business "Dapur Mom4G," located in Medan, North Sumatra. Annisa Febriani and her husband have managed this business since 2015. **Dapur** Mom4G produces onion chips, a highly sought-after processed food product with significant market potential.

Chips onion is a type of food light Which loved by various groups because own ideals savory taste, as well as price Which relatively affordable [4] . The height interest Consumer interest in this product has driven the growth of home-based onion chip businesses, including Dapur Mom4G. As demand increases, business owners are beginning to require additional labor to support the production process. This creates job opportunities for the local community.

In practice, Dapur Mom4G still faces various challenges that hinder its development. The production process is still manual, resulting in suboptimal capacity and efficiency. In a single day, the business can produce around 80 kg of onion chips **,** thus not being able to fully meet the growing market demand. Furthermore, the process of cutting the dough chips onion Still use equipment simple without help Special cutting machines , resulting in inconsistent product size and thickness. This leads to longer production times, lower work efficiency, and inconsistent product quality. others, limited capital and high prices Production machines are a barrier for partners to adopt modern equipment. Partners also face obstacles in terms of business legality, such as suboptimal PIRT distribution permit ownership and the trademark not being officially registered. This situation impacts consumer confidence and limits market expansion opportunities. other there is on aspect marketing, Which until moment This Still dominated by conventional sales and has not yet utilized digital marketing.

Based on problem the, required effort solutions to improve the performance of Dapur Mom4G sustainably. 1) Production aspect, the solution offered is the design and construction of an onion chip dough cutting machine that suits the needs of MSME scale businesses. This machine is expected to be able to speed up the production process and produce chips with uniform shape and thickness, so that production capacity and efficiency can be increased; 2) Legality aspect, assistance is provided in processing PIRT distribution permits and trademark registration as an effort to increase consumer trust and expand market access; 3) Furthermore, marketing aspect, optimization of marketing strategies is carried out through the use of media digital so that Market reach and sales volume of onion chips products can increase.

Research (Bagas, et al., 2025) on Optimizing Production of the Melati Business Group in Losari Village, Malang through the Implementation of a Chip Chopping Machine. The results of the activity showed a significant increase, namely production capacity increased from 15 kg to 50 kg per day, time efficiency increased by 67%, and partner understanding of machine use increased from 45% to 85%. The implementation of the chopping machine has proven effective in increasing productivity, product quality, and business motivation. This program emphasizes the importance of appropriate technology in strengthening the competitiveness of MSMEs and the sustainability of the local economy [5] .

Proposer choose Kitchen Mom4G as partners activity PKM Because location business Located in Medan City, the area is relatively easy to reach and offers significant business development potential. The increasing demand for onion chips creates job opportunities for the local community, supported by the availability of adequate human resources and raw materials.

The benefits of this PKM activity are: 1) the design and construction of an onion chip cutting machine can increase efficiency and production capacity. The use of this machine helps partners produce products with uniform size and thickness and speeds up production times; 2) assistance in processing business legality in the form of a PIRT distribution permit. And registration brand trade give benefit in increase consumer trust, legal protection of products, and opening up opportunities for market expansion; 3) the implementation of digital marketing strategies provides benefits in the form of increasing promotional reach, sales volume of onion chip products and increasing income [6] .

2. IMPLEMENTATION METHOD

The planned activities to be carried out in this Community Partnership Program include socialization activities, training, and mentoring for Onion Chips MSME partners. Kitchen Mom4G. Activity focused on: 1) design get up And Utilization of onion chip cutting machines to increase efficiency, capacity, and consistency of production quality; 2) assistance and facilitation in strengthening business legality **,** especially in managing PIRT distribution permits and trademark registration as an effort to increase consumer trust and competitiveness. product competitiveness; and 3) optimizing marketing strategies, both conventionally and digitally, to expand market reach and increase sales volume. This activity was carried out at the UMKM Dapur Mom4G on July 30, 2026. The detailed stages of the activities to be carried out can be seen in Figure 1.

