



Beginning of Fasting Based on the Javanese Aboge and Asapon Calendars

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Abstract

The Javanese calendar has been in use since July 8, 1633 AD, during the time of Sultan Agung. In the Javanese calendar, there is a cycle called kurup. Aboge is one of the kurup in the Javanese calendar, the third kurup after Awahgi and Amiswon. Currently, the Javanese calendar has reached the fourth circle, namely Asapon. Even though it is kurup, Aboge is special because Aboge is seen as a religious sect. Regarding determining the beginning of fasting and other religious holidays, Aboge has its own method based on the Javanese-Aboge Calendar, better known as the Aboge Calendar. This research was made to explain the inconsistency in determining the start of fasting calculated by the Aboge and Asapon calendars, compared to government regulations. The research method is a literature study and a case study surveying government regulation regarding the beginning of fasting and Eid al-Fitr. The study results show that both the Aboge Calendar and the Asapon Calendar are not appropriate when used as a guide for determining the implementation of religious holidays.

Keywords: Aboge, Asapon, Beginning of Fasting, Eid al-Fitr

1. Introduction

Currently, in the Unitary State of the Republic of Indonesia, the authority to determine the beginning of fasting is held by the government of the Republic of Indonesia, in this case, the Ministry of Religion. However, religious organizations such as Muhammadiyah have the authority to determine the start of fasting themselves. Different bases or methods of determining the start of fasting can result in differences in the start of fasting. Because the basis for determining the beginning of fasting is guided by the hadith of the Prophet Muhammad S.A.W., the difference at the beginning of fasting, if it occurs, is seen as a necessity.

This is different from the initial determination of fasting by the Aboge community. The beginning of fasting is determined by the Aboge Calendar, which was actually constructed not to determine the fall of major religious days. The Aboge calendar is designed to determine the time for Javanese cultural traditions to be carried out so that their implementation can be determined with certainty. However, because the Aboge Calendar almost coincides with the Hijri Calendar, in the end, religious celebrations are also carried out according to the Aboge Calendar. As a result, fasting, Eid, sacrifice and others are seen as Javanese cultural traditions whose implementation is determined by the Aboge Calendar and without being guided by the hadith of the Prophet Muhammad S.A.W. For example, in the Aboge community, fasting is always observed for 30 days, whereas according to the hadith of the Prophet Muhammad S.A.W., fasting is 29 days or fulfilled to 30 days (Prabowo et al., 2017).

Apart from that currently, the Asapon is already in a black hole. This means that the Javanese calendar for kurup Aboge which then produces the Aboge Calendar must be abandoned and switched to the Asapon Calendar. However, the Aboge community refused to switch and maintained the Aboge Calendar (Djamaluddin, 2001; Amin, 2018; Prabowo et al., 2020; Sudirman et al., 2022). As with the Aboge Calendar in the Asapon Calendar, the fasting period is always 30 days. This means that neither the Aboge Calendar nor the Asapon Calendar should be used to determine the implementation of religious holidays.

One of the Cikakak Village Communities, Wangon District, Banyumas Regency is known as an adherent of Alip-Rebo-Wage (Aboge) Islam. The term Aboge is attached because the people of Cikakak village use the Aboge Calendar to determine every religious holiday and traditional celebration (Kholifah et al., 2016). The Aboge Calendar establishes rules that are fixed, unchanging, and apply throughout time (Vallado, 2001; Prabowo et al., 2020). The

principles in the Aboge Calendar are also used in the Asapon Calendar, with some differences as explained in the results and discussion. With these rules, the Aboge community in Cikakak determines the time of Maulud Nabi, the start of fasting, the duration of fasting, Eid al-Fitr, Eid al-Adha and traditional celebrations such as changing Jaro, Rwanda Bojana and others. This shows that the implementation of the Aboge Calendar in Cikakak is used both for determining the implementation of cultural traditions and religious holidays.

Prabowo et al. (2020) presented a mathematical model for determining the length of fasting in the Aboge community. Meanwhile, Syahrin et al. (2015) reported the results of their study regarding the implementation of the Javanese Calendar (Aboge) at the Kasepuhan Palace, Cirebon. Research by Syahrin et al. (2015) and Prabowo et al. (2020) provide indications that the Aboge Calendar is used to determine religious holidays. Likewise, the people in Cikakak, Mrebet and Wakal use the Aboge Calendar for two functions, tradition and religion (Utami & Sayuti, 2020; Ahmed et al., 2022). However, some research results show that the Islamic Javanese calendar of the Aboge system is only used for carrying out traditional ritual ceremonies, not for carrying out worship such as fasting or Eid al-Fitr and Eid al-Adha.

In terms of celebrating traditions, the use of the Aboge Calendar does not pose a problem. However, in religious celebrations, there are often differences in the provisions stipulated by the government through the Ministry of Religion. For example, adherents of Aboge Islam will forever fast during Ramadan for 30 days, the beginning of fasting is almost always different from government regulations. Likewise, Eid al-Fitr and Eid al-Adha which are almost certain to be different from government regulations. To understand why this happens is to understand the rules used in the Aboge Calendar. In this article, these rules will be explained in the form of a Year Code and Month Code. Likewise, the rules or principles used to build the Asapon Calendar.

