

## ANCIENT REMEDIES FOR COUGHS AND COUGH-RELATED SYMPTOMS: ANALYSIS FROM MALAY MEDICAL MANUSCRIPTS

Raja Nurhanin Raja Perdaus<sup>1</sup>, Mohd Affendi Mohd Shafri, Ph.D<sup>1</sup> and **Intan Azura Shahdan, Ph.D<sup>1\*</sup>**

Department of Biomedical Sciences, Kulliyah Of Allied Health Sciences, International Islamic University Malaysia, 25200 Jalan Sultan Ahmad Shah, Kuantan, Pahang, Malaysia

Corresponding Author's email: [intan\\_azura@iium.edu.my](mailto:intan_azura@iium.edu.my)

### Abstract

Cough, a common symptom with various underlying causes, may lead to debilitating consequences in terms of loss of employment, healthcare utilisation and psychosocial morbidity. This study aims to document information on coughs and cough-related symptoms from six Malay medical manuscripts. The information is related to terminologies, symptoms, list of materials, method of preparation, method of administration and dosage. The materials were then compared with contemporary studies on their relevant therapeutic action. It was found that *batuk*, *lelah* and *esak* are the most common terms related to coughs and cough-related problems in the Malay manuscripts. Coughs can then be categorised into five types: wet cough, dry cough, cold-induced cough, asthmatic cough and physiological coughs. Asthmatic cough has the greatest number of prescriptions (n=30) than other types of coughs. In total, 62 formulations have been documented involving about 93 plant species, 6 animals and 2 minerals. Fenugreek or *Trigonella foenum-graecum* is the common material prescribed for all five types of coughs. Honey, *gandarukam* and *mustaki* are also commonly prescribed for all coughs except dry cough. Future study may investigate the effectiveness of these traditional formulations and their therapeutic benefits to treat coughs and cough-related problems. With proper recommendation, practice and guidelines from health practitioners, health authorities should consider the availability of local *materia medica* in treating coughs as an advantage to improve the quality of life for the community at large.

**Keywords:** Ancient manuscripts, *kitab tib*, Malay medicine, phytomedicine, respiratory distress

### Introduction

Cough is one of the most common symptoms in primary health care facilities (Finley et al., 2018). Cough can result from microbial infections, morbidity or simply a defensive reflex for clearance of excessive secretions and foreign bodies from airways (De Blasio et al., 2011). However, severe and chronic coughs frequently impair quality of life. Management of cough merits its own clinical practice guidelines (CPG) because of its broad aetiology and commonly experienced by adults and children. CPG are recommendations on how to diagnose and treat a medical condition. Several countries like the United States (American College of Chest Physicians, 2021), China (Lai et al., 2018), and European countries (Levy et al., 2009) have come up with their own CPG to customise healthcare management to suit their countries' climate and demographic background.

In Malaysia, CPG for respiratory diseases is available for asthma in adults, drug-resistant tuberculosis, tobacco use disorder, management of tuberculosis, and chronic obstructive pulmonary disease (Malaysian Ministry of Health, 2020). Although no specific CPG for management of cough is available in Malaysia, as a multicultural society with blooming traditional practices, a CPG for cough that integrates conventional with the traditional medicine would be an informative and possibly, cost-effective management in treating coughs.

Due to the tropical climate, Malaysians are prone to get coughs. Aetiology of coughs can also include cigarette smoke, microbial infections, allergy, environmental pollution, or exposure to

occupational chemicals. The emergence of a respiratory virus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has highlighted the severity a viral infection can bring. Between December 2019 until 28 June 2021, close to 183 million people have been affected, and SARS-CoV-2 has claimed the lives of 3.9 million people (<https://www.worldometers.info/coronavirus/>). Although many infected patients are asymptomatic and can perform self-isolation, 15-30% who are hospitalised will develop coronavirus disease (COVID-19) associated with acute respiratory distress syndrome (Attaway et al., 2021). Symptomatic COVID-19 patients are reported to manifest dry cough, shortness of breath or difficulty in breathing. In addition to vaccines and repurposed medicines, biomedical scientists are also trying to find to find new cures for COVID-19 by looking into natural products or traditional medicine, which would be helpful medically and financially to countries where access to modern drugs and medical supplies are limited (Zhao et al., 2021; Capodice et al., 2021; Jang et al., 2021; Iranzadasl et al., 2021).

Past civilisations in many parts of the world, including the Malay Archipelago, have documented traditional remedies for coughs. The ancient knowledge documented in old manuscripts offers natural remedies – this is somewhat preferred as an organic choice, in particular, for immunocompromised individuals who have limited medicine choices. Hence, this study attempts to data-mine and evaluate ancient Malay medical texts by focusing on coughs, cough-related symptoms such as difficulty in breathing, and their remedies. Information of the Malay medical manuscripts will then be compared with the current database of published medical research.

## Methods

### Sources

A Dictionary of Malayan Medicine (Gimlette, 1939) was used as the primary reference to identify the Malay terms for cough and cough-related symptoms. Secondary sources of references were online dictionaries, *Pusat Rujukan Persuratan Melayu* (PRPM; [www.prpm.dbp.gov.my](http://www.prpm.dbp.gov.my)) and *Kamus Besar Bahasa Indonesia* (KBBI; <https://kbbi.kemdikbud.go.id>), as well as glossaries from published Malay manuscript books by Mohd. Shafri (2018, 2019) and Mat Piah (2006). Information on cough and cough-related symptoms was found in six Malay medical manuscripts: *Kitab Tib MSS 2515 Perpustakaan Negara Malaysia: Kajian Teks & Suntingan* (Mat Piah & Baba, 2014), *Kitab Perubatan Melayu: Tayyib Al-Ihsan Fi Tibb Al-Insan* (Mohd. Shafri, 2018), *Kitab Perubatan Melayu: Al-Rahmah Fi Al-Tibb Wa Al-Hikmah* (Mohd. Shafri & Muhammad Yahya, 2017), *Kitab Perubatan Melayu: Sari Segala Ubat* (Mohd. Shafri, 2019), MSS 2905 *Petua Kitab Tib* (Raja Perdaus, 2020) and MSS 3749 *Petua Ubat-Ubatan Azimat* (not yet published; original text is available in Perpustakaan Negara Malaysia, Kuala Lumpur).

### Data extraction, classification and analysis

Data mining was performed based on the methodology by (Mohd Shafri, 2021) with some modification. Information extracted on coughs and cough-related symptoms was grouped according to the types of coughs and materials (e.g. plant-based, animal-based and miscellaneous). The scientific names and modes of administration were also included.

### Comparative Analysis of the Content of the Manuscript to Contemporary Scientific Reports

Comparative analysis is a method in which the use of individual herbal, animal or mineral in a traditional formulation in a text is compared to published papers in modern scientific databases. The presence of papers of related use or in support of the use in the manuscripts is an indication of verified use. However, the absence of the papers does not necessarily mean that the traditional use is unverified as many of the traditional Malay formulations, or even the individual ingredients from the Malay world, have not been studied by modern scientists (Mohd Shafri, 2021). Search engine using PubMed was used to retrieve peer-reviewed journal articles from a vast range of medical and science sub-disciplines. The scientific evidence search strategy used in this study, include: (a) In vitro study OR In/ex vivo study OR Animal study OR Randomised controlled trial study OR human case study; and (b) Any parts of the *materia medica* that was used in the clinical study. The search strategy was established to ensure that the scientific evidence retrieved for any *materia medica* is reliable and relevant.

## Results

### Medical knowledge from the Malay medical manuscripts

Identified Malay terms for coughs and cough-related symptoms found in 6 Malay medical manuscripts are summarised in Table 1. *Batuk* (Malay: cough) was found in 4 out of 6 Malay manuscripts. At least six different terms of coughs can be identified from the Malay medical manuscripts: *batuk basah* (*balgham*), which can be defined as wet cough, or cough with phlegm, *batuk kering* (Malay: dry cough), *batuk sebab angin sejuk* (Malay: cough due to cold air), *lelah*, *picik bernafas* and *esak*. Arabic terms such as *rabw*, *intisab*, *al-su'āl al-rāhib*, *al-su'āl al-yābis* and *al-su'āl al-rīhi* were also found in the Malay medical manuscripts. The use of numerous terminologies to describe cough may be due to the dominant language influencing the authors and educational background of the authors. Two manuscripts, namely *Ṭayyib al-Iḥsān* and *al-Raḥmah* have strong Arabic influence as *Ṭayyib al-Iḥsān* also drew its materials from many Arabic medical texts whereas *al-Raḥmah* is actually a Malay translation of an Arabic text of the same name and given additional Malay materials.

Table 1: Description of coughs and cough-related symptoms from the Malay medical manuscripts. Similar Malay terms used in different manuscripts are denoted with common symbols.