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Picture 1 Method Implementation Activity

Information:

a. Socialization

The socialization stage is an initial activity that aims to align perceptions between team proposer and partners related objective, room scope, as well as plan implementation PKM activities . At this stage, program presentations were conducted to partners regarding the importance of increasing production efficiency through the application of appropriate technology in the form of onion chip cutting machines, strengthening business legality (PIRT permits and trademark registration), and optimizing product marketing. Socialization was also used to identify readiness partners And agree role as well as not quite enough answer each party during the implementation of the activity.

b. Training

The training phase is implemented to improve the knowledge and skills of partners and workers to support the program's success. The training includes:

1. Training use And maintenance machine cutter onion chips use ensure the production process runs faster, safer, and produces uniform product sizes.
2. Basic training in the application of food safety standards, especially those related to the processed food production process and PIRT permit requirements and trademark management.
3. Training marketing product, including utilization media digital And media social to increase the reach of product promotion and sales.

Training is conducted through direct practice and mentoring, so that partners are expected to be able to operate cutting machines and apply the knowledge gained independently and sustainably.

c. Implementation Technology

The application of technology in this PKM activity is carried out in an integrated manner in three main aspects, namely production, business legality, and marketing, in order to improve the overall performance of the Mom4G Kitchen Chips MSME.

1. Production Aspects

In terms of production, appropriate technology is implemented through the use of an onion chip cutting machine to replace the manual cutting of raw materials. This cutting machine is designed to produce sliced onion chips. chips onion with thickness Which uniform, so that quality product become more consistent and the frying process can take place more efficiently. In addition, the use of the machine cutter capable speed up time production, reduce burden Work power work, and increase daily production capacity. The implementation of this technology is expected to increase efficiency process Work And Power competition MSMEs Kitchen Mom4G in meet ever-increasing market demand.

2. Aspect Business Legality

Regarding business legality, technology implementation is realized through technical assistance in fulfilling PIRT distribution permit requirements and trademark registration. Partners are assisted in implementing food safety standards, structuring production processes, and completing the necessary administrative requirements to support business legality. This legality serves as a crucial foundation for increasing consumer trust, expanding marketing networks, and legally protecting product identity.

3. Marketing Aspects

In terms of marketing, technology implementation focuses on utilizing digital media as a means of product promotion and sales. Partners are assisted in the creation and management of digital marketing media, such as social media and online marketing platforms. Furthermore, packaging and product information presentation are improved to make them more attractive and informative. This marketing technology implementation is expected to expand range market, increase Power competition product, as well as push increase in sales volume.

d. Mentoring and Evaluation

Mentoring done in a way sustainable during program ongoing to ensure all activities are carried out according to objectives. Assistance includes:

1. Mentoring process production use technology
2. Mentoring management permission PIRT And registration brand trade
3. Mentoring strategy product marketing

The evaluation is conducted by comparing conditions before and after the activity, particularly regarding production capacity, business legality, and marketing. The evaluation results are used to measure the program's success.

e. Program Sustainability

The program's sustainability phase aims to ensure that the benefits of PKM activities continue. after program finished. Sustainability realized through ability partners in operating and maintaining technology independently, maintaining business legality, and implementing the introduced marketing strategies. In addition, partners are expected to be able to develop business in a way sustainable And become example for MSMEs similar in the surrounding environment.

3. RESULTS AND DISCUSSION

The PKM program involved one partner, the Dapur Mom4G MSME in Medan, with 20 training participants. Participants were guided by lecturers from Harapan University, Medan. The program employed several methods:

1. Socialization

The implementation phase involved socialization, starting with a presentation by the author, followed by a sharing session and a question-and-answer session as a therapeutic approach to various experiences with community service partners, namely Dapur Mom4G Medan. Each community service team presented based on their respective expertise. Partners also posed questions to the community service team. The implementation of the Community Service Program (PKM) activities can be seen in Figure 2 below.



Picture 2. Implementation Activity PKM

On picture 2 chairman: Yessy Fitri Annisa And each member PKM: Aditi Flower and Uun Novalia Harahap provided material presentations to the participants of the activity in the socialization of the application of the onion chip cutting machine.

2. Training

Team devotion public give material in accordance with his field each. Material The information presented can be seen in table 1 below.

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Table 1. Material PKM

No	Speaker	Program Material
1	Yessy Fitri Annisa	Training marketing product, including utilization media digital And media social to increase the reach of product promotion and sales.
2	Uun Novalia Harahap	Training use And maintenance machine cutter onion chips use ensure the production process runs faster, safer, and produces uniform product sizes.
3	Aditi Flower	Basic training in the application of food safety standards, especially those related to the processed food production process and PIRT permit requirements and trademark registration.

On table 1 containing explanation about expertise each team PKM in socialization Implementation of the onion chip cutting machine. Each team presented their expertise and offered solutions to any problems faced by their partners. This allowed them to provide solutions for their partners.

3.2.1 Material presented by each PKM team

Each material presented is based on the expertise of each PKM team, namely:

a. Training on the use of onion chips marketing applications

Below is the home menu of the onion chips application, which can be seen in image 3 below.

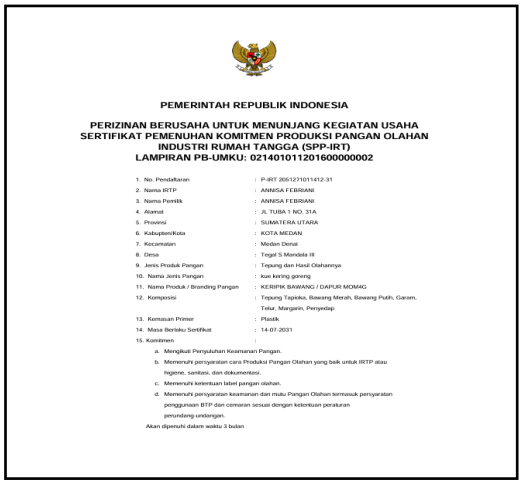


Figure 3 Home menu display

On picture 3 use application Which delivered by Chairman PKM: Yessy Fitri Annisa Presenting material on marketing applications. The application menu consists of: a home menu, a product menu, a shopping cart menu, an about menu, and a contact menu.

b. Assistance in processing PIRT permits and trademark registration

The PIRT distribution permit for onion chips products can be seen in Figure 4 below.



PEMERINTAH REPUBLIK INDONESIA

PERIZINAN BERUSAHA UNTUK MENUNJANG KEGIATAN USAHA
SERTIFIKAT PEMENUHAN KOMITMEN PRODUKSI PANGAN OLAHAN
INDUSTRI RUMAH TANGGA (SPP-IRT)
LAMPIRAN PB-UMKU: 02140101120160000002

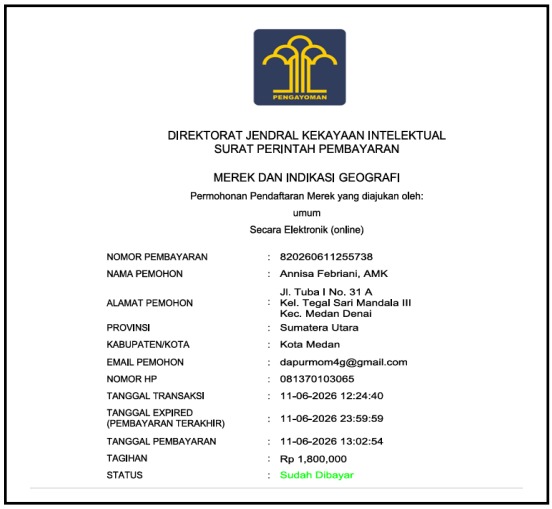
1.	No. Pendaftaran	: P-IRT 3051271011412-31
2.	Nama IRTP	: ANNISA FEBRIANI
3.	Nama Pemilik	: ANNISA FEBRIANI
4.	Alamat	: JL TUBA 1 NO. 31A
5.	Provinsi	: SUMATERA UTARA
6.	Kabupaten/Kota	: KOTA MEDAN
7.	Kecamatan	: Medan Denai
8.	Desa	: Tegal Si Mandala III
9.	Jenis Produk Pangan	: Tepung dan Hasil Olahannya
10.	Nama Jenis Pangan	: kue kering ginseng
11.	Nama Produk / Branding Pangan	: KERIPIK BAWANG / DAPUR MOM4G
12.	Komposisi	: Tepung Tapioka, Bawang Merah, Bawang Putih, Garam, Telur, Margarin, Penyedap
13.	Kemasan Primer	: Plastik
14.	Masa Berlaku Sertifikat	: 14-07-2031
15.	Komitmen	:

a. Mengikuti Penyuluhan Keamanan Pangan.
b. Memenuhi persyaratan cara Produksi Pangan Olahan yang baik untuk IRTP atau higiene, sanitasi, dan dokumentasi.
c. Memenuhi ketentuan label pangan olahan.
d. Memenuhi persyaratan keamanan dan mutu Pangan Olahan termasuk persyaratan penggunaan BTP dan cemaran sesuai dengan ketentuan peraturan perundang-undangan.

Akan dipenuhi dalam waktu 3 bulan

Figure 4 PIRT distribution permit for onion chips

The registration of the Dapur Mom 4G trademark can be seen in Figure 5 below.



DIREKTORAT JENDRAL KEKAYAAN INTELEKTUAL
SURAT PERINTAH PEMBAYARAN

MEREK DAN INDIKASI GEOGRAFI

Permohonan Pendaftaran Merek yang diajukan oleh:
umum
Secara Elektronik (online)

NOMOR PEMBAYARAN	:	820260611255738
NAMA PEMOHON	:	Annisa Febriani, AMK
ALAMAT PEMOHON	:	Jl. Tuba I No. 31 A Kel. Tegal Sari Mandala III Kec. Medan Denai
PROVINSI	:	Sumatera Utara
KABUPATEN/KOTA	:	Kota Medan
EMAIL PEMOHON	:	dapurmom4g@gmail.com
NOMOR HP	:	081370103065
TANGGAL TRANSAKSI	:	11-06-2026 12:24:40
TANGGAL EXPIRED (PEMBAYARAN TERAKHIR)	:	11-06-2026 23:59:59
TANGGAL PEMBAYARAN	:	11-06-2026 13:02:54
TAGIHAN	:	Rp 1,800,000
STATUS	:	Sudah Dibayar

Figure 5. Registration of the Dapur Mom4 G Trademark

c. **Provide training to partners regarding operation, maintenance and work safety in using machines** .

Training on using the machine can be seen in Figure 6 below.



Figure 6 Machine Usage Training

Picture 6 Member team PKM: U un Novalia give presentation to partners And Participants learn how to operate the machine. Below is documentation from the end of the PKM activity, which can be seen in Figure 7:

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Figure 7 Implementation of PKM Activities

Figure 7 The chairman and members, along with partners and other participants, gathered to document the activity. The end result of this activity was that partners were able to produce onion chips with more uniform size and thickness and increase production capacity compared to the manual cutting process. In addition, through digital marketing training, partners were able to create and manage promotional content, utilize social media as a marketing tool, and expand product marketing reach. Legal assistance also increased partners' understanding of the importance of PIRT and trademarks in strengthening the identity, consumer trust, and competitiveness of Dapur Mom4G Onion Chips products.

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c. Mentoring strategy product marketing

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Community service results show that Dapur Mom4G partners were able to improve the onion chip production process through the use of cutting machines. The resulting chips were more uniform in size and thickness compared to manual cutting. The use of the machines also helped increase production capacity and speed up the cutting process, making the work more effective and efficient.

In addition to improving production, partners also gain knowledge and skills in utilizing digital media to support product marketing. Partners are able to create simple promotional content, utilize social media to introduce products, and understand the importance of digital marketing in expanding consumer reach.

Regarding legality, partners increasingly understand the importance of PIRT and trademark ownership as part of strengthening product identity. The mentoring also increased their understanding of the benefits of legality in building consumer trust and enhancing the competitiveness of Dapur Mom4G Onion Chips.

Overall , community service activities improve production, marketing, legality, and partners' ability to develop their businesses more effectively and sustainably. before And after Activities can be seen in Table 2 below.

Table 2. Impact before And After Activity

No	Aspect	Before	After	Impact
1	Production	The onion chips are cut manually using a knife so the size and thickness of the pieces are less uniform.	Cutting using a machine so that the size and thickness of the chips are more uniform.	Product quality and uniformity improved.
2	Production Capacity	Production capacity is around **80 kg/day** .	Production capacity increased to around **130–150 kg/day** .	Production capacity increased by around **62.5–87.5%** .
3	Production Time	The cutting process takes about **4–5 hours/day** .	The cutting process can be done in about **1.5–2 hours/day** .	Cutting time is more efficient, reduced by about **50–70%** .
4	Labor	The cutting process involves about **10 people**	The cutting process can be done by about **1 person** with the help of a machine.	Labor requirements in the cutting process are reduced significantly.
5	Production Skills	Participants' skills in using cutting technology are still limited because they are used to using manual methods.	Participants are able to operate and use the onion chip cutting machine correctly and safely.	Technology skills and abilities increase.
6	Marketing	Marketing is still mostly done conventionally/offline.	Participants are able to create simple promotional content	The product marketing

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			and utilize social media for marketing as well as utilize product marketing websites.	reach becomes wider.
7	Legality	Understanding of the importance of legality and brand identity is still limited.	Participants understand the importance of PIRT and trademarks in supporting marketing and consumer trust.	Awareness of business legality is increasing.

4. CONCLUSION

Based on the activities carried out by the PKM team at Dapur Mom 4 G, it can be concluded that: The use of cutting machines helps partners in the onion chips production process so that the cutting work becomes easier, faster, and produces more uniform cuts. PIRT management assistance helps partners understand the importance of food product legality and supports product readiness for wider marketing. Trademark registration helps partners establish a clear product identity and provides protection for the onion chips brand developed as a typical Medan souvenir. Utilizing digital marketing helps partners promote their onion chips through digital media, expanding their marketing reach and increasing product recognition among consumers.

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REFERENCES

[1] L. H. Piliang, "Public Administration Journal Vol. 8 No. 1 (2024) UMKM PENGGERAK RODA PEREKONOMIAN NASIONAL," *Public Adm. J.*, vol. 8, no. 1, pp. 1–8, 2024.

[2] A. Fidela, A. Pratama, and T. Nursyamsiah, "Pengembangan Usaha Mikro Kecil dan Menengah (UMKM) dengan Program Pemasaran Desa Jambu Raya di Desa Jambu , Kabupaten Sumedang," *J. Pus. Inov. Masy.*, vol. 2, no. 3, pp. 493–498, 2020.

[3] K. Karimah, Muhtadi, R, "STRATEGI PENANGGULANGAN PENGANGGURAN MELALUI PERAN USAHA KECIL MENENGAH (UKM) GENTING," *Ar-RibhuManajemen Ekon. dan Keuang. Syariah*, vol. 2, no. 01, pp. 107–131, 2021.

[4] E. V. Putri, Dinda Dwi, Haryanto, "Permintaan Keripik Bawang Dengan Metode Trend Moment Pada UMKM Keripik Bawang Asli," *J. JUREKSI (Jurnal Rekayasa Sist.*, vol. 2, no. 3, pp. 1529–1540, 2024.

[5] et al Prakoso, Bagas Eka, Pratomo, Danang Yugo, "I-Com : Indonesian Community Journal Optimalisasi Produksi Kelompok Usaha Melati Kelurahan Losari Malang," *I-Com Indones. Community J.*, vol. 5, no. 3, pp. 1600–1610, 2025.

[6] L. W. Kristanti, M. Afif, and A. F. Ananda, "Pendampingan Legalisasi Produk Usaha Mikro , Kecil dan Menengah bagi Pelaku UMKM Kelurahan Petungasri Kecamatan Pandaan Kabupaten Pasuruan," *BERDAYA Ekon. J. Pengabdi. Masy.*, vol. 1, no. 2, pp. 60–74, 2023.

[7] N. Dimas, I. Dewi, Z. Latiefa, A. Rosanto, and S. Amin, "Jurnal Bina Desa Perancangan Website sebagai Media Digital Marketing untuk Mendorong Pemasaran UMKM Pendahuluan," *J. Bina Desa*, vol. 3, no. 3, pp. 176–180, 2021.

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