The purpose of this study is to explain the inconsistency in determining the start of fasting calculated using the Aboge and Asapon calendars, compared to government regulations. The structure of this article is an introduction, research methods, construction of the Aboge calendar, construction of the Asapon calendar, implementation of the Aboge Calendar and the Asapon Calendar in determining the start of fasting, comparisons of determining the start of fasting with government regulations and drawing conclusions.

2. Materials and Methods

2.1. Materials

This research was completed with a literature study. In addition, a data survey was conducted regarding the start date of fasting from 2006 – 2022. These data were compared for suitability or accuracy with the start of fasting according to the Aboge Calendar and the Asapon Calendar.

2.2. Methods

The steps taken in this study were (1) constructing the Javanese Calendar, (2) constructing the Javanese-Aboge Calendar, (3) constructing the Javanese-Asapon Calendar, (4) comparing the start of the fast determined by the government with the calculation results using the Aboge Calendar and Asapon calendar, and (5) draw conclusions.

3. Results and Discussion

3.1. Javanese Calendar Construction

Sultan Agung initiated the Javanese calendar by replacing the Saka calendar, which was based on the sun's rotation, with the Javanese calendar system, which was based on the moon's rotation (Geertz, 1976). The sun-based calendar is called the syamsiah/miladiyah or solar system, and the month-based calendar is called the lunar or lunar system.

The Hijri calendar was clearly used at the beginning of the Javanese calendar, referring to history. An important difference between the use of the Javanese calendar and the Hijri calendar is that the Javanese calendar is positioned as a cultural calendar, so when the Javanese calendar was created by Sultan Agung, the important role of the Hijri calendar was maintained. In this case, the Hijriyah calendar determines the start of fasting and religious holidays, although its implementation considers the new moon and reckoning.

The Javanese calendar system uses a two-day cycle, namely a weekly cycle consisting of seven days, namely Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday/Sunday, and a weekly/market cycle consisting of five market days, namely Pon, Wage, Kliwon, Legi, Pahing. All of these building elements are each a cycle. Another element in the Javanese calendar is selapan/selapanan which is a 35-day cycle. Selapanan is a combination of day and market. In the Javanese calendar, all building elements, starting from the market, day, month, year, windu and kurup, are always named (Geertz, 1976; Ginaya, 2018). For example, the Wage market, Rebo day, Alip Year, Windu Adi, and Kurup Aboge.

The Javanese calendar is divided into twelve months with the names Sura, Sapar, Mulud, Bakda Mulud, Jumadil Awal, Jumadil Akhir, Rejeb, Ruwah, Pasa, Sawal, Dulkangidah, Besar. Months with odd serial numbers have a duration of 30 days, and months with even serial numbers have a duration of 29 days. The Javanese calendar is a

calendar based on the circulation of the moon. The age of 1 year in the lunar calendar system is 354 $\frac{3}{8}$ days or 354 days 9 hours. To fulfil it, the age of 1 year is made 354 or 355 days, so that the age of one Javanese calendar year is 354 days (short/basitoh year) and 355 days (long/leap year). The addition of 1 day in a leap year is done in the order of the 12th month. As a result, the 12th month in leap years, which was originally 29 days old, was increased by 1 to 30 days. In the Javanese calendar system, the short year is called wastu and the long year is called wuntu.

The Javanese calendar is a calendar with an 8-year cycle. For convenience, each year of the eight years is named, starting from the year Alip, Ehe, Jimawal, Je, Dal, Be, Wawu, Jimakir. After the year Jimakir will return again to the year Alip. This 8-year cycle is called windu. Like the year, the windu is also named in the order Adi, Kuntara, Sengara and Sancaya.

The age of 1 year on the lunar calendar system is 354 $\frac{3}{8}$ days. The $\frac{3}{8}$ fraction inspired us to divide the year into 8-year cycles, with 3 leap years and 5 lunar years. Leap years fall on the order of the 2nd, 5th and 8th years, namely in the years named Ehe, Dal and Jimakir years. Therefore, the month of Besar for the years Ehe, Dal and Jimakir are 30 days old. The number of days in a 1 windu cycle is $(5 \times 354) + (3 \times 355) = 2835$ days. In addition, there is a larger cycle, which is a cycle of once every 120 years, or a cycle of once every 15 windu. This cycle is called kurup. The number of days in 1 menstrual cycle is $(15 \times 2835) = 42,525$ days. Kurup comes from the word letter. The bracket cycle means that there is a change/change of letters every 120 years, starting with the letters Awahgi, continuing to the letters Amiswon, Aboge until today it has arrived at the letters Asapon.