No.	Malay medical manuscript (Reference)	Malay term on coughs and cough-related problems
1.	MSS 2905 <i>Petua Kitab Tib</i> (Raja Perdaus, 2020)	<ul style="list-style-type: none"> <li>△ <i>Batuk basah</i> (<i>balgham</i>)</li> <li>● <i>Batuk kering</i></li> <li>‡ <i>Batuk sebab angin sejuk dan sebagainya</i></li> <li>△ <i>Lelah</i></li> <li>Φ <i>Esak</i></li> <li>§ <i>Sakit dada</i></li> </ul>
1.	<i>Kitab Tib MSS 2515 Perpustakaan Negara Malaysia: Kajian Teks &amp; Suntingan</i> (Mat Piah & Baba, 2014)	<ul style="list-style-type: none"> <li>△ <i>Batuk</i> (<i>balgham</i>)</li> <li>● <i>Batuk</i> (<i>tiada balgham</i>)</li> <li>△ <i>Lelah</i></li> <li>△ <i>Tiada boleh bernafas, pendek nafas</i></li> <li>Φ <i>Esak</i></li> </ul>
2.	<i>Kitab Perubatan. Melayu: Ṭayyib al-Iḥsān fī Ṭibb Al-Insān</i> (Mohd. Shafri, 2018)	<ul style="list-style-type: none"> <li>△ <i>Lelah</i></li> <li>△ <i>Picik bernafas</i></li> <li>△ <i>Rabw</i></li> <li>△ <i>Intisab</i></li> </ul>
3.	<i>Kitab Perubatan Melayu: al-Raḥmah fī al-Ṭibb wa al-Ḥikmah</i> (Mohd. Shafri & Muhammad Yahya, 2017)	<ul style="list-style-type: none"> <li>△ <i>Batuk basah</i> (<i>Al-su'āl al-rāhib</i>)</li> <li>● <i>Batuk kering</i> (<i>Al-su'āl al-yābis</i>)</li> <li>‡ <i>Batuk sebab angin sejuk dan sebagainya</i> (<i>Al-su'āl al-rīhi</i>)</li> </ul>
4.	<i>Kitab Perubatan Melayu: Sari Segala Ubat</i> (Mohd. Shafri, 2019)	<ul style="list-style-type: none"> <li>△ <i>Mengah/asthma</i></li> </ul>
5.	MSS 3749 <i>Petua Ubat-Ubatan Azimat</i> (transliteration work was done by Abdul Halim, 2020)	<ul style="list-style-type: none"> <li>¶ <i>Batuk-batuk</i></li> </ul>

△ Wet cough

● *Batuk yang tidak berkahak* (linked to tuberculosis) (<https://prpm.dbp.gov.my/>) also known as dry cough

‡ Cold-induced cough and others

△ Breathless or difficulty in breathing. Also defined as *tidak berdaya lagi* (weak), *letih* (tired), *mengah* (panting), *penat* (fatigue). *Penyakit sesak nafas, asma* (<https://prpm.dbp.gov.my/>). *Rabw* (ربو), an Arabic term, means asthma (*Ṭayyib al-Iḥsān*).

Φ A kind of disease with difficulty in breathing; *teresak-esak*, or *tersedu-sedu* (*menangis*) also means sobbing (<https://prpm.dbp.gov.my/>)

§ Chest pain

¶ Coughing or constantly coughing (Gimlette, 1939)

*Batuk basah (balgham)* and *batuk kering* can be related to what is known in modern medicine as cough with phlegm and dry cough (without phlegm), respectively. *Batuk kering* is also defined as pulmonary tuberculosis (Gimlette, 1939). *Esak* is described as difficulty in breathing or a crying sound made when someone is sobbing. The former description is similar to the description for *lelah*, which is breathlessness or laboured breathing. In addition, Gimlette (1939) also defined *demun esek* (possibly a Malay-Kelantanese term for feverish *esak*) as pulmonary tuberculosis. *Lelah* is defined as spasmodic asthma or whooping-cough in adults (Gimlette, 1939). *Lelah* is also a condition associated with tiredness, exhaustion or fatigue. Mohd. Shafri (2019), in his transliteration works, had grouped *esak*, *lelah*, *rabw* and *intisab* together, where all were described as asthmatic-related symptoms. Hence this study also agrees to categorise those terms as a group.

### Remedies of Coughs and Cough-Related Problems

Sixty-two formulations on coughs and cough-related symptoms were extracted from six Malay medical manuscripts (Table 2). These formulations were classified into five different types of coughs: (1) wet cough; (2) dry cough; (3) cold-induced cough; (4) asthmatic cough (*lelah*, *esak*, *picik bernafas*, *intisab* or *rabw*); and (5) other physiological coughs (such as cough due to lifting heavy things). Each formulation is denoted with a number (e.g. Formulation 1 as F01, Formulation 2 as F02,... etc.), arranged according to their types of coughs (Table 2). Many formulations were prescribed for *lelah* or *esak*, which could suggest distinctive symptoms between the two. In MSS 2515, the description for *lelah* was given: "...when the lung *bersaru-saru* without completely breathing out, in, up and down. The breath becomes *lelah*..." (Table 2; F18). In another formulation from MSS 2905, *esak* is described as "*berbunyi pada lehernya*", or wheezing with the sound coming from the throat, which may be the result of inflammation in the throat (Table 2; F24). In fact, in MSS 2515, Mat Piah & Baba (2014) described 11 different formulations to treat *lelah* or *esak*. In addition, nine different formulations are described for patients suffering from either *lelah* or *esak*, and coughing (Table 2). Despite the differences that *lelah* and *esak* could have regarding disease manifestations, the same remedies seemed to be suitable to treat both problems.

Overall, 93 plant species were prescribed in the Malay medical manuscripts. Other *materia medica* include six animal-based materials (honey, chicken egg, crab, cow's milk, ghee and goat's horn) and two mineral-based materials (sulfur and charcoal). Most medicinal remedies were prescribed for oral administration (88%) either in the form of food, drink or swallow, followed by topical methods (11%) where the remedy is applied onto the chest of the patients. The least typical way of administering the traditional remedies was inhalation (1.5%), which was using *sandarus* for *lelah* (Table 2; F21). For orally ingested, some of the remedies were instructed to be made into *ma'jun* (e.g. Table 2; F01 and F14), *lempeng* (F31 and F38), *kanji* (F07 and F08) and *dodol* (F32) – unique terms that describe the size and forms of the homemade medicine. Out of 62 formulations, only 5 were prepared using a single material, whereas others were polymaterial formulations (Table 2).


Interestingly we found many similarities between the formulations, or almost identical formulations, prescribed either in the same manuscript or by two different manuscripts. These formulations were not considered a repetition because the scripts for each formulation are different, despite them using similar materials.

Table 2: Remedies of coughs and cough-related problems in the Malay medical manuscripts

No.	Malay and English Excerpts	Material	Scientific/ Vernacular Name	Mode of Administration	MMM Ref.¥
<b>Wet cough</b>					
F01	<p><i>Fasal pada menyatakan ubat batuk iaitu berpagi-pagi adakalanya basah-basah adakalanya kering perangnya. Maka yang basah itu keluarnya seperti balgham yang berkurung di dalam dadanya itu pada paru-paru. Akan ubatnya maka ambil air madu sekati maka dipermasak perlahan-lahan di api maka bubuh serbuk gandarukam enam kupang beratnya dan mustaki enam kupang maka mesrakan setelah sudah mesrakan maka bangkit maka bubuh jira hitam enam kupang dan halba yang sudah terendang enam kupang dan sunti halia enam kupang maka mesrakan setelah sudah maka jadikan ma'jun. Maka dimakan pagi-pagi hari tatkala belum makan dan tatkala akan tidur dan tatkala akan datang batuk. Bermula dimakan tatkala berubat itu makan nasi dengan air madu jangan makan lauk yang lain supaya segera sembuh olehnya</i></p> <p>This chapter stated that the remedy for cough in the morning is characterised by either wet or dry (cough). As for the wet (cough), there is phlegm inside the chest of the lung. As for the remedy, take honey a catty, cook with slow heat, put <i>gandarukam</i> powder weight six cents and <i>mustaki</i> weight six cents, and then mix well. After well-mixed, take them out, then add <i>jira hitam</i> six cents and <i>halba</i> that have been scorched over the fire six cents and <i>sunti halia</i> six cents, then mix well. After that, make it into <i>ma'jun</i>. Then, eat in the morning before meals and before sleep or when</p>	<p>Air madu Gandarukam Mustaki<sup>1</sup> Jira hitam<sup>2</sup> Halba Sunti halia</p>	<p>Honey <i>Commiphora tetramera</i> <i>Pistacia terebinthus</i> <i>Kaempferia parviflora</i> <i>Trigonella foenum-graecum</i> <i>Zingiber officinale</i></p>	<p>Eat in the morning before meals or at night before sleep or when coughing</p>	MSS 2905

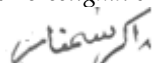
<sup>1</sup> *Mustaki* refers to Terebinth tree or Terebinth pistache (*Kitab Perubatan Melayu: Tayyib Al-Ihsan Fi Tibb Al- Insan*)

<sup>2</sup> *Jira hitam* refers to *Nigella sativa* (*Kitab Perubatan Melayu: Al-Rahmah Fi Al-Tibb Wa Al-Hikma*)

	coughing. While consuming the remedy, eat rice with honey and not to eat other food; so that one can heal quickly.				
F02	<p><i>Al-su'āl al-rāhib ertinya batuk yang basah iaitu batuk yang ada keluar sertanya balgham. Bermula ubatnya diambil satu ritl air madu, setelah itu dijadi atas api yang pertengahan-pertengahan maka dicampak dalamnya gandarukam dan mustaki. Setelah itu diturun atas api dalamnya dikair-kair hingga hancur gandarukam dan mustaki. Setelah itu diturun atas api, maka dibubuh dalamnya jira hitam yang sudah diselir dan halba yang sudah selir jua. Dan halia kering dan lada kering, tiap-tiap suatu daripada ini qadar satu dirham beratnya. Dan lagi semuanya dipipis seperti tepung. Setelah itu dikhamir semuanya hingga jadi seperti ma'jun. Kemudian maka dimakan pagi-pagi dan waktu tidur dan waktu datang batuk</i></p> <p><i>Al-su'āl al-rāhib means wet cough with phlegm. As for the remedy, take a ritl of honey. After that, cook it in medium heat, then put gandarukam and mustaki. After that, mix well until gandarukam and mustaki are fully melted. Then, add jira hitam and halba that have been scorched over the fire and add halia kering and lada kering; each weight a dirham. Grind everything finely like flour. After that, dikhamir and make into ma'jun. Then, eat in the morning and before sleep or while coughing.</i></p>	<p><i>Air madu Gandarukam Mustaki Jira hitam Halba Halia kering Lada kering</i></p>	<p>Honey <i>Commiphora tetramera Pistacia terebinthus Nigella sativa Trigonella foenum-graecum Zingiber officinale Piper spp.</i></p>	<p>Eat in the morning or at night or when coughing</p>	<p>Al-Rahmah</p>
F03	<p><i>Sebagai pula ubat batuk ambil bawang putih buah pala buah perenggam dikuai dan cengkiah dan buah pelaga dan garam</i></p> <p><i>Hurmuz dan lada sulah akar  akar pendandang besar dan kulit lawang. Sekalian ubat ini ambil sama berat maka</i></p>	<p><i>Bawang putih Buah pala<sup>3</sup> Buah perenggam Cengkiah<sup>4</sup> Buah pelaga Garam hormuz</i></p>	<p><i>Allium sativum Myristica fragrans No information Syzygium aromaticum Amomum cardamomum Salt</i></p>	<p>Swallow</p>	<p>MSS 2905</p>

<sup>3</sup> Pala refers to *Myristica fragrans* (<http://prpm.dbp.gov.my/>)

<sup>4</sup> Cengkiah refers to *Eugenia aromatica* or *Syzygium aromaticum* (synonym) (<http://prpm.dbp.gov.my/>)

	<p>serbuk hancurkan dengan air madu gentel besar buah bidara maka telan nescaya hilang balgham itu</p> <p>Also a cough remedy: take <i>bawang putih</i>, <i>pala</i> fruit, <i>perenggam</i> fruit and <i>cengkih</i> and <i>pelaga</i> fruit and <i>Hurmuz</i> salt and <i>lada sulah</i>,  roots, <i>pendandang besar</i> roots and <i>kulit lawang</i>; all of the same weight, then grind finely with honey. Clump them into the size of <i>bidara</i> fruit; swallow. Thus, the phlegm will be removed.</p>	<p><i>Lada sulah</i> <i>Pedandang</i><sup>5</sup> <i>Kulit lawang</i><sup>6</sup></p>	<p><i>Piper nigrum</i> <i>Tricosanthes wallichiana</i> <i>Illicium verum</i></p>		
F04	<p>Sebagai lagi ubat batuk daripada Lukman al-Hakim katanya 'sebab batuk itu kerana panas dan lemaknya kuning menggelupas kulit perutnya, keluar kahaknya putih seperti nanah dan darah. Maka ambil ubatnya cendana janggi dan marpusi dan buah hati kerbau dan akar dewaraja dan akar sekati lima, sekaliannya itu diasah maka bubuh pada cawan dan bertih sedikit. Maka minum pagi-pagi, aflat</p> <p>Also, a cough remedy from <i>Lukman al-Hakim</i>, who said 'the cause of cough is due to hot and yellowish fat peeled off from the stomach lining, (which) produces white, pus- and blood-like phlegm.' Then, take the remedy <i>cendana janggi</i> and <i>marpusi</i> and <i>buah hati kerbau</i> and <i>dewaraja</i> roots and <i>sekati lima</i> roots, <i>asah</i> everything, put in a cup, mix with roasted unhusked rice. Then, drink in the morning. It will heal.</p>	<p><i>Cendana janggi</i> <i>Marpusi</i> (~merpoi) <i>Buah hati kerbau</i> <i>Akar dewaraja</i> <i>Akar sekati lima</i> <i>Bertih</i></p>	<p><i>Pterocarpus santalinus</i> <i>Carallia brachiata</i> No information <i>Gynura procumbens</i> <i>Aganosma marginata</i> Roasted unhusked rice</p>	Drink in the morning	MSS 2515
F05	<p>Adapun kata segala tabib, sebab batuk, iaitu panas sebab kahaknya itu kuning; dan menggelupas kulit perutnya dan keluar kerehaknya putih seperti nanah, maka ambil ubat yang panas. Pertama cendana janggi dan marpusi dan buah hati kerbau dan</p>	<p><i>Cendana janggi</i> <i>Marpusi</i>(~merpoi) <i>Buah hati kerbau</i> <i>Akar delima</i> <i>Akar raja boga</i></p>	<p><i>Pterocarpus santalinus</i> <i>Carallia brachiata</i> No information <i>Punica granatum</i> No information</p>	Drink in the morning and evening	MSS 2515

<sup>5</sup> *Pedandang* refers to *Tricosanthes wallichiana* (*Kitab Tib Ilmu Perubatan Melayu*)

<sup>6</sup> *Lawang* refers to *Illicium verum* (<http://prpm.dbp.gov.my/>)

	akar delima dan akar raja boga dan akar sekati lima; dan segala akar-akar itu asah	Akar sekati lima	Aganosma marginata		
	Also, a quote from every healer: the root cause of cough is hot due to yellowish phlegm, the peeling off of the stomach lining and production of white pus-like phlegm. Therefore, take the hot remedy. First, <i>cendana janggi</i> and <i>marpusi</i> and <i>buah hati kerbau</i> and <i>delima</i> roots and <i>raja boga</i> roots and <i>sekati lima</i> roots, <i>asah</i> all the roots.				
F06	Sebagai lagi ubat yang ditampalkan pada dadanya itu ambil asam gelugur dan asam susur dan daun seganda dan daun delima maka giling kasar-kasar. Maka tampalkan pada dadanya, aflat	Asam gelugur Asam susur Daun seganda Daun delima	<i>Garcinia atroviridis</i> <i>Hibiscus sabdariffa</i> No information <i>Punica granatum</i>	Apply it on a chest	MSS 2515
	Also, the remedy to be applied on the chest: take <i>asam gelugur</i> and <i>asam susur</i> and <i>seganda</i> leaves and <i>delima</i> leaves, then grind roughly, then apply on the chest. It will heal.				
<b>Dry cough</b>					
F07	Sebagai pula ubat batuk yang kering iaitu tiada keluar sertanya balgham tatkala batuk itu demikian itu sebab bertambah perangai yang sejuk serta kering iaitu penyakit saudawi namanya tempatnya di dalam dada paru-paru akan ubatnya ambil halba maka rebus ke api empat kali atau lima kali tiap-tiap rebus itu dibuang airnya bubuh air lain pula setelah sudah rebus jemur kering setelah keringlah maka pipis lumat-lumat campurkan dengan tepung gandum maka permasak serta susu lembu dan minyak sapi dan segera jadikan kanji. Maka makan pagi petang jangan makanan lain daripada nasi'āfiyah olehnya	Halba Tepung gandum Susu lembu Minyak sapi <sup>7</sup>	<i>Trigonella foenum-graecum</i> <i>Triticum aestivum</i> Cow's milk Ghee oil	Eat in the morning and evening	MSS 2905
	Also, a remedy for dry cough without phlegm; when a cough is due to an increase in cold and dry characteristics, named as				

<sup>7</sup> *Minyak sapi* refers to oil from the fat of *Bos indicus* (*Kitab Perubatan Melayu: Al-Rahmah Fī Al-Tibb Wa Al-Hikma*)



*saudawi* disease (which source is) located inside the lung. As for the remedy, take *halba*, boil four to five times, change the water for every boil. After a boil, let it dry. After dry, grind finely, mix with *gandum* flour, cook with cow's milk and ghee oil and make it into starch. Then, eat in the morning, (and in the) evening. Do not eat other food except rice. It will heal.

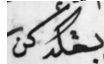
F08	<p><i>Al-su'āl al-yābis</i> ertinya batuk kering, iaitu batuk yang tiada keluar balgham tatkala batuk. Bermula asalnya sebab bertambah-tambah khilt sawdawi sejuk kering yang tertahan dalam dada dan paru-paru. Bermula ubatnya diambil halba diselir atas api qadar empat kal tau lima kal. Pada tiap-tiap kali dibasuh dalamnya tepung gandum qadar seumpamanya. Setelah itu menjadi akan kanji dengan air susu lembu dan minyak sapi dan sukkar. Maka dimakan pagi-pagi dan petang-petang dan dijauhi akan barang yang daripadanya.</p> <p><i>Al-su'āl al-yābis</i> means dry cough, which is a cough without phlegm while coughing. The cause (of the cough) is an increase in <i>khilt sawdawi</i> - cold and dry -that accumulate in the chest and lung. As for the remedy, take <i>halba</i> that have been scorched over the flame four to five times. Each time, wash with <i>gandum</i> flour of the same amount. After that, make it into starch with cow's milk and ghee oil and <i>sukkar</i>.</p>	<p><i>Halba</i> <i>Tepung gandum</i> <i>Susu lembu</i> <i>Minyak sapi</i> <i>Sukkar</i></p>	<p><i>Trigonella foenum-graecum</i> <i>Triticum aestivum</i> Cow's milk Ghee oil Fine sugar</p>	<p>Eat in the morning and evening</p>	<p>Al-Rahmah</p>
F09	<p>Sebagai pula ubat batuk yang kering iaitu tiada keluar serta balgham maka batuk yang demikian itu sebab bertambah perangnya sejuk sejuk serta kering penyakit <i>saudawi</i> namanya. Akan ubatnya ambil <i>kelemoyang</i> yang seperti warna emas dan minyak sapi maka dipermasak hingga mesra. Setelah sudah, maka tutup baik-baik, maka ambil cuka dan <i>tahi perak</i> maka ramas bubuk pada minyak sapi itu Maka jangan bubuk air lain setelah sudah permasakan pada api. Sudah masak maka makan pagi-pagi 'āfiyah olehnya.</p>	<p><i>Kelemoyang</i><sup>8</sup> <i>Minyak sapi</i> <i>Cuka</i> <i>Tahi perak</i></p>	<p><i>Homalomena spp.</i> Ghee oil Vinegar Oxidised silver</p>	<p>Eat in the morning</p>	<p>MSS 2905</p>

<sup>8</sup> *Kelemoyang* refers to *Homalomena spp.* (Globinmed.com), *Rhaphidophora minor* or *Languas conchigera* (<http://prpm.dbp.gov.my/>)

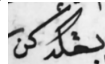
Also, a remedy for dry cough without phlegm; a cough that is due to an increase in its cold and dry characteristics and named as *saudawi* disease. As for the remedy, take *kelemoyang* which is gold-like in colour and ghee oil, then cook until they are well-mixed. After that, cover nicely. Then, take vinegar dan oxidised silver. Then, squeeze, put into the ghee oil. Do not add any water. After that, cook over a fire. After cook, eat in the morning. It will heal.

### Cough (Due to Cold Air, Lifting Heavy Things)

F10	<p><i>Sebagai pula ubat batuk yang jadi daripada angin yang sejuk sebabnya jadi itu kemudian daripada wati atau kemudian daripada menangkung benda yang berat-berat alamat demikian itu barangkali ia batuk rasa terbuka dadanya. Dan akan ubatnya ambil mur dan gandarukam dan mustaki berat tiga emas bungkal beratnya maka bubuh di dalam minyak lenga maka permasak hingga</i></p>	<p><i>Mur<sup>9</sup></i>  <i>Gandarukam</i>  <i>Mustaki</i>  <i>Minyak lenga</i></p>	<p><i>Citrullus colocynthis</i>  <i>Commiphora tetramera</i>  <i>Pistacia terebinthus</i>  <i>Sesamum indicum</i></p>	<p>Drink warm in the morning, at night before sleep or when coughing</p>	MSS 2905
-----	--	---	---	--	----------

*hancur sekalian itu maka  sekira-kira suam-suam dapat diminum maka kelubung kepalanya datang ke kaki maka bawa tidur sudah makan ubat itu dan makan pula daripada pagi-pagi dan pada ketika batuk jika tiada sembuh pada sehari itu maka makan berturut-turut nescaya sembuh olehnya.*

Also, a cough remedy due to cold air, or due to *wati* or due to lifting heavy things. As for its (clinical) manifestation, one may feel that his chest is open (excruciatingly) when he is coughing. As for the remedy: take *mur* and *gandarukam* and *mustaki* weight three gold, then add *lenga* oil until everything

is fully melted. Then,  while it is still warm; drink. Then, cover himself, from head to toe, then go to sleep after consuming the remedy and eat in the morning and while


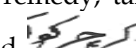
<sup>9</sup> *Mur* refers to *Citrullus colocynthis* or bitter cucumber (*Kitab Perubatan Melayu: Tayyib Al-Ihsan Fī Tibb Al- Insan*)

coughing. If not cured on that day, then eat consecutively. Surely, cured.

F11	<p><i>Al-su'āl al-rīhi ertinya batuk yang datang ia daripada sebab angin sejuk atau datang ia kemudian jima' atau kemudian menanggung sesuatu yang berat dan barang sebagainya Bermula alamat yang empunya penyakit batuk itu, tatkala itu datang batuk merasai seolah-olahan bercerai segala sendi. Bermula ubatnya diambil mur dan gandarukam dan mustaki dan tiap-tiap suatu satu dirham beratnya, maka dicampak dalam minyak lenga beratnya tiga uqiyah. Setelah itu maka ditutup atas api yang lemah lembut hingga hancur sekaliannya, kemudian maka diminum pesam-pesam</i></p> <p><i>Al-su'āl al-rīhi</i> means cough due to cold air or after sexual intercourse or due to lifting something heavy, or due to other things. The person suffers with the cough would feel as if the body joints are separated when coughing. As for the remedy, take <i>mur</i> and <i>gandarukam</i> and <i>mustaki</i>: each weight a dirham. Then add into <i>lenga</i> oil weight three <i>uqiyah</i>. After that, heat it up with soft-medium fire, and keep the lid on (i.e. cover the medicine pot) is on, until everything is fully melted. Then, drink (the mixture) warm.</p>	<p><i>Mur</i> <i>Gandarukam</i> <i>Mustaki</i> <i>Minyak lenga</i></p>	<p><i>Citrullus colocynthis</i> <i>Commiphora tetramera</i> <i>Pistacia terebinthus</i> <i>Sesamum indicum</i></p>	Drink warm	Al-Rahmah
F12	<p><i>Adapun tatkala makan ubat itu<sup>10</sup> makan tepung gandum dan tepung halba serta air madu dan jangan makan makanan yang lain daripada itu supaya segera sembuh olehnya.</i></p> <p>Also, while consuming the remedy, eat <i>gandum</i> flour and <i>halba</i> flour with honey and do not eat other food; so that one will heal soon.</p>	<p><i>Gandum</i> <i>Halba</i>  <i>Air madu</i></p>	<p><i>Triticum aestivum</i> <i>Trigonella foenum-graecum</i> Honey</p>	Eat	MSS 2905

**Lelah/Mengah**

<sup>10</sup> The remedy here refers to F10, that is the remedy before F12 in MSS 2905.

F13	<p>Sebagai pula ubat lelah maka ambil teras api-api dan akar otak udang dan  dan akar celaka dan sunti halia dan kedekai dan lada sulah dan cabai dan keladi puyuh maka buat ma'jun makan'āfiyah</p> <p>Also, for lelah remedy, take heartwood of api-api and otak udang roots and  and celaka roots and sunti halia and kedekai and lada sulah and cabai and keladi puyuh. Then, form (all the ingredients) into ma'jun. Eat. It will heal.</p>	<p>Teras api api<sup>11</sup>  Akar otak udang<sup>12</sup>  Akar ceraku  Akar celaka<sup>13</sup>  Sunti halia  Kedekai<sup>14</sup>  Lada sulah  Cabai<sup>15</sup>  Keladi puyuh<sup>16</sup></p>	<p><i>Avicennia spp</i>  <i>Buchanania arborescens</i>  No information  <i>Plumbago zeylanica</i>  <i>Zingiber officinale</i>  <i>Terminalia chebula</i>  <i>Piper nigrum</i>  <i>Piper longum</i>  <i>Typhonium trilobatum</i></p>	Eat	MSS 2905
F14	<p>Sebagai lagi ubat lelah ambil jintan hitam dan jemuju dan bawang dan lada sulah dan daun urang aring sama banyak segala ubat itu maka serbuk hancurkan dengan telur ayam dan air madu maka jadikan ma'jun maka telan 'āfiyah olehnya</p> <p>Also, for lelah remedy: take jintan hitam and jemuju and bawang and lada sulah and orang aring leaves, each with an equal amount. Then, grind with chicken egg and honey, then mould (all ingredients) into ma'jun. Then, swallow (the mixture). It will heal.</p>	<p>Jintan hitam<sup>17</sup>  Jemuju<sup>18</sup>  Lada sulah  Bawang  Daun urang aring<sup>19</sup>  Telur ayam  Air madu</p>	<p><i>Nigella sativa</i>  <i>Carum copticum</i>  <i>Piper nigrum</i>  <i>Allium cepa</i>  <i>Eclipta prostrata</i>  Chicken egg  Honey</p>	Swallow	MSS 2905

<sup>11</sup> *Api-api* refers to *Avicennia spp.* (<http://prpm.dbp.gov.my/>)

<sup>12</sup> *Otak udang* refers to *Buchanania lucida* or *Buchanania arborescens* (synonym) (<http://prpm.dbp.gov.my/>; <http://www.theplantlist.org/>)

<sup>13</sup> *Celaka* or *ceraka* refers to *Plumbago zeylanica* (<http://prpm.dbp.gov.my/>)

<sup>14</sup> *Kedekai* refers to *Terminalia chebula*. (<http://prpm.dbp.gov.my/>)

<sup>15</sup> *Cabai* refers to *Piper longum* (*Kitab Tib Ilmu Perubatan Melayu*)

<sup>16</sup> *Keladi puyuh* refers to *Typhonium trilobatum* (Globinmed.com)

<sup>17</sup> *Jintan hitam* may refer to *Nigella sativa* (*Kitab Tib Ilmu Perubatan Melayu*)

<sup>18</sup> *Jemuju* may refer to *Trachyspermum ammi* or *Carum copticum* (synonym) (Globinmed.com)

<sup>19</sup> *Urang aring* may refer to *Eclipta prostrata* (*Kitab Tib Ilmu Perubatan Melayu*)

F15	<p>Sebagai pula ubat yang lelah di dalam tubuh-tubuh anak Adam pertama ambil jemuju jintan hitam dan lada sulah dan cabai bawang putih segala itu diserbuk maka hancurkan dengan telur ayam hitam. Maka makan tiga pagi 'āfiyah</p> <p>Also, for lelah remedy within tubuh-tubuh anak Adam: firstly, take jemuju, jintan hitam and lada sulah and cabai, bawang putih. Make (the mixture) into powder form, (then) grind them with ayam hitam egg. Eat for three mornings. It will heal.</p>	<p>Jemuju Jintan hitam Lada sulah Cabai Bawang putih Telur ayam hitam</p>	<p><i>Carum copticum</i> <i>Nigella sativa</i> <i>Piper nigrum</i> <i>Piper longum</i> <i>Allium sativum</i> <i>Gallus gallus domesticus</i> egg</p>	Eat three morning	MSS 2905
F16	<p>Sebagai pula lelah pertama ambil adas manis dan air madu dan minyak sapi adas manis itu digiling beri lumat-lumat Maka permasak sekalian itu sekira-kira mawujudlah ubat itu tatkala hendak tidur 'āfiyah</p> <p>Also, for lelah remedy: firstly, take adas manis and honey and ghee oil. Grind adas manis finely, then cook everything until the remedy is ready; take it before sleep. It will heal.</p>	<p>Adas manis<sup>20</sup> Air madu Minyak sapi</p>	<p><i>Anethum graveolens</i> Honey Ghee oil</p>	Eat before sleep	MSS 2905
F17	<p>Ini ubat mengah. Ambil bonglai segantang, lada segantang, telur hayam, dihancur dengan garam jawa secawan, pipis sekaliannya itu, ditelan, sembuh alahnya</p> <p>This is a remedy for mengah: take a gallon of bonglai, a gallon of lada, chicken egg, grind finely with a cup of garam jawa; grind everything finely. Swallow (the mixture). It will cure.</p>	<p>Bonglai Lada Telur ayam Garam jawa</p>	<p><i>Zingiber cassumunar</i> <i>Piper spp.</i> Egg Salt</p>	Swallow	Sari
F18	<p>Apabila paru-paru yang bersaru-saru itu maka tiadalah habis nafasnya keluar masuk naik dan turun nafas itu maka menjadi lelah. Adapun akan ubatnya ambil gandum dan halia bara maka giling keduanya. Maka tampalkan kepada hulu hatinya, afiat</p>	<p>Gandum Halia bara</p>	<p><i>Triticum aestivum</i> <i>Zingiber officinale</i></p>	Apply on hulu hati	MSS 2515

<sup>20</sup> *Adas manis* may refer to *Anethum graveolens* (*Kitab Tib Ilmu Perubatan Melayu*)

When the lung that *bersaru-saru* without completely breathe out, in, up and down; the respiration becomes *lelah*. As for the remedy: take wheat, and *halia bara*; then, grind both materials. Then, apply on *hulu hati*. It will heal.

**Lelah/Rabw/Picik Bernafas/Intisab**

F19	<p><i>Bermula penyakit rabw, iaitu penyakit lelah dan penyakit picik bernafas. Barangsiapa menelan inggu setengah dirham dan diperikutkan dia dengan satu gelas daripada air rebusan buah tin dan karawiya dan anisun dan jintan putih yang direndam di dalam cuka nescaya hilang daripadanya penyakit picik bernafas mujarab</i></p>	<p><i>Ingu Buah tin Karawiya Anisun Jintan putih</i></p>	<p><i>Ferula asofoetida Ficus carica Carum caroi L. Pimpinella anisum Cuminum cyminum L.</i></p>	Swallow	Tayyib al-Ihsan
F20	<p>The beginning of <i>rabw</i> disease is <i>lelah</i> disease and <i>picik bernafas</i> disease. Those who swallow half dirham of <i>inggu</i>, followed by a glass of boiled water of tin fruit and <i>karawiya</i> and <i>anisun</i> and <i>jintan putih</i> that have first been soaked in the vinegar; indeed it heals the <i>picik bernafas</i> disease. Effective.</p> <p><i>Dan demikian minum air rebusan lebah dengan air za'faran mujarab</i></p>	<p><i>Air manisan lebah Air za'faran</i></p>	<p>Honey <i>Crocus sativus</i></p>	Drink	Tayyib al-Ihsan
	<p>And then, drink the boiled water of honey with <i>za'faran</i> water. Effective.</p>				
F21	<p><i>Dan demikian minum sandarus dan berukup dengan asapnya berkekalan</i></p>	<p><i>Sandarus</i></p>	<p><i>Tetraclinis articulata or Copal copaiifera</i></p>	Drink or inhale the smoke	Tayyib al-Ihsan
	<p>And then drink <i>sandarus</i> and inhale the smoke</p>				
F22	<p><i>Dan makan beberapa ketam yang dipanggangkan di atas api atau air rebusnya</i></p>	<p><i>Ketam</i></p>	<p>Crab</p>	Eat grilled crab/crab broth	Tayyib al-Ihsan
	<p>And eat a few crabs that have been grilled over the flame or crab broth</p>				

F23	<i>Dan minum minyak balsam menghilangkan lelah dan picik bernafas dan penyakit intisab</i>  And drink balsam oil to relieve <i>lelah</i> and <i>picik bernafas</i> and <i>intisab</i> disease.	<i>Minyak balsam</i>	<i>Sambucus nigra</i>	Drink	Tayyib al-Ihsan
<b>Lelah/Esak</b>					
F24	<i>Fasal pada menyatakan ubat lelah seperti orang esak berbunyi pada lehernya maka ambil kulit beka serta hujung lemukut mata kunyit dan arang sedikit dan garam jantan sebuku maka perah ambil airnya maka giling jintan hitam dan lada sulah tujuh biji campurkan pada air itu, minum dan hampasnya bubuh pada dada 'āfiyah</i>  This chapter stated about <i>lelah</i> remedy; when a person with <i>esak</i> makes a (breathing) sound from the neck. Take <i>kulit beka</i> with <i>hujung lemukut mata kunyit</i> and some charcoal and a lump of salt; squeeze (and) take the juice. Then, grind <i>jintan hitam</i> and seven pieces of <i>lada sulah</i> ; mix (this) with the juice. Drink (the mixture) and apply any residues on the chest. It will heal.	<i>Kulit beka</i> <sup>21</sup> <i>Hujung lemukut</i> <i>Mata kunyit</i> <i>Arang</i> <i>Garam jantan</i>  <i>Jintan hitam</i> <i>Lada sulah</i>	<i>Oroxylum indicum</i> Rice husk <i>Curcuma longa</i> Charcoal Coarse/ long-grained salt <i>Nigella sativa</i> <i>Piper nigrum</i>	Drink and apply the left residue on a chest	MSS 2905
F25	<i>Sebagai lagi ini ubat esak atau lelah maka ambil air belimbing buluh maka permasakkan, maka minum tiga pagi, afiat</i>  Also, a remedy for <i>esak</i> or <i>lelah</i> , then take the water of <i>belimbing buluh</i> , then cook. Drink for three mornings. It will heal.	<i>Air belimbing buluh</i>	<i>Averrhoa bilimbi</i>	Drink three mornings	MSS 2515
F26	<i>Sebagai lagi ubat esak atau lelah ambil daun malai-malai hitam taruknya dan nasi segempal; akan airnya air susu lembu, maka ramas makan tiga pagi, afiat</i>  Also, a remedy for <i>esak</i> or <i>lelah</i> : take <i>malai-malai hitam</i> leaves and a lump of boiled rice. For the broth, (add) cow's milk,	<i>Daun malai-malai hitam</i> <i>Susu lembu</i>	<i>Leea angulata</i>  Cow's milk	Eat three mornings	MSS 2515

<sup>21</sup> *Beka* or *bekak* or *bonglai kayu* refers to *Oroxylum indicum* (Gimlette, 1939)

	then squeeze (with the rice mixture). Eat for three mornings. It will heal.				
F27	<p>Sebagai lagi ubat esak atau lelah maka ambil belimbing besi tiga biji kerat kepalanya, masukkan inggu besar-besar kacang hijau maka masak pada kualiti jangan diberi masak sangat, maka angkat, makan tiga pagi, aflat</p> <p>Also, a remedy for <i>esak</i> or <i>lelah</i>: take three pieces of <i>belimbing besi</i>; cut at both ends of the fruits. Add <i>inggu</i> with the size of mung beans. Cook slightly in a pan; do not overcooked. Then, bring it out (of the pan). Eat for three mornings. It will heal.</p>	<p>Belimbing besi Inggu</p>	<p><i>Averrhoa carambola</i> <i>Ferula asafoetida</i></p>	Eat three mornings	MSS 2515
F28	<p>Sebagai lagi ubat esak atau lelah maka ambil batang sudu-sudu maka cincang lumat-lumat maka bubuh padi secupak maka rebus kira-kira pecah kulitnya padi itu maka bangkit buangkan batang sudu-sudu itu maka ambil padi itu jemur beri kering maka goreng, tumbuk lumat-lumat maka bubuh cabai secawan mesrakan dengan air madu maka diperbuat seperti ma'jun maka makan, aflat</p> <p>Also, a remedy for <i>esak</i> or <i>lelah</i>: take <i>sudu-sudu</i> stem, chop finely. Add paddy grains <i>secupak</i>; boil until the husked paddy break. Remove <i>sudu-sudu</i>. Take the paddy grains out to let it dry: (then,) fry and grind it finely. Then, add a cup of <i>cabai</i>, mix them well with honey, and make it into <i>ma'jun</i>. Then, eat (the <i>ma'jun</i>). It will heal.</p>	<p>Batang sudu-sudu Padi Cabai Air madu</p>	<p><i>Euphorbia neriifolia</i> <i>Oryza spp</i> <i>Piper longum</i> Honey</p>	Eat	MSS 2515
F29	<p>Sebagai lagi ubat esak atau lelah maka ambil daun gandarusa segenggam erat maka giling lumat-lumat, perah ambil airnya secawan telur. Sudah itu maka masukkan lada sulah tujuh biji dan jintan hitam sejempit, giling lumat-lumat bubuh kepada air gandarusa itu. Maka minum tiga pagi; dan hampasnya itu giling lumat-lumat, bedakkan pada seluruh tubuhnya, aflat</p> <p>Also, a remedy for <i>esak</i> or <i>lelah</i>: take a handful of tightly held of <i>gandarusa</i> leaves, grind them finely. Then, squeeze them, and add the juice (into) a cup of an egg. After that, add seven</p>	<p>Daun gandarusa Lada sulah Jintan hitam</p>	<p><i>Gendarussa vulgaris</i> <i>Piper nigrum</i> <i>Nigella sativa</i></p>	Drink three mornings and smear the residue over the body	MSS 2515



---

	pieces of <i>lada sulah</i> and a pinch of <i>jintan hitam</i> ; grind finely, and add them into the <i>gandarusa</i> juice. Then, drink (the juice mixture) for three mornings. Grind (any leftover) the residues finely, and apply it all over the body. It will heal.				
F30	<p><i>Sebagai lagi ubat batuk atau esak atau lelah maka ambil daun gandarusa yang hitam tujuh taruk dan lada sulah tujuh biji maka pipis bubuh cuka dengan mangkuk maka beri minum, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i> or <i>lelah</i>: take seven pieces of <i>gandarusa</i> black leaves and seven pieces of <i>lada sulah</i>, then grind them. Add vinegar into (the mixture) in a bowl. Then, drink (the mixture). It will heal.</p>	<p><i>Daun gandarusa</i> <i>Lada sulah</i> <i>Cuka</i></p>	<p><i>Gendarussa vulgaris</i> <i>Piper nigrum</i> <i>Vinegar</i></p>	<p>Drink</p>	<p>MSS 2515</p>
F31	<p><i>Sebagai lagi ubat esak atau lelah maka ambil daun tarum yang menahun maka buat lempeng makan, ukur dengan tangan orang sakit itu maka makan mengadap kepada dapur, aflat</i></p> <p>Also, a remedy for <i>esak</i> or <i>lelah</i>: take <i>tarum</i> leaves that <i>menahun</i>, then make them into <i>lempeng</i>. (The size of <i>lempeng</i> to made is as big as) the size of the sick person's hand. Then, eat it whilst facing the kitchen. It will heal.</p>	<p><i>Daun tarum</i></p>	<p><i>Indigofera suffruticosa</i></p>	<p>Eat</p>	<p>MSS 2515</p>
F32	<p><i>Sebagai lagi ubat esak atau lelah yang tiada boleh bernafas maka ambil pisang kelat tujuh biji dan nyiur hijau sebelah maka ambil santannya diramas diperbuat seperti dodol maka makan tiga pagi, aflat</i></p> <p>Also, a remedy for <i>esak</i> or <i>lelah</i> with difficulty in breathing: take seven pieces of <i>pisang kelat</i> and half of the coconut; then take the coconut milk. Squeeze (the bananas and coconut milk together) and make it into <i>dodol</i>. Then, eat it for three mornings. It will heal.</p>	<p><i>Pisang kelat</i> <i>Nyiur hijau</i></p>	<p><i>Musa paradisiaca</i> <i>Cocus nucifera var. veridis</i></p>	<p>Eat three mornings</p>	<p>MSS 2515</p>

---

F33	<p><i>Sebagai lagi ubat esak atau lelah maka ambil kulit duduk dan jintan hitam sepegapit dan bawang putih seulas dan garam jantan sebuku maka pipis lumat-lumat minum tiga pagi, aflat</i></p> <p>Also, a remedy for <i>esak</i> or <i>lelah</i>: take <i>kulit duduk</i> and <i>jintan hitam sepegapit</i>, and a bulb of <i>bawang putih</i> and a lump of salt. Then, grind finely. Drink (the mixture) for three mornings. It will heal.</p>	<p>Kulit duduk Jintan hitam Bawang putih Garam jantan</p>	<p>No information <i>Nigella sativa</i> <i>Allium sativum</i> Coarse/ long-grained salt</p>	<p>Drink three mornings</p>	<p>MSS 2515</p>
F34	<p><i>Sebagai lagi ubat esak atau lelah maka ambil akar cemekian dan akar cabai dan akar rengkinang dan akar jari ayam dan pelir pelanduk dan akar celaka dan akar birah hitam semuanya itu sama banyak, maka dicincang lumat-lumat maka jemur kering maka tumbuk lumat-lumat disertai kain. Maka apabila hendak makan hendak dihancurkan dengan air hangat maka minum secawan sampai tiga pagi, aflat</i></p> <p>Also, a remedy for <i>esak</i> or <i>lelah</i>: take <i>cemekian</i> roots and <i>cabai</i> roots and <i>rengkinang</i> roots and <i>jari ayam</i> roots and <i>pelir pelanduk</i> and <i>celaka</i> roots and <i>birah hitam</i> roots; each is an equal amount. Then, chop finely, and let them air dry. Then mash them finely with a cloth. To consume the remedy, melt it with warm water. Then, drink (the remedy) for three mornings. It will heal.</p>	<p>Akar cemekian Akar cabai Akar rengkinang Akar jari ayam Pelir pelanduk Akar celaka Akar birah hitam</p>	<p><i>Croton tiglium</i> <i>Piper longum</i> <i>Elaeocarpus floribundus</i> <i>Xylopiya ferruginea</i> No information <i>Plumbago zeylanica</i> <i>Alocasia denudata</i></p>	<p>Drink for three mornings (a glass)</p>	<p>MSS 2515</p>
F35	<p><i>Sebagai lagi ubat esak atau lelah maka ambil akar terung perat dan akar kaduk dan akar mensirah dan akar urang-aring dan lada sulah tujuh biji; kerat sesuatu kerat itu tujuh kerat, maka makan dengan sirih pinang bertemu urat, aflat</i></p> <p>Also, a remedy for <i>esak</i> or <i>lelah</i>: take <i>terung perat</i> roots, <i>kaduk</i> roots, <i>mensirah</i> roots, <i>urang-aring</i> roots and seven pieces of <i>lada sulah</i>; cut each into seven pieces. Then, eat them with <i>sirih pinang bertemu urat</i>. It will heal.</p>	<p>Akar terung perat Akar kaduk Akar mensirah Akar urang aring Lada sulah Pinang Sirih bertemu urat</p>	<p><i>Solanum nigrum</i> <i>Piper sarmentosum</i> <i>Ilex cymosa</i> <i>Eclipta prostrata</i> <i>Piper nigrum</i> <i>Areca catechu</i> <i>Piper betle</i></p>	<p>Eat with <i>sirih pinang</i></p>	<p>MSS 2515</p>

F36	<p><i>Sebagai lagi ubat batuk atau esak atau lelah atau barah maka ambil akar barah batu maka ambil akar terung perat maka asah dengan air limau purut dan air limau nipis dan halia bara dan bawang merah dan jintan hitam sejempit maka giling lumat-lumat, beri minum, afiat tiga hari atau tujuh hari</i></p> <p>Also, a remedy for cough or <i>esak</i> or <i>lelah</i> or <i>barah</i>: take <i>barah batu</i> roots, then take <i>terung perat</i> roots, then <i>asah</i> with <i>limau purut</i> water and <i>limau nipis</i> water and <i>halia bara</i> and <i>bawang merah</i> and a pinch of <i>jintan hitam</i>. Then grind them finely and drink (the remedy). It will heal, in three days or seven days.</p>	<p><i>Akar barah batu</i>  <i>Akar terung perat</i>  <i>Air limau purut</i>  <i>Limau nipis</i>  <i>Halia bara</i>  <i>Bawang merah</i>  <i>Jintan hitam</i></p>	<p>No information  <i>Solanum nigrum</i>  <i>Citrus hystrix</i>  <i>Citrus medica</i>  <i>Zingiber officinale</i>  <i>Allium cepa</i>  <i>Nigella sativa</i></p>	<p>Drink for three or seven days</p>	MSS 2515
<b>Cough/ Lelah/ Esak</b>					
F37	<p><i>Sebagai lagi ubat batuk atau esak atau lelah maka ambil lada sulah berat enam kupang dan sunti halia berat enam kupang dan mestaki berat enam kupang dan gandarukam berat enam kupang, halba berat enam kupang dan jintan berat enam kupang. Maka sekaliannya itu bubuh air maka dimasak perbuat ma'jun maka kelik seperti buah kuru maka makan dua kali sehari; amalkan ubat ini.</i></p> <p>Also, a remedy for cough or <i>esak</i> or <i>lelah</i>: then take six cents weight of <i>lada sulah</i> and six cents weight of <i>sunti halia</i> and six cents weight of <i>mestaki</i> and six cents weight of <i>gandarukam</i>, six cents weight of <i>halba</i> and six cents weight of <i>jintan</i>. Then, add everything into water, cook and make them into <i>ma'jun</i>. Then, take them out and make into <i>kuru</i> fruit. Then, eat (the remedy) twice a day. Consume the remedy as a supplement.</p>	<p><i>Lada sulah</i>  <i>Sunti halia padi</i>  <i>Mestaki</i>  <i>Gandarukam</i>  <i>Halba</i>  <i>Jintan</i></p>	<p><i>Piper nigrum</i>  <i>Zingiber officinale</i>  <i>Pistacia terebinthus</i>  <i>Commiphora tetramera</i>  <i>Trigonella foenum-graecum</i>  <i>Cuminum cyminum</i></p>	<p>Eat two times per day, after meals (rice with water)</p>	MSS 2515
F38	<p><i>Sebagai lagi ubat batuk atau esak atau lelah maka ambil daun jarak dan lada sulah tujuh kali tujuh maka garam dan jintan hitam dan hujung melukut mata kunyit maka giling lumat-lumat buatkan lempeng maka makan barang sepuluh hari, afiat</i></p> <p>Also, a remedy for cough or <i>esak</i> or <i>lelah</i>: take <i>jarak</i> leaves and <i>lada sulah</i> (in the amount of) seven times seven, then salt and <i>jintan hitam</i> and <i>hujung melukut mata kunyit</i>. Then grind finely</p>	<p><i>Daun jarak</i>  <i>Lada sulah</i>  <i>Garam</i>  <i>Jintan hitam</i>  <i>Hujung melukut</i>  <i>Mata kunyit</i></p>	<p><i>Ricinus communis</i>  <i>Piper nigrum</i>  Salt  <i>Nigella sativa</i>  Rice (<i>Oryza sativa</i>) husk  <i>Curcuma longa</i></p>	<p>Eat for ten days</p>	MSS 2515

	and make it into <i>lempeng</i> . Then, eat (the remedy) for ten days. It will heal.				
F39	<p><i>Sebagai lagi ubat batuk atau esak atau lelah keluarkan balgham maka ambil daun baru minyak dan daun cangkuk manis dan lada sulah dan garam jantan dan hujung melukut mata kunyit maka pipis lumat-lumat ditampalkan pada dadanya aflat</i></p> <p>Also, a remedy for cough or <i>esak</i> or <i>lelah</i> for phlegm removal: take <i>baru minyak</i> leaves and <i>cangkuk manis</i> leaves and <i>lada sulah</i> and <i>garam jantan</i> and <i>hujung melukut mata kunyit</i>; then grind them finely. Apply it on a chest.</p>	<p><i>Daun baru minyak</i>  <i>Daun cangkuk manis</i>  <i>Lada sulah</i>  <i>Garam jantan</i>  <i>Hujung melukut</i>  <i>Mata kunyit</i></p>	<p>No information  <i>Schima wallichii</i>  <i>Piper nigrum</i>  Coarse/ long-grained salt  Rice (<i>Oryza sativa</i>) husk  <i>Curcuma longa</i></p>	Apply it on a chest	MSS 2515
F40	<p><i>Sebagai lagi ubat batuk atau esak atau lelah mengeluarkan balghamnya maka ambil daun maru dan cengkih dan kayu manis dan hujung melukut mata kunyit maka pipis lumat-lumat tampalkan pada dadanya aflat</i></p> <p>Also, a remedy for cough or <i>esak</i> or <i>lelah</i> for phlegm removal: take <i>maru</i> leaves and <i>cengkih</i> and <i>kayu manis</i> and <i>hujung melukut mata kunyit</i>. Then, grind them finely. Apply it on a chest. It will heal.</p>	<p><i>Daun maru</i>  <i>Cengkih</i>  <i>Kayu manis</i>  <i>Hujung melukut</i>  <i>Mata kunyit</i></p>	<p>No information  <i>Syzygium aromaticum</i>  <i>Cinnamomum zeylanicum</i>  Rice (<i>Oryza sativa</i>) husk  <i>Curcuma longa</i></p>	Apply it on a chest	MSS 2515
F41	<p><i>Sebagai lagi ubat lelah atau esak atau batuk dengan tiada balgham, iaitu kerana angin maka ambil batang teberau dan bunganya dan pulurnya dan daun sekati lima dan halba dan bawang putih dan bawang merah maka semuanya direbus masak-masak, minum airnya, aflat</i></p> <p>Also, a remedy for <i>lelah</i> or <i>esak</i> or cough without phlegm, that is due to (cold?) air: take the stem, flower and <i>pulur</i> of <i>teberau</i> and <i>sekati lima</i> leaves and <i>halba</i> and <i>bawang putih</i> and <i>bawang merah</i>. Then, boil everything and cook them. Drink the water (mixture). It will heal.</p>	<p><i>Batang/bunga/pulur teberau</i>  <i>Daun sekati lima</i>  <i>Halba</i>  <i>Bawang putih</i>  <i>Bawang merah</i></p>	<p><i>Saccharum arundinaceum</i>  <i>Aganosma marginata</i>  <i>Trigonella foenum-graecum</i>  <i>Allium sativum</i>  <i>Allium cepa</i></p>	Drink	MSS 2515

F42	Sebagai lagi ini ubat tampalkan di luarnya akan ambil daun sekunyit segenggam erat dan daun ribu-ribu segenggam erat dan padi pulut segenggam erat, maka digoreng hangus-hangus maka dicampur semua itu digiling lumat-lumat tampalkan pada dadanya.	Daun sekunyit Daun ribu-ribu Padi pulut	Coscinium blumeanum Lygodium spp. Oryza sativa	Apply it on a chest	MSS 2515
-----	--	---	--	---------------------	----------

Also, a remedy to be applied for the external use: take a handful of tightly held *sekunyit* leaves and a handful of *ribu-ribu* leaves and a handful of *padi pulut*. Then fry them until slightly burn, and then mix everything and grind all finely. Apply it on a chest.

### Cough/Esak

F43	Sebagai pula ubat batuk atau puru atau esak pertama ambil halia bara hiris-hiris maka jemurkan beri layu maka perbuatkan halwa. Bermula akan airnya air madu maka ambil akar kenderi dan mustaki dan mur dan dan akar kijang kera dan cengkih dan jemuju benar jemuju kersani dan jahakeling jahalawi, maka sekalian itu diserbuk masukkan ke dalam halwa halia itu, maka dihangatkan pula sudah hangat maka angkatlah maka taruh pada suatu tatkala makan ubat ini itu maka makan bubur maka perbuat seperti bubur pedas dan jangan pedas sangat bermula petangnya jangan makan	Halia bara Air madu Akar kenderi <sup>22</sup> Mustaki Mur Kijang kera Cengkih Jemuju benar <sup>23</sup>	Zingiber officinale Honey Adenanthera pavonina Pistacia terebinthus Citrullus colocynthis No information Syzygium aromaticum Trachyspermum ammi Hyoscyamus niger	Consume the remedy with spicy porridge ( <i>bubur</i> ) and <i>halwa</i> (sweet confections)	MSS 2905
-----	--	--	--	--	----------

Also, for cough, *puru* or *esak* remedy: firstly, take *halia bara*, slice, and let it dry. Then, make into *halwa*. (For a second mixture,) take honey, *kenderi* roots and *mustaki* and *mur* and *kijang kera* roots and *cengkih* and *jemuju benar*, *jemuju kersani* and *jahakeling*, *jahalawi*; then powderise them and add into *halwa halia*. Then, heat the mixture up, and take it out and leave to cool. When taking the medicine, eat with spicy-porridge, but not too spicy. One should also have his last meal in the afternoon.

<sup>22</sup> *Kenderi* refers to *Adenanthera pavonina* (<http://prpm.dbp.gov.my/>)

<sup>23</sup> *Jemuju benar* refers to *Trachyspermum ammi* (*Kitab Perubatan Melayu: Khazinat Al- Insan*)

---

*Jemuju kersani*<sup>24</sup>  
*Jahakeling*  
*Jahalawi (~ jelowai*  
*jaha)*

*Terminalia chebula*<sup>25</sup>  
*Terminalia subspathulata*

---

<sup>24</sup> *Jemuju kersani* refers to *Hyoscyamus niger* (*Kitab Perubatan Melayu: Khazinat Al- Insan*)

<sup>25</sup> Also known in Malay as *kedekai*. See The Database of Ethno-medicines in the World: <https://ethmed.toyama-wakan.net/SearchEn/View/36565>

F44	<p>Sebagai lagi ubat batuk dari dalam demam atau batuk sahaja. Adapun ubat ini daripada Lukman al-Hakim. Jikalau orang sakit batuk atau esak atau dingin maka ambil batang sudu-sudu maka cincang pada rumput sentang maka jemur kering-kering maka ambil airnya segantang bubuk di belanga besi, maka sudu-sudu itu dicampurkan dengan padi maka rebus dengan air sekira-kira padi itu menjadi nasi maka rendam beras itu jadikan lempeng; maka taruh baik-baik. Jika orang batuk atau esak maka beri makan kadar berat sepeha atau tengah tahlil, aflat</p> <p>Also, a remedy for cough with fever or cough only. The remedy is from <i>Lukman al-Hakim</i>: if one has cough or <i>esak</i> or cold, then take <i>sudu-sudu</i> stem, chop on <i>sentang</i> grass, and air dry. Then, take a gallon of water, put it into <i>belanga besi</i>. Then, mix <i>sudu-sudu</i> with paddy, then boil with water until the paddy is cooked into the rice, soak the boiled rice, make it into lempeng, and put it nicely. If one has cough or <i>esak</i>, the dosage (of this remedy) is the weight of <i>sepeha</i> or half tahlil. It will heal.</p>	Batang sudu-sudu Padi	<i>Euphorbia nerifolia</i> <i>Oryza sativus</i>	Eat (weight: <i>sepeha</i> or ½ <i>tahlil</i> )	MSS 2515
F45	<p>Sebagai lagi ubat batuk atau esak maka ambil akar ribu-ribu dan bawang putih selabu dan lada sulah tujuh belas biji dan garam jantan maka sekaliannya itu dipipis lumat-lumat maka masakkan seperti ubat hangat maka telan, aflat</p> <p>Also, a remedy for cough or <i>esak</i>: take the <i>ribu-ribu</i> roots and a bulb of <i>bawang</i> and seventeen pieces of <i>lada sulah</i> and coarse salt. Then, grind everything finely, cook and make it into a hot remedy, then swallow it. It will heal.</p>	Akar ribu-ribu Bawang putih Lada sulah Garam jantan	<i>Lygodium spp.</i> <i>Allium sativum</i> <i>Piper nigrum</i> Coarse or long-grained salt	Swallow	MSS 2515

F46	<p><i>Sebagai lagi ubat batuk atau esak maka ambil inggu dan air belimbing besi dan bawang dan serai maka masakkan pada belanga setelah hancurlah inggu itu. Maka diberi minum, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take <i>inggu</i> and the juice of <i>belimbing besi</i> and <i>bawang</i> and <i>serai</i>, then cook them in a pot. After the <i>inggu</i> is fully melted, drink the remedy. It will heal.</p>	<p><i>Ingg</i> <i>Belimbing besi</i> <i>Bawang</i> <i>Serai</i></p>	<p><i>Ferula asofoetida</i> <i>Averrhoa carambola</i> <i>Allium cepa</i> <i>Cymbopogon citratus</i></p>	<p>Drink</p>	<p>MSS 2515</p>
F47	<p><i>Sebagai lagi ubat batuk atau esak maka ambil pisang kelat tujuh buah dan nyiur hijau sebutir maka ambil santannya; maka pisang itu diramas serta santan permasakkan dahulu, makan tiga hari, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take <i>pisang kelat</i> seven pieces and a piece of coconut, then take the coconut milk, then squeeze the <i>pisang</i> with cooked coconut milk. Eat for three days. It will heal.</p>	<p><i>Pisang kelat</i> <i>Nyiur hijau</i></p>	<p><i>Musa paradisiaca</i> <i>Cocos nucifera</i></p>	<p>Eat three days</p>	<p>MSS 2515</p>
F48	<p><i>Sebagai lagi ubat batuk atau esak maka ambil cuka yang masam dan daun tembaga suasa itu layur dahulu beri layu tujuh helai maka sapu minyak lenga maka ramas ambil patinya maka campurkan dengan minyak lenga itu, maka minum tiga pagi, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take sour vinegar and seven pieces of <i>tembaga suasa</i> leaves that have been scorched over a flame until wilted, rub them with <i>lenga</i> oil. Then, squeeze the mixture to get the extract. Then, mix (the extract) with <i>lenga</i> oil. Then, drink for three mornings. It will heal.</p>	<p><i>Cuka masam</i> <i>Daun tembaga suasa</i> <i>Minyak lenga</i></p>	<p>Vinegar <i>Smilax calophylla</i> <i>Sesamum indicum</i></p>	<p>Drink three mornings</p>	<p>MSS 2515</p>
F49	<p><i>Sebagai lagi ubat batuk atau esak maka ambil susu secawan maka bubuh getah rembega barang setitik maka minum, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take a cup of milk, then add a drop of <i>rembega</i> latex. Then, drink it. It will heal.</p>	<p><i>Susu</i> <i>Rembega</i></p>	<p>Milk <i>Calotropis gigantean</i></p>	<p>Drink</p>	<p>MSS 2515</p>



F50	<p><i>Sebagai lagi ubat batuk atau esak maka ambil akar terung perat dan kedekai dan akar mota dan akar urang aring dan lada sulah tujuh biji maka kerat-kerat sesuatu akar itu tujuh kerat maka makan dengan sirih pinang dan sirihnya itu bertemu urat, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>, take <i>terung perat</i> roots and <i>kedekai</i> and <i>mota</i> roots and <i>urang aring</i> roots and seven pieces of <i>lada sulah</i>, then cut each root into seven. Then, eat with <i>sirih pinang</i> and with <i>sirih bertemu urat</i>. It will heal.</p>	<p><i>Akar terung perat</i>  <i>Kedekai</i>  <i>Akar mota</i>  <i>Akar urang aring</i>  <i>Lada sulah</i>  <i>Pinang</i>  <i>Sirih bertemu urat</i></p>	<p><i>Solanum nigrum</i>  <i>Terminalia chebula</i>  <i>Cyperus rotundus</i>  <i>Eclipta prostrata</i>  <i>Piper nigrum</i>  <i>Areca catechu</i>  <i>Piper betle</i></p>	Eat with <i>sirih pinang</i>	MSS 2515
F51	<p><i>Sebagai lagi ubat batuk atau esak maka ambil daun malai malai hitam dan nasi segempal dan air susu maka diramas semuanya itu maka makan tiga pagi, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take <i>malai malai hitam</i> leaves and a lump of boiled rice and milk, then press (squeeze) everything. Then, eat for three mornings. It will heal.</p>	<p><i>Daun malai-malai hitam</i>  <i>Nasi</i>  <i>Susu</i></p>	<p><i>Leea angulata</i></p> <p>Boiled rice  Milk</p>	Eat three mornings	MSS 2515
F52	<p><i>Sebagai lagi ubat batuk atau esak maka ambil daun taruk ribu-ribu tujuh taruk dan bawang tujuh ulas dan lada empat belas biji dan beras sejempit dan garam benggala sedikit maka pipis lumat-luma, akan airnya air cuka masam maka gentel telan atau diminum, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take seven pieces of <i>ribu-ribu</i> leaves, seven bulbs of <i>bawang</i>, and fourteen pieces of <i>lada</i> and a pinch of raw husked rice and <i>benggala</i> salt. Then, grind all ingredients finely; add sour vinegar. Then clump, swallow or drink the medicine. It will heal.</p>	<p><i>Ribu-ribu</i>  <i>Bawang</i>  <i>Lada</i>  <i>Beras</i>  <i>Garam benggala</i>  <i>Cuka</i></p>	<p><i>Lygodium spp.</i>  <i>Allium cepa</i>  <i>Piper spp.</i>  Raw husked rice  Salt  Vinegar</p>	Swallow or drink	MSS 2515

F53	<p><i>Sebagai lagi ubat batuk atau esak maka ambil temu perang dan kapur barus maka makan dengan sirih pinang, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take <i>temu perang</i> and <i>kapur barus</i>. Then, eat with <i>sirih pinang</i>. It will heal.</p>	<p>Temu perang Kapur barus Sirih Pinang</p>	<p><i>Curcuma aeruginosa</i> <i>Dryobalanops aromatica</i> <i>Piper betle</i> <i>Areca catechu</i></p>	<p>Eat with <i>sirih pinang</i></p>	<p>MSS 2515</p>
F54	<p><i>Sebagai lagi diambil kedekai berat dua emas maka pipis dengan air madu maka gentel tiga pagi, aflat</i></p> <p>Also, take <i>kedekai</i> the weight of two gold, then grind with honey, and then clump (the ingredients together). Then, eat for three mornings. It will heal.</p>	<p>Kedekai Air madu</p>	<p><i>Terminalia chebula</i> Honey</p>	<p>Eat three mornings</p>	<p>MSS 2515</p>
F55	<p><i>Sebagai lagi ubat batuk atau esak maka ambil akar kermak dan akar urang aring dan halia padi maka bubuh buluh maka direndamkan dengan minyak lenga maka minum tiga pagi, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>, take <i>kermak</i> roots and <i>urang aring</i> roots and <i>halia padi</i>. Then, place them into a bamboo, and soak it in <i>lenga</i> oil. Then, drink for three mornings. It will heal.</p>	<p>Akar kermak Akar urang aring Halia padi Minyak lenga</p>	<p><i>Alternanthera sessilis</i> <i>Eclipta prostrata</i> <i>Zingiber officinale</i> <i>Sesamum indicum</i></p>	<p>Drink three mornings</p>	<p>MSS 2515</p>
F56	<p><i>Sebagai lagi ubat batuk atau esak maka ambil akar kecubung berat setahil dan akar gandarusa berat setahil dan akar gelang sumbu berat setahil dan akar tanjung berat setahil sepuluh emas dan akar kirai berat setahil dua emas. Maka semuanya itu direndamkan maka giling lumat-lumat maka masukkan air nyiur hijau maka tutup dengan tanah liat maka tanam ke dalam tanah maka bubuh api di atasnya tujuh hari kering-kering. Maka direndamkan maka bubuh air madu maka kelik jadikan tujuh belas biji jamu beri kering-kering. Maka direndamkan dalam cuka yang masam tiga hari makan makan pagi-pagi dan petang sehari, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take <i>kecubung</i> roots weight a tahlil and <i>gandarusa</i> roots weight a tahlil and <i>gelang sumbu</i> roots weight a tahlil and <i>tanjung</i> roots weight a tahlil ten gold and <i>kirai</i> roots weight a tahlil two gold. Then, soak everything and grind them finely. Then add coconut juice into the</p>	<p>Akar kecubung Akar gandarusa Akar gelang sumbu Akar tanjung Akar kirai Nyiur hijau Air madu Cuka masam</p>	<p><i>Datura metel</i> <i>Gendarussa vulgaris</i> No information <i>Mimusops elengi</i> <i>Hiptage sericea</i> <i>Cocus nucifera</i> Honey Vinegar</p>	<p>Eat in the morning and evening per day</p>	<p>MSS 2515</p>

	<p>mixture, then cover it with clay. Bury (the pot) in the ground and light a fire on the pot (clayed-cover) for seven days, until it becomes completely dried. Then, soak the medicine in honey. Then, take it out. Make it into seventeen pieces of <i>jamu</i>, and dry them. Then, soak the medicine in vinegar for three days. Eat in the morning and in the evening daily. It will heal.</p>				
F57	<p><i>Sebagai lagi ubat batuk atau esak maka ambil daun gandarusa segenggam erat jangan bernafas maka giling lumat-lumat jangan bubuh air maka perah ambil patinya maka ambil minyak tanak atau minyak bijan maka minum, aflat</i></p> <p>Also, a remedy for cough or <i>esak</i>: take a tightly, without breathing, handful of <i>gandarusa</i> leaves. Grind finely. Without adding water, press the leaves to get the extract, and add <i>tanak</i> oil or <i>bijan</i> oil. Then, drink (the medicine). It will heal.</p>	<p><i>Daun gandarusa</i> <i>Minyak tanak</i><sup>26</sup> <i>Minyak bijan</i></p>	<p><i>Gendarussa vulgaris</i> <i>Cocos nucifera</i> <i>Sesamum indicum</i></p>	<p>Drink</p>	<p>MSS 2515</p>

### Cough

F58	<p><i>Sebagai pula ubat batuk ambil air madu maka permasak perlahan-lahan jangan banyak api, maka bubuh-bubuh gandarukam berat enam kupang, telah mesralah maka bubuh-bubuh di dalam nyiur hijau dan halba yang sudah terendang beratnya enam kupang, maka pada dia beri lumat-lumat, maka campurkan pada ubat itu, maka jadikan ma'jun. Maka makan pagi-pagi pada ketika belum makan nasi dan tatkala hendak tidur makan pula tatkala berubat itu jangan ditinggalkan air madu supaya segera sembuh olehnya.</i></p> <p>Also, a cough remedy: take honey, cook slowly under slow heat, <i>bubuh-bubuh gandarukam</i> weight six cents, after mixed well, then <i>bubuh-bubuh</i> into <i>nyiur hijau</i> and <i>halba</i> that have been</p>	<p><i>Air madu</i> <i>Gandarukam</i><sup>27</sup> <i>Halba</i><sup>28</sup> <i>Nyiur hijau</i></p>	<p>Honey <i>Commiphora tetramera</i> <i>Trigonella foenum graecum</i> <i>Cocos nucifera</i></p>	<p>Eat in the morning before meals or before sleep</p>	<p>MSS 2905</p>
-----	---	--	---	--	-----------------

<sup>26</sup> This refers to the oil extracted by boiling the coconut milk for some time until the oil becomes separated from the coconut milk.

<sup>27</sup> *Gandarukam* refers to a tree, *Flacourtia rukam* