



Eximia Journal
(ISSN 2784-0735)

Vol. 11

2023

Potential demand and supply of beef cattle in Indonesia

Ni Made Ayu Gemuh Rasa Astiti¹, Komang Nita Wedaningsih², I Kadek Wira Parwata³

¹Faculty of Agriculture, Warmadewa University, Denpasar, Indonesia, ²Magister of Science of Agriculture, Postgraduate Program, Warmadewa University, Denpasar, Indonesia, ³Department Animal Husbandry, Faculty of Agriculture, Warmadewa University, Denpasar, Indonesia

ayugemuh@gmail.com

Abstract. This research is a literature study on the demand and supply of beef in Indonesia. This study aims to determine the demand and supply and stock of beef in Indonesia. The method used in this study is qualitative research using field research techniques, namely direct observation of the object under study in order to obtain relevant data. The data used in this research are primary data and secondary data. The results of the study concluded that beef cattle are the largest meat contributor from the ruminant group to national meat production so that this livestock business has the potential to be developed as a profitable business. The increase in population and public awareness of consuming highly nutritious protein has made the demand for beef tend to increase from year to year. However, the fact is that beef production in Indonesia has not been able to meet public demand or consumption. Various efforts have been made by the government to maximize and increase beef production, but in reality these efforts have not been successful, so the government imports to meet domestic needs.

Keywords. Demand, Supply, Beef Cattle

I. Introduction

The development of the livestock sub-sector is an integral part of the development of the agricultural sector and is part of a food security development system, development of quality human resources, trade in food and non-food commodities and environmental development. Livestock development has a very important role in the development of the national economy, because the demand for animal protein will continue to increase along with an increase in population, increase in income and increase in public awareness to consume highly nutritious food, as a result of an increase in the average educational level of the population, [1]. One of the agricultural sectors that has great potential to be developed is beef cattle farming which is part of the livestock sub-sector. Beef cattle are a type of large ruminant livestock kept for the main purpose of producing meat, so they are also called beef cattle. The characteristics of beef cattle are having a large body, maximum meat quality and easy marketability, fast growth, high number of carcasses and good meat quality, [2]. Beef cattle are the largest meat contributor from the ruminant group to national meat production so that this livestock business has the potential to be developed as a profitable business [3]. Beef cattle have the biggest contribution

as a producer of meat, as well as to meet food needs, especially animal protein. The need for beef continues to increase along with the increasing public awareness of the importance of balanced nutrition. This causes the demand for beef to continue to increase every year [4]. If this is not addressed quickly, there will be a decrease in the supply of beef cattle, causing a significant comparison of the increase in the amount of public consumption with an unequal increase in the number of population [5]. The number of beef cattle available in Indonesia has not been able to meet the high public demand for meat products. The availability of cattle nationally in 2022 is estimated at 436,704 tons, up from 423,443 tons in 2021. Indonesia is estimated to still have a deficit of 207,199 tons. The government has also set a reserve stock of 58,886 tons so that import needs reach 266,065 tons [6]. Breakthrough policy efforts must be studied, namely how to minimize imports by strengthening domestic production which is more profitable for breeders. One of the efforts that can be made by the government to reduce dependence on beef imports is through the development of beef cattle farms.

Formulation of the problem

1. What is the potential for beef cattle farming in Indonesia?
2. How is the potential demand and supply of beef in Indonesia?

II. Research methods

The method used in this research is qualitative research using field research techniques, namely direct observation of the object under study in order to obtain relevant data. The types of data used in this research are primary data and secondary data. Primary data is data obtained directly, while secondary data is data obtained from existing sources. Primary data is the result of observations and interviews with beef cattle breeders and traders as respondents using a questionnaire, while secondary data was obtained from literature books relevant to the research and journals and institutions related to this research.

III. Results and discussion

Beef cattle are cattle reared for the main purpose of producing meat [7]. Beef cattle are commonly referred to as beef cattle. The characteristics of beef cattle are large bodies, rectangular or beam-shaped, maximum meat quality, fast growth rate, reach maturity quickly, high feed efficiency, easy to market [8]. Beef cattle are a special breed of cattle reared for fattening because of their characteristics, such as fast growth rates and good meat quality. These cows are generally used as feeder cattle, reared intensively for several months, so that the ideal body weight gain for slaughter is obtained [9]. Beef cattle are the largest meat contributor from the ruminant group to national meat production so that this livestock business has the potential to be developed as a profitable business. Beef cattle in Indonesia are the main source of meat after chicken. This can be seen from the consumption of chicken meat by 64%, beef 19%, pork 8%, with others 9%, [10]. Beef cattle have long been kept by some communities as savings and labor to cultivate the land with traditional maintenance management, [11]. The development of beef cattle in Indonesia has bright prospects because it is supported by the potential for forage resources, both types of grass (graminae) and legumes (leguminosae) as well as agricultural waste from food crops and plantations. Other feed resources are concentrates from agro-industry waste or by-products. This potential is supported by the need for beef, which continues to increase every year as the population increases, [12]. Another supporting factor is the commitment of the central and local governments to the livestock sub-sector which is reflected in the policy to make livestock as your sub-sector with beef cattle as one of the leading livestock

commodities, [13]. The development of beef cattle has many benefits, especially to meet the needs of the community. Several factors can stimulate the development of beef cattle, namely: 1) The condition of the area with a tropical climate is suitable for the cultivation of beef cattle, especially local cattle, such as Bali cattle; 2) Beef cattle cultivation is a community culture that has been hereditary; 3) Feed resources in the form of forage, agricultural waste, and agro-industrial waste are available throughout the year; 4) Consumer demand for meat and processed beef products continues to increase; 5) Local cattle business developed by smallholder farms is not affected by the economic crisis; 6) The existence of government policies through various programs and activities for the development of beef cattle; 7) Service support for research, education, training, counseling and financing institutions, [14]. Beef cattle rearing business has good prospects in the future. This is because beef is always needed to meet the food and nutritional needs of the community. The ptotong cattle fattening business has very attractive prospects. According to Yulianto and Saparinto (2011) [15], the prospects for fattening beef cattle are as follows: Economical Value Fattening cattle is one of the most attractive businesses compared to other livestock [16]. This is because fattening cattle requires a short maintenance time with optimal meat products and decent yields. Cattle fattening among the people has many benefits, including: 1) meat is the main product; 2) Cow dung can be used for fertilizer and biogas. If the beef cattle fattening business is managed professionally with the aim of producing optimal meat, it is hoped that it will produce a lot of good quality meat so as to stabilize the price of meat on the market, even if it is possible for beef to become an export commodity. The need for animal meat/protein Cattle are livestock that can support the need for meat consumption. Even though their body size is relatively large when compared to other livestock, cows can be raised simply, easily, and are liked by various groups of people [17]. Fulfilling the public's need for animal protein is closely related to the supply of meat from within the country.

Indonesia's fertile land is a very valuable investment for fattening cattle and is supported by a tropical climate. Indonesia, with its vast land area located on the equator and supported by a tropical climate, has the following impacts: 1) rich in natural feed ingredients that can be used as cattle feed; 2) fertile land that is managed as agricultural land will produce by-products, in the form of agricultural waste that can be used as cattle feed ingredients; 3) the existing climate is suitable for the growth and productivity of cattle. There are several advantages of beef cattle products, including: high nutritional content, beef tastes good, the color of the meat is fresh red-brown, and the fiber is relatively fine. In addition, beef has a fairly good nutritional content for the health of the human body when consumed in the appropriate portion.

Beef has a protein content of 18.0%; fat 3.0%; carbohydrates 1.2%; ash content 0.7%; water content 75.5; and vitamin A 600 IU/g. [18] and easy to trade. The business of fattening beef cattle is relatively profitable because until now the demand for meat is still showing an increasing trend. The trade carried out in beef cattle after the slaughtering process is by selling the meat in the form of chips, carcass retail chips. The unit weight of carcass retail fractions can be in units of weight such as 1.2 kg and so on. Beef cattle fattening business is more practical because it requires shorter maintenance time. The fattened calves are also mature, so management and care are relatively easier than calves. The conveniences include: 1) fattening beef cattle is only for fattening the meat, while raising cattle from calf (calf) is not only for growth, but also for body development. 2) relatively short rearing time provides less risk, whether the risk of cattle disease, death, changes in feed ingredient prices, or other factors [19].

3) fattening beef cattle can only use bulls on the grounds that bulls have faster growth than females [20], have more meat weight, fattening bulls does not affect the production

process. Faster capital turnover Beef cattle fattening business requires less maintenance time than cattle rearing business. This is because the cattle are fattened using mature calves so that the rearing time can be shortened by about three months. Business capital issued for working capital and production costs can be quite a lot according to the number of cows and the maintenance system carried out. However, with the short maintenance time, of course, the capital turnover is relatively faster to return [21].

Beef Demand and Supply Potential Indonesia has a huge potential for beef demand and supply. As the fourth most populous country in the world, Indonesia has a large market for beef. In addition, beef consumption in Indonesia continues to increase every year, along with economic growth and changes in people's lifestyles [22]. Viewed from the supply side, Indonesia has many cattle farms spread throughout the territory of Indonesia, but cattle production in Indonesia is still insufficient to meet domestic demand, so Indonesia still imports a lot of beef every year. This is due to the low productivity of cattle in Indonesia, cattle health problems and the lack of supporting infrastructure for cattle farming. Viewed from the demand side, Indonesian people are increasingly turning to the consumption of beef as a source of protein, along with increasing incomes and increasingly modern lifestyles [23]. There are still many Indonesian people who cannot afford beef because the price is relatively expensive compared to other protein sources. Several factors affect the demand for and supply of beef in Indonesia, including: Population growth: Population growth in Indonesia has an impact on increasing demand for beef. The more population, the greater the demand for beef. 2. Economic growth: High economic growth also has an impact on increasing demand for beef. The more people's income increases, the more people can afford to buy beef. 3. Government policy: Government policy also influences the demand and supply of beef in Indonesia. For example, the existence of a strict import policy will affect the supply of beef, while the existence of subsidies or incentives from the government will affect the demand for beef. 4. Price of beef: The price of beef also influences the supply and demand. If the price of beef increases, the demand will decrease, whereas if the price of beef decreases, the demand will increase. 5. Cattle availability and beef production: Cattle availability and meat production also affect beef supply in Indonesia. If the availability of cattle and meat production is low, the supply will decrease, whereas if the availability of cattle and meat production is high, the supply will increase. Demand and Supply of Beef is an important food ingredient in meeting nutritional needs. The higher nutritional content of beef is protein, this is because meat contains several essential amino acids that are complete and balanced. The protein content in the muscle is 16% - 22%. In general, the chemical composition of meat consists of 75% water, 18% protein, 3.5% fat and 3.5% soluble non-protein substances [24]. Another advantage, beef protein is more easily digested than protein derived from plants, [25]. Meeting the demand for beef in Indonesia comes from domestic production and imports. Beef imports aim to meet the shortage of domestic production. Based on data from FAO (2022), beef imports in Indonesia will continue to increase until 2020. The increase in imports mainly occurred due to public demand which also continued to increase without an increase in domestic production, [26]. Demand for beef consumption continues to increase in line with increasing population and social welfare. For the public, beef is still considered a luxury item with the characteristics of demand being responsive to price changes and a normal good characterized by an increase in people's income causing demand to increase. However, beef has a typical price that tends to rise, that is, when the price of meat on the market rises, it will not fall again even though the availability of meat is sufficient, [27]. Based on the standard requirement for beef in Indonesia, beef consumption in Indonesia is still very low. Factors causing the low level of beef consumption in Indonesia are beef prices which

are relatively expensive for most people, changes in consumption patterns and people's income levels. Consumption of beef in Indonesia is only 2.31 kg/capita/year out of a population of 258,705,000 people in 2016, [28]. The total national beef consumption in 2017 was 657,609 tons, this figure has not been able to be fulfilled by Indonesia's domestic meat production, which was only 486,320 tons in the same year. It is estimated that the demand for beef in Indonesia will increase every year in line with the economic improvement, people's living standards, people's lifestyles and globalization and urbanization. The need for Indonesian beef is supplied from three sources, namely local cattle, imported beef, and imported beef. To cover the short supply of domestic beef, imports were made from a number of countries, especially from Australia and New Zealand, [29]. In the future the demand for beef consumption will increase in line with increasing population growth and economic growth, which will have an impact on increasing people's welfare. The following is the population, national beef supply and national beef demand for 2010-2018, as shown in table 1.

Table 1. Total Population, Production and Consumption of National Beef

Year	Resident	Offer	Request
2010	235.518.800,00	436.450.000,00	392.168.240,79
2011	241.990.700,00	485.335.000,00	422.477.051,41
2012	245.425.200,00	508.905.000,00	445.166.469,04
2013	248.818.100,00	504.819.000,00	495.079.804,86
2014	252.164.800,00	497.669.000,00	541.767.952,96
2015	255.461.700,00	506.660.000,77	583.272.004,48
2016	258.705.000,00	518.484.000,03	649.258.549,70
2017	261.890.900,00	486.320.000,00	687.088.964,48
2018	265.015.300,00	496.302.000,00	708.056.222,24

Source : Moeljono, 2020 [30].

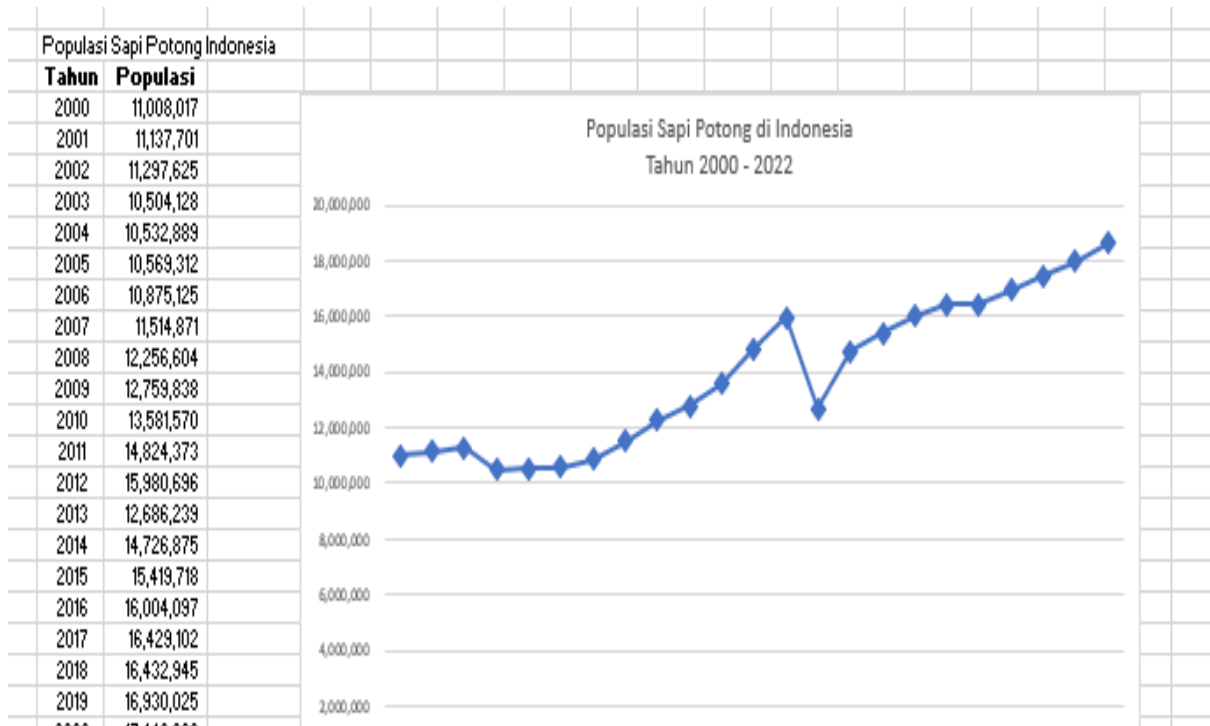
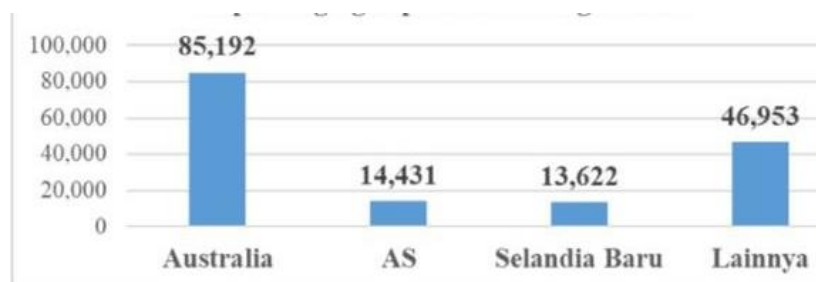


Figure 1. Beef Cattle Population in Indonesia

Demand for beef from year to year has increased. Apart from being influenced by an increase in population, an increase in people's income, this increase was also influenced by people's knowledge of the importance of consuming animal protein. Fulfilling protein needs is one way to improve people's nutritional status, therefore the demand for beef tends to increase. This increase in beef demand has not been matched by an increase in domestic beef production so that the national supply of beef is still experiencing a shortage. Several efforts have been made by the government to spur domestic production, such as 1) developing animal feed 2) improving the quality of seeds through artificial insemination programs 3) disease eradication programs. The government has also made efforts to empower people's businesses with the concept of smallholder livestock industry in the form of people's nucleus enterprise (PIR). However, these efforts have not been successful and implemented optimally. Therefore, to meet demand, the government imports. The shortage of beef supply in Indonesia is quite large and triggers large imports of livestock from several countries. Beef imports in Indonesia from several countries can be seen in the following figure:



Source: <https://www.bps.go.id>, 2017

Figure 2. Beef Imports by Country of Origin

In 2017 the government imported around 160 thousand tons of beef. 53% of imported beef comes from Australia. Other countries that also import beef are the United States and New Zealand with a share of 9% each, and Japan, Malaysia and Singapore with a share of less than 1%, [31] (bps.go.id. 2017). The high number of imports in the national beef commodity makes Indonesia a Net Import Country. It is very ironic that with a large and wide area, Indonesia is a Net Beef Import Country. Considering that Indonesia is a net beef importer and the importance of fulfilling food by utilizing local resources, the government is making several efforts to increase local beef production. The effort is in the form of implementing a beef self-sufficiency program. As for several operational activities in the Beef Self-Sufficiency Program (PSDS), namely livestock and beef import policies in the form of reducing meat and feeder cattle imports, as well as increasing imports of breeding cattle. The enactment of these policies is expected to increase beef production from local beef cattle.

III. Conclusion

Beef cattle are the largest meat contributor from the ruminant group to national meat production so that this livestock business has the potential to be developed as a profitable business. The increase in population and public awareness of consuming highly nutritious protein has made the demand for beef tend to increase from year to year. However, the fact is that beef production in Indonesia has not been able to meet public demand or consumption. Various efforts have been made by the government to maximize and increase beef production, but in reality these efforts have not been successful, so the government imports to meet domestic needs.

References

- [1]. Nur, Y. H., Nuryati, Y., Resnia, R., & Santoso, A. S. (2012). Analisis faktor dan proyeksi konsumsi pangan nasional: Kasus pada komoditas: beras, kedelai dan daging Sapi. *Buletin Ilmiah Litbang Perdagangan*, 6(1), 37-52.
- [2]. Priyanto, R., Fuah, A. M., Aditia, E. L., Baihaqi, M., & Ismail, M. (2015). Peningkatan produksi dan kualitas daging sapi lokal melalui penggemukan berbasis sereal pada taraf energi yang berbeda. *Jurnal Ilmu Pertanian Indonesia*, 20(2), 108-114.
- [3]. Rusdiana, S. (2019). Fenomena kebutuhan pangan asal daging dapat dipenuhi melalui peningkatan usaha sapi potong di petani. *SOCA J. Sos. Ekon. Pertan*, 13(1), 61.
- [4]. Rusono, N. (2020, January). Peningkatan Produksi Daging Sapi untuk Mewujudkan Kedaulatan Pangan Hewani. In *Prosiding Seminar Nasional Teknologi Peternakan dan Veteriner* (pp. 12-22).
- [5]. Ningrum, S. N. J. E. (2016). *Faktor-faktor yang mempengaruhi permintaan daging sapi di indonesia* (Bachelor's thesis, Fakultas Sains dan Teknologi Universitas Islam Negeri Syarif Hidayatullah Jakarta).
- [6]. Danasari, I. F., Harianto, H., & Falatehan, A. F. (2020). Dampak kebijakan impor ternak dan daging sapi terhadap populasi sapi potong lokal di Indonesia. *Jurnal Ekonomi Pertanian dan Agribisnis*, 4(2), 310-322.
- [7]. Sukada, I. K., Suberata, I. W., & Suarta, I. G. (2016). Potensi Ternak Sapi Potong, Sapi Perah dan Kerbau sebagai Penghasil Daging di Kabupaten Nusa Tenggara Timur. *Majalah Ilmiah Peternakan*, 19(3), 164173.
- [8]. Astiti, N. M. A. G. R. (2018). Sapi Bali dan Pemasarannya. *Jayapangus Press Books*, i-106.

- [9]. Syarifuddin dan B. Hartono. 2019. Agribisnis Sapi Potong (Teori dan Aplikasi Usaha). Penerbit Media Nusa Creative : Malang.
- [10]. Badan Pusat Statistik. 2011. Pendataan sapi potong sapi perah (PSPK 2011) Nasional. ISSN/ISBN : 978-979-064-318-5.
- [11]. Suryana, S. (2009). Pengembangan usaha ternak sapi potong berorientasi agribisnis dengan pola kemitraan.
- [12]. Sudarwati, H., & Susilawati, T. (2013). Pemanfaatan sumberdaya pakan lokal melalui integrasi ternak sapi potong dengan usahatani. *TERNAK TROPIKA Journal of Tropical Animal Production*, 14(2), 23-30.
- [13]. Rusdiana, S., & Praharani, L. (2018). Pengembangan peternakan rakyat sapi potong: kebijakan swasembada daging sapi dan kelayakan usaha ternak. In *Forum Penelitian Agro Ekonomi* (Vol. 36, No. 2, pp. 97-116).
- [14]. Sahara, L., dan Z. Fanani. 2019. Pengembangan Sapi Potong Bebas Logistik Pakan (Peternakan Tropik Berkelanjutan dan Ramah Lingkungan). Penerbit Media NusantaraCreative : Malang.
- [15]. Yulianto, P., dan C. Saporito. 2011. Penggemukan Sapi Potong Hari Per Hari 3 Bulan Panen. Penerbit Penebar Swadaya : Jakarta.
- [16]. Wardatul, U. (2022). *PROSPEK PENGEMBANGAN USAHA PENGEMUKAN SAPI DI KECAMATAN SUKAMULIA KABUPATEN LOMBOK TIMUR* (Doctoral dissertation, Universitas Mataram).
- [17]. Simatupang, P., Jamal, E., & Togatorop, M. H. (1994). Sistem gaduhan sapi tradisional Bali: Faktor pendorong, penopang dan karakteristiknya.
- [18]. Agustina, K. K., Cahya, I. M. R. D., Widyantara, G. M., Swacita, I. B. N., Dharmayudha, A. A. G. O., & Rudyanto, M. D. (2017). Nilai gizi dan kualitas fisik daging sapi bali berdasarkan jenis kelamin dan umur. *Buletin Vet. Udayana*, 9(2), 156-163.
- [19]. Astiti, N. M. A. G. R., Yudiastari, N. M., Rukmini, N. K. S., & Sirajuddin, S. N. (2023). Business Analysis of Fattening Bali Cattle Post Pandemic Covid-19. *Journal of Survey in Fisheries Sciences*, 10(1), 1445-1455.
- [20]. Wahyuni, M., Nandhini, S., Rahmadn, A., & Maha, D. B. (2023). Analisis Pertumbuhan Dan Reproduksi Ternak Lembu di Desa M. Petarum Kabupaten Karo. *BEST Journal (Biology Education, Sains and Technology)*, 6(1), 57-63.
- [21]. Syukri, Y. K., & Fitrianti, R. N. (2023). KONSUMSI DAGING SAPI DI KABUPATEN SAMPANG. *Maduranch: Jurnal Ilmu Peternakan*, 8(1), 33-38.
- [22]. Faiqoh, N. K. (2023). *Pengaruh Perilaku Konsumen Terhadap Keputusan Pembelian Ayam Broiler Di Pasar Modern Kota Bekasi* (Doctoral dissertation, UPN Veteran Jawa Timur).
- [23]. Sofyan, M., & Mare, S. S. (2023). Faktor yang Mempengaruhi Penggunaan Daging Sapi impor Pada Cost di Hotel Grand Dafam Ancol Jakarta. *JAMBIS: Jurnal Administrasi Bisnis*, 3(2), 129-136.
- [24]. ERSA, S. (2023). *MARINASI DAGING SAPI BALI MENGGUNAKAN BAWANG PUTIH (Allium sativum L.) UNTUK MENINGKATKAN KUALITAS FISIK DAN MENURUNKAN KADAR LEMAK* (Doctoral dissertation, Universitas Mataram).
- [25]. Nopriani, U. 2016. Efektivitas penggunaan sodium tripolifosfat terhadap daya awet daging sapi pada penyimpanan suhu ruang. *Jurnal AgroPet*. 13 (2) : 65-71.
- [26]. Cahyo, D. N., dan H. Purwaningsih. 2022. Analisis forecasting dan faktor yang mempengaruhi impor daging sapi indonesia. *Prosiding Seminar Teknologi dan Agribisnis Peternakan IX*. 9 : 457-464.

- [27]. Moeljono. 2020. Pola permintaan dan penawaran ketersediaan daging sapi nasional tahun 2030 dengan pendekatan forecasting. *Majalah Ilmiah Solusi*. 18 (1) : 117-132
- [28]. Nurprahara, A. A. (2023). Sikap Peternak Terhadap Asuransi Usaha Ternak Sapi (AUTS) di Kecamatan Weru Kabupaten Sukoharjo.
- [29]. Aji, P. S. (2023). *ANALISIS FAKTOR-FAKTOR YANG MEMENGARUHI IMPOR DAGING SAPI DI INDONESIA* (Doctoral dissertation, Universitas Islam Indonesia).
- [30]. Harmini, H., Asmarantaka, R. W., & Atmakusuma, J. (2011). Model dinamis sistem ketersediaan daging sapi nasional. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi dan Pembangunan*, 12(1), 128-146.
- [31]. <https://www.bps.go.id/publication/2017/07/26/b598fa587f5112432533a656/statistik-indonesia-2017.html>