Each kurup is named based on the order of the first year, the first day and the first market for the 1st Sura. In the order of the names of the years for 1 tiger, the first year is Alip. Thus, kurup names will always start with Alip. Next, followed by the name of the day and the name of the market on 1 Sura (new year) in the year Alip. For the first time the Javanese calendar was used, the names of the days and markets were Jemuwah days and Pasar Legi, so the name kurup was Alip-Jemuwah-Legi, abbreviated as Awahgi. The Awahgi Kurup will end 120 years later, or 42,535 days later.

In its implementation, there is a difference of 1 day between the number of days in the Javanese calendar, which has undergone a 120-year cycle and the number of days in the Hijri calendar which has also undergone 120 years. In 120 years of the Javanese calendar, the number of days is 42,525. This result is exactly the same as the total number of days for 120 years $(354.375 \times 120) = 42.525$ days. Whereas in the Hijri calendar, the real number of days for 120 years is $(354,367 \times 120) = 42,524$ days. This means that after 120 years, the Javanese calendar moves 1 day faster than the Hijri calendar. For the two calendars to run side by side, the Javanese calendar must be moved back 1 day. The event of a 1-day setback in the Javanese calendar is known as a kurup change, and this kurup change marks the Javanese calendar returning to go hand in hand with the Hijri calendar. As a note, in the Hijri calendar, the time cycle is once every 30 years with eight leap years and 22 short years. The age of 1 year of the Hijri calendar is 354 $\frac{8}{30}$ days or 354.367 days, slightly shorter than the age of 1 year of the Javanese calendar, which is 354 $\frac{3}{8}$ days or 354.375 days.

The Javanese calendar for the first time begins on the 1st of Sura which coincides with the Jemuwah-Legi day. As previously explained, every 120 years there is an excess of 1 day, so that the 120th year (Jimakir), which was originally a leap year, is changed to a basitoh year. The method of calculation is to advance 1 day every 120 years, from Jemuwah-Legi to Kemis-Kliwon. This marked the change from kurup Awahgi (Alip-Jemuwah-Legi) to kurup Alip-Kemis-Kliwon (Amiswon). After 120 years, the day was brought forward again, from Kemis-Kliwon to Rebo-Wage. It also marks the change of bracket to the Alip-Rebo-Wage or Aboge bracket. On the first bracket is Awahgi, the second bracket is Amiswon, the third bracket is Aboge, the fourth bracket is Asapon, and so on. Currently, the Javanese calendar is in the Asapon bracket (Table 1). The following is the distribution period of each bracket shown in Table 1.

Table 1: The Circular Period of Each Kurup in the Javanese Calendar

Kurup Name	Age	Opinion 1		Age	Opinion 2	
		Javanese calendar	Gregorian calendar		Javanese calendar	Gregorian calendar
Awahgi	120	1 Sura 1555	Juli 8, 1633	72	1 Sura 1555	Juli 8, 1633
Alip-Jemuwah-Legi		29 Big 1674	?		29 Big 1626	Mei 17, 1703
Amiswon	72	1 Sura 1675	?	120	1 Sura 1627	Mei 18, 1703
Alip- Kemis-Kliwon		29 Big 1746	Oktober 19, 1819		29 Big 1746	Oktober 19, 1819
Aboge	120	1 Sura 1747	Oktober 20, 1819	120	1 Sura 1747	Oktober 20, 1819
Alip-Rebo-Wage		29 Big 1866	Maret 24, 1936		29 Big 1866	Maret 24, 1936
Asapon	120	1 Sura 1867	Maret 25, 1936	120	1 Sura 1867	Maret 25, 1936
Alip-Slasa-Pon		29 Big 1986	Januari 17, 2056		29 Big 1986	Januari 17, 2056
Anening	120	1 Sura 1987	Januari 18, 2056	120	1 Sura 1987	Januari 18, 2056
Alip-Senen-Paing		29 Big 2106	Juni 31, 2176		29 Big 2106	Juni 31, 2176

The Javanese calendar does not start with the number 1. The beginning of the Javanese calendar is 1555. The year number continues the Saka calendar year number that was previously used by the Javanese people. If in the Gregorian calendar, the term BC is known, then in the Javanese calendar the term is almost unknown. Javanese calendar begins 1 Sura 1555 Java coincides with 8 July 1633 AD. If taken backwards, then 7 July 1633 AD is 29/30 Besar 1554 Java which falls in the year of Jimakir. Because Jimakir is a leap year, the last month has 30 days. If at that time it was the replacement of kurup, then 7 July 1633 would coincide with 29 Besar 1554 Java (Opinion 1 in Table 1). If it is not a replacement kurup, then 7 July 1633 coincides with the Top 30 1554 Java (Opinion 2 in Table 1).

Why is there an Aboge? Aboge is one of the cycles in the Javanese calendar in which each cycle has a circulation period of 120 years in the Javanese calendar. Aboge is the 3rd cycle in a 120-year cycle. After the Aboge cycle, the Asapon cycle will continue. Furthermore, 120 years later will be the Anening cycle. And so on so that in total there will be 35 bracket cycles with each cycle being 120 years old. The last Kurup is Aseing or Alip-Setu-Paing. The age of 35 cupping cycles is $(42,524 \times 35) = 1,488,340$ days. After this cycle ends, the Javanese calendar enters the second stage of the 35 kurup cycle. Of all the kurup, only kurup Aboge later transformed into a kind of belief. Thus, the position of the Aboge kurup is very different compared to the two previous kurup (Awahgi and Amiswon), as well as the Asapon kurup which is currently running.

3.2. Mathematical Construction of the Javanese-Aboge Calendar

The Javanese-Aboge Calendar or better known as the Aboge Calendar is the Javanese calendar for the third kurup (Table 1). Aboge means Alip-Rebo-Wage which means the 1st of the month of Sura in the year Alip falls on Rebo day and the Wage market. Furthermore, the Rebo day is coded 1 and the Wage market is also coded 1. This provision is the basis for assigning day codes (Table 2) and markets (Table 3), namely.

Table 2: Day Codes on the Aboge Calendar

Day Code	1	2	3	4	5	6	7
Name of the day	Rebo	Kemis	Jemuwah	Setu	Ahad	Senen	Slasa

Table 3: Market Codes on the Aboge Calendar

Market Code	1	2	3	4	5
Market Name	Wage	Kliwon	Legi	Paing	Pon

Age 1-year Aboge calendar for the year Alip is 354 days. Thus, the 1st Sura of the year Ehe (the second year in the Aboge Calendar) is the 355th day. Because the number of days in a week is 7, the 355th day falls on Sunday and the Pon market. This is because 355 divided by 7 leaves 5 which according to Table 2 is Sunday, and 355 divided by 5 leaves 5 which according to Table 3 is Pon. The thing to note is that there is no remainder of 0 in the formulation of the Javanese Calendar. The remainder of 0 is nothing but the remainder of 5. Because the 1st of Sura in the year Ehe falls on a Sunday and the Pon market, the term Hehadpon or Hadpona appears (Table 4).

Furthermore, the second year, namely Ehe, is a leap year so that 1 year is 355 days old. The 1st of the Jimawal year Sura (the third year in the Aboge Calendar) is the 710th day. In the same way as before, 710 is divided by 7 to leave 3 and 710 is divided by 5 to leave 5. So, 1 Sura of Jimawal year falls on Jemuwah day and Pon market. Because the 1st Sura of the Jimawal year falls on Jemuwah day and on the Pon market, the term Jangapon appears (Table 4).

Table 4: Month Codes on the Aboge Calendar

Days to- 1 st Sura	Year Name	Day Code	Market Code	Year Code	Meaning
1	Alip	1	1	Aboge	Alip-Rebo-Wage
355	Ehe	5	5	Hadpona	He-Ahad-Pon
710	Jimawal	3	5	Jangapon	Jimawal-Jemuwah-Pon
1064	Je	7	4	Jesaing	Je-Slasi-Paing
1418	Dal	4	3	Daltugi	Dal-Setu-Legi
1773	Be	2	3	Bemisgi	Be-Kemis-Legi
2127	Wawu	6	2	Wanenwon	Wawu-Senen-Kliwon

2481	<i>Jimakir</i>	3	1	Jangagea	<i>Jimakir-Jemuwah-Wage</i>
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In the tradition of the Aboge Cikakak Community, the fifth column is known as Year Password. This Kurup is called Aboge because the code for its first year is Aboge. This year's code is used by the traditional elders (elders) of Aboge to count the days.

For the purposes of calculating days by the elders, Aboge still needs another code, namely the code for the month. The month cypher keeps the day names and market names secret for the 1st of each of the twelve months. The first month is Sura. The 1st of Sura is the 1st day. The month of Sura is 30 days old, so the 1st of the month of Sapar (the second month) is the 31st day. Furthermore, 31 divided by 7 leaves 3 and 31 divided by 5 remains 1. According to Table 2 and Table 3, the 1st of Sapar will fall on Jemuwah and Wage markets. Furthermore, Mulud will be on the 60th day. In the same way, 60 divided by 7 leaves 4 and 60 divided by 5 remains 5. According to Table 2 and Table 3, the 1st of Mulud will fall on Setu day and the Pon market.

This procedure generates a Moon Code. If in Year Code the name of the year, day and the market name is encoded, then in Month Code the month name, day code and market code are encoded. For day codes and market codes, the numbers are read in Javanese, namely siji (ji), loro (ro), telu (lu), papat (pat), lima (ma), enem (nem), and pitu (tu). For example, the 1st Sura will be encoded as ramjiji (sura-siji-siji). Then the 1st of Sapar which is the 31st day will be encoded with parluji (sapar-telu-siji). A more complete presentation is in Table 5. In Table 5, the month of Bakda Mulud is also called the month of Ngakir.

Table 5: Month Codes on the Aboge Calendar

Day-Date 1	Name Month	Day Code	Market Code	Moon Password
1	<i>Sura</i>	1	1	<i>Ramjiji</i>
31	<i>Sapar</i>	3	1	<i>Parluji</i>
60	<i>Mulud</i>	4	5	<i>Ludpatma</i>
90	<i>Ngakir</i>	6	5	<i>Ngakirnemma</i>
119	<i>Jumadi Awal</i>	7	4	<i>Diwaltupat</i>
149	<i>Jumadil Akhir</i>	2	4	<i>Dikirropat</i>
178	<i>Rejeb</i>	3	3	<i>Jablulu</i>
208	<i>Ruwah</i>	5	3	<i>Wahmalu</i>
237	<i>Pasa</i>	6	2	<i>Sanemro</i>
267	<i>Sawal</i>	1	2	<i>Waljiro</i>
296	<i>Dulkangidah</i>	2	1	<i>Pitroji</i>
326	<i>Besar</i>	4	1	<i>Sarpatji</i>

How to apply the Aboge Calendar? First, it must be determined or known the name of the year and the name of the day and the name of the market on the 1st of Sura. The trick is to reduce the number of the Aboge calendar year by 1554 and then divide by 8. The remainder shows the name of the year with remainders 1, 2, 3, 4, 5, 6, 7, and 8 respectively showing the years Alip, Ehe, Jimawal, Je, Dal, Be, Wawu, and Jimakir.

If the name of the year is known, then the name of the day and the name of the market on the 1st Sura are matched with Table 4. Example of calculation for January 21, 2023, AD. The corresponding Javanese year is 1956. The remainder of the division (1956 – 1554) by 8 is 2. Based on Table 4, the name of the Javanese year for 1956 Java is Ehe. Based on Table 4, the 1st Sura of the year Ehe falls on the 5th day and the 5th market, namely Sunday and the Pon market.

To determine the name of the day and the name of the market on 1 Sapar in the year Ehe, then based on Table 5 Sunday is given code 1 and the Pon market is also coded 1. Furthermore, in Table 5 the 1st of Sapar is coded day 3 and market code 1. Thus, 1 Sapar year Ehe falls on Slasa day and Pon market. And so on, and the results are listed in Table 6.

For information, January 21, 2023, AD coincides with 27 Jumadikir 1956 for the Aboge calendar and 28 Jumadikir 1956 for the Asapon calendar. To determine the name of the day and the name of the market is to divide 28 by 7, the remainder is 7 so that the name of the day is Setu and 28 is divided by 5, the remainder is 3, so the name of the market is Legi.

Table 6: Beginning of the Month in the Aboge and Asapon Calendars for the Year Ehe 1956 Java

No	Month	Aboge				Asapon			
		Day	Market	Day	Market	Day	Market	Day	Market
1	1 Sura	1	Ahad	1	Pon	1	Setu	1	Paing
2	1 Sapar	3	Slasa	1	Pon	3	Senen	1	Paing
3	1 Mulud	4	Rebo	5	Paing	4	Slasa	5	Legi
4	1 Bakdamulud	6	Jemuwah	5	Paing	6	Kemis	5	Legi
5	1 Jumadilawal	7	Setu	4	Legi	7	Jemuwah	4	Kliwon
6	1 Jumadilakir	2	Senen	4	Legi	2	Ahad	4	Kliwon
7	1 Rejeb	3	Slasa	3	Kliwon	3	Senen	3	Wage
8	1 Ruwah	5	Kemis	3	Kliwon	5	Rebo	3	Wage
9	1 Pasa	6	Jemuwah	2	Wage	6	Kemis	2	Pon
10	1 Sawal	1	Ahad	2	Wage	1	Setu	2	Pon
11	1 Dulkangidah	2	Jemuwah	1	Pon	2	Kemis	1	Paing
12	1 Besar	4	Ahad	1	Pon	4	Setu	1	Paing

3.3 Mathematical Construction of the Javanese-Asapon Calendar

The Javanese-Asapon calendar, better known as the Asapon calendar, is the fourth Javanese calendar after kurup Aboge (Table 1). So, Asapon Calendar is a continuation of Aboge Calendar. Asapon means Alip-Slasa-Pon which means the 1st of the month of Sura in the year Alip falls on the day of Slasa and the Pon market. Furthermore, the Slasa day is coded 1 and the Pon market is also coded 1. This provision is the basis for assigning day codes (Table 7) and markets (Table 8), namely.

Table 7: Day Codes on the Asapon Calendar

Day Code	1	2	3	4	5	6	7
Name of the day	Slasa	Rebo	Kemis	Jemuwah	Setu	Ahad	Senen

Table 8: Market Codes on the Asapon Calendar

Market Code	1	2	3	4	5
Market Name	Pon	Wage	Kliwon	Legi	Paing

The Asapon calendar year for the year Alip is 354 days. Thus, the 1st Sura of the year Ehe (the second year in the Asapon Calendar) is the 355th day. Because there are 7 days in a week, the 355th day falls on Setu and the Kliwon market. This is because 355 divided by 7 leaves 5 which according to Table 7 is Setu day, and 355 divided by 5 leaves 5 which according to Table 8 is Paing. Because the 1st Sura of the year Ehe falls on Setu day and Paing market, the term Hetuing appears (Table 9).

Furthermore, the second year, namely Ehe, is a leap year so that 1 year is 355 days old. The 1st of the Jimawal year Sura (the third year in the Asapon Calendar) is the 710th day. In the same way as before, 710 is divided by 7, it remains 3, and 710 is divided by 5, it remains 5. So, 1 Sura of the Jimawal year falls on the day of Kemis and Pasar Paing. Because the 1st of Jimawal year's Sura falls on Thursday and Paing market, the term Jiwalming appears (Table 9).

Table 9: Year Code on the Asapon Calendar

Day-Date 1 Sura	Year Name	Day Code	Market Code	Year Code	Meaning
1	<i>Alip</i>	1	1	<i>Asapon</i>	<i>Alip-Slasi-Pon</i>
355	<i>Ehe</i>	5	5	<i>Hetuing</i>	<i>He-Setu-Paing</i>
710	<i>Jimawal</i>	3	5	<i>Jiwalmising</i>	<i>Jimawal-Kemis-Paing</i>
1064	<i>Je</i>	7	4	<i>Jenengi</i>	<i>Je-Senen-Legi</i>
1418	<i>Dal</i>	4	3	<i>Dalmowon</i>	<i>Dal-Jemuwah-Kliwon</i>
1773	<i>Be</i>	2	3	<i>Berewon</i>	<i>Be-Rebo-Kliwon</i>
2127	<i>Wawu</i>	6	2	<i>Wahage</i>	<i>Wawu-Ahad-Wage</i>
2481	<i>Jimakir</i>	3	1	<i>Jikirmispon</i>	<i>Jimakir-Kemis-Pon</i>

The 1st of Sura is the 1st day. The month of Sura is 30 days old, so the 1st of the month of Sapar (the second month) is the 31st day. Furthermore, 31 divided by seven leaves 3, and 31 divided by 5 remains 1. Table 8 and Table 8 show that the 1st of Sapar will fall on Thursday and the Pon market. Furthermore, Mulud will be on the 60th day. In the same way, 60 divided by seven leaves 4 and 60 divided by 5 remains 5. Tables 7 and 8 show that the 1st of Mulud will fall on Jemuwah and Pasar Paing days. This procedure generates a Moon Code. Note that the Month Password in the Asapon Calendar is the same as the Month Password in the Aboge Calendar, but the meaning is different. For example, Ramjiji states that the 1st Sura of the year Alip falls on the Rebo day and the Wage market on the Aboge Calendar. However, on the Asapon Calendar, the 1st Sura of the year Alip falls on Slasi day and the Pon market.

Table 10: Month Codes on the Asapon Calendar

Day-Date 1	Month Name	Day Code	Market Code	Moon Password
1	<i>Sura</i>	1	1	<i>Ramjiji</i>
31	<i>Sapar</i>	3	1	<i>Parluji</i>
60	<i>Mulud</i>	4	5	<i>Ludpatma</i>
90	<i>Ngakir</i>	6	5	<i>Ngakirnemma</i>
119	<i>Jumadi Awal</i>	7	4	<i>Diwaltupat</i>
149	<i>Jumadil Akhir</i>	2	4	<i>Dikirropat</i>
178	<i>Rejeb</i>	3	3	<i>Jablulu</i>
208	<i>Ruwah</i>	5	3	<i>Wahmalu</i>
237	<i>Pasa</i>	6	2	<i>Sanemro</i>
267	<i>Sawal</i>	1	2	<i>Waljiro</i>
296	<i>Dulkangidah</i>	2	1	<i>Pitroji</i>
326	<i>Besar</i>	4	1	<i>Sarpatji</i>

How is the Asapon Calendar app? Is it similar to Aboge Calendar? First, it must be determined or known the name of the year, the name of the day, and the name of the market on the 1st of Sura. The trick is to reduce the number of the Aboge calendar year by 1554 and then divide by 8. The remainder shows the year's name with remainders 1, 2, 3, 4, 5, 6, 7, and 8, respectively, showing the years Alip, Ehe, Jimawal, Je, Dal, Be, Wawu, and Jimakir. The order of the years on the Asapon Calendar is the same as on the Aboge Calendar.

If the year's name is known, then the day's and the market's name on the 1st Sura are matched with Table 4. Example of calculation for January 21, 2023, AD. The corresponding Javanese year is 1956. The remainder of the division (1956 – 1554) by 8 is 2. Based on Table 4, the name of the Javanese year for 1956 Java is Ehe. Based on

Table 4, the 1st Sura of the year Ehe falls on the 5th day and the 5th market, namely the Setu day and the Paing market.

To determine the day's name and the market's name on 1 Sapar year Ehe, then based on Table 7, the Setu day is coded 1, and the Paing market is also coded 1. Furthermore, in Table 7, the 1st Sapar is coded day 3 and market code 1. Thus, 1 Sapar year Ehe falls on Monday and the Paing market. And so on, and the results are listed in Table 10. For information, on January 21, 2023, AD coincided with 27 Jumadilakir 1956 for the Aboge calendar and 28 Jumadilakir 1956 for the Asapon calendar. To determine the day's name and the market's name is to divide 27 by 7 with a remainder of 6 so that the name of the day is Sunday, and 28 is divided by 5 with a remainder of 3 so that the name of the market is Kliwon.

3.4 Aboge Calendar Application and Asapon Calendar to Determine the Beginning of Fasting

What about the past when NU, Muhammadiyah and other Islamic organizations didn't exist yet? How is the calculation of the fall of the holiday? At that time, an Aboge community already used the Aboge calendar to calculate the feast days. So, what about during the time of Sultan Agung regarding the calculation of the fall of the feast day? What about the Javanese calendar that Sultan Agung created himself?

At that time, the fall of the holidays calculated by the Aboge calendar and the government's stipulations could be the same. However, now it shows a difference. The beginning of fasting, calculated by the Aboge calendar and government decrees, shows a difference. Thus, the beginning of fasting can no longer be calculated by the Aboge calendar.

What if the community remains Aboge, but the calendar uses Asapon? Even though it is true that the holidays calculated using the Asapon calendar are the same as the government's version, this is still not allowed because the Aboge and Asapon calendars are not for calculating holidays.

Currently, the Javanese calendar enters the year 1956. In the previous section, it was determined that the name of the year for the year 1956 is Ehe. Referring to Table 6 in the last row, the name of the day on 1 Pasa is Jemuwah, and the name of the market is Wage. So, the Aboge community will start the beginning of fasting on Jemuwah-Wage (Table 11). If the Asapon Calendar is used, the beginning of fasting is Kemis-Pon (Table 11).

Table 11: Beginning of Fasting and Eid al-Fitr According to the Aboge and Asapon Calendars

Hijri Year (H) Javanese Year (J) Ramjiji - Sura 1 - 1	Calender Aboge		Calender Aboge		Government Determination	
	Fast 1 Ramadhan Sanemro Fast 6 - 2	Eid Al-Fitr 1 Syawal Waljiro Syawal 1 - 2	Fast 1 Ramadhan Sanemro Fast 6 - 2	Eid Al-Fitr 1 Syawal Waljiro Syawal 1 - 2	Fast 1 Ramadhan	Eid Al-Fitr 1 Syawal
1427 H = 1939 J Aboge Alip Wednesday (1) Wage (1)	Monday Kliwon 25 September 2006	Wednesday Kliwon 25 Oktober 2006	Sunday Wage 24 September 2006	Tuesday Wage 24 Oktober 2006	Sunday Wage 24 September 2006	Tuesday Wage 24 Oktober 2006
1428 H = 1940 J Hadpona Ehe Ahad (1) Pon (1)	Friday Wage 14 September 2007	Sunday Wage 14 Oktober 2007	Thursday Pon 13 September 2007	Saturday Pon 13 Oktober 2007	Thursday Pon 13 September 2007	Saturday Pon 13 Oktober 2007
1429 H = 1941 J Jangapon Jimawal Friday (1) Pon (1)	Wednesday Wage 3 September 2008	Friday Wage 3 Oktober 2008	Tuesday Pon 2 September 2008	Thursday Pon 2 Oktober 2008	Monday Paing 1 September 2008	Wednesday Paing 1 Oktober 2008
1430 H = 1942 J Jesaing Je Tuesday (1) Paing (1)	Sunday Pon 23 Agustus 2009	Tuesday Pon 22 September 2009	Saturday Paing 22 Agustus 2009	Monday Paing 21 September 2009	Saturday Paing 22 Agustus 2009	Sunday Legi 20 September 2009
1431 H = 1943 J Daltugi Dal Saturday (1) Legi (1)	Thursday Paing 12 Agustus 2010	Saturday Paing 11 September 2010	Wednesday Legi 11 Agustus 2010	Friday Legi 10 September 2010	Wednesday Legi 11 Agustus 2010	Friday Legi 10 September 2010
1432 H = 1944 J Bemislegi Be Thursday (1) Legi (1)	Tuesday Paing 2 Agustus 2011	Thursday Paing 1 September 2011	Monday Legi 1 Agustus 2011	Wednesday Legi 31 Agustus 2011	Monday Legi 1 Agustus 2011	Wednesday Legi 31 Agustus 2011
1433 H = 1945 J Wanenwon Wawu Monday (1) Kliwon (1)	Saturday Legi 21 Juli 2012	Monday Legi 20 Agustus 2012	Friday Kliwon 20 Juli 2012	Sunday Kliwon 19 Agustus 2012	Saturday Legi 21 Juli 2012	Sunday Kliwon 19 Agustus 2012
1434 H = 1946 J Jangagea/Jimatge Jimakir Friday (1) Wage (1)	Wednesday Kliwon 10 Juli 2013	Friday Kliwon 9 Agustus 2013	Tuesday Wage 9 Juli 2013	Thursday Wage 8 Agustus 2013	Wednesday Kliwon 10 Juli 2013	Thursday Wage 8 Agustus 2013
1435 H = 1947 J	Monday	Wednesday	Sunday Wage	Tuesday Wage	Sunday Wage	Monday Pon

Above Alip Wednesday (1) Wage (1) 1436 H = 1948 J Hadpona Ehe Ehe (1) Pon (1) 1437 H = 1949 J Jangapon Jimawal Friday (1) Pon (1) 1438 H = 1950 J Jesaing Je Tuesday (1) Paing (1) 1439 H = 1951 J Daltugi Dal Saturday (1) Legi (1) 1440 H = 1952 J Bemislegi Be Thursday (1) Legi (1) 1441 H = 1953 J Wanenwon Wawu Monday (1) Kliwon (1) 1442 H = 1954 J Jangagea/Jimatge Jimakir Friday (1) Wage (1) 1443 H = 1955 J Above Alip Wednesday (1) Wage (1) 1444 H = 1956 J Hadpona Ehe Ahad (1) Pon (1)	Kliwon, 30 Juni 2014 Friday Wage 19 Juni 2015 Wednesday Wage 8 Juni 2016 Sunday Pon 28 Mei 2017 Thursday Paing 17 Mei 2018 Tuesday Paing 7 Mei 2019 Saturday Legi 25 April 2020 Wednesday Kliwon 14 April 2021 Monday Kliwon, 4 April 2022 Friday Wage 24 Maret 2023	Kliwon 30 Juli 2014 Sunday Wage 19 Juli 2015 Friday Wage 8 Juli 2016 Tuesday Pon 27 Juni 2017 Saturday Paing 16 Juni 2018 Thursday Paing 6 Juni 2019 Monday Legi 25 Mei 2020 Jemuwah Kliwon 14 Mei 2021 Wednesday Kliwon, 4 Mei 2022 Sunday Wage 23 April 2023	29 Juni 2014 Thursday Pon 18 Juni 2015 Tuesday Pon 7 Juni 2016 Saturday Paing 27 Mei 2017 Wednesday Legi 16 Mei 2018 Monday Legi 6 Mei 2019 Friday Kliwon 24 April 2020 Tuesday Wage 13 April 2021 Sunday Wage, 3 April 2022 Thursday Pon 23 Maret 2023	29 Juli 2014 Saturday Pon 18 Juli 2015 Thursday Pon 7 Juli 2016 Monday Paing 26 Juni 2017 Friday Legi 15 Juni 2018 Wednesday Legi 5 Juni 2019 Sunday Kliwon 24 Mei 2020 Thursday Wage 13 Mei 2021 Thursday Wage, 03 Mei 2022 Saturday Pon 22 April 2023	29 Juni 2014 Thursday Pon 18 Juni 2015 Monday Paing 6 Juni 2016 Saturday Paing 27 Mei 2017 Thursday Paing 17 Mei 2018 Monday Legi 6 Mei 2019 Friday Kliwon 24 April 2020 Tuesday Wage 13 April 2021 Sunday Wage, 3 April 2022 Friday Wage ?	28 Juli 2014 Friday Paing 17 Juli 2015 Wednesday Paing 6 Juli 2016 Sunday Legi 25 Juni 2017 Friday Legi 15 Juni 2018 Wednesday Legi 5 Juni 2019 Sunday Kliwon 24 Mei 2020 Thursday Wage 13 Mei 2021 Monday Pon, 02 Mei 2022 Sunday Wage ?
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Based on Table 11, the beginning of fasting and Eid al-Fitr calculated by the Asapon Calendar and the Above Calendar never coincide. Calculations with the Asapon Calendar show one day ahead. This shows that if the distribution period of the bracket has entered the Asapon bracket, then the timing must leave the Above bracket and be replaced with the Asapon bracket. The difference of 1 day corresponds to the advance of 1 day when there is a change in the bracket from Above bracket to Asapon bracket.

Based on the initial data of fasting and Eid al-Fitr for 17 years from 2006 to 2022, the start of fasting determined by the government is quite a lot that shows the similarity of the beginning of fasting determined by the Asapon Calendar, except for 2012, 2013 and 2018. 2008 and 2016 are 1 or 2 days faster than calculations with the Asapon and Above calendars. In addition, the initial calculation of fasting with the Above Calendar is never the same as the government's stipulation. The calculation results show that the start of fasting, calculated using the Above Calendar, is 1 or 2 days after the start of fasting as determined by the government.

As for Eid al-Fitr, the government decree is the same as the results calculated by the Asapon Calendar, except for the years 2008, 2009, 2014, 2015, 2016, 2017 and 2022. In these years, Eid al-Fitr, calculated by the Above Calendar, is held two days after Eid al-Fitr, which the government sets. As for other years, according to Kalende Above, the implementation of Eid al-Fitr is 1 day after Eid al-Fitr, which is determined by the government.

4. Conclusion

The results of the study show that both the Above Calendar and the Asapon Calendar are not appropriate when used as a guide for determining the implementation of religious holidays. This is because there is no continuous consistency and full-time alignment with government decrees.

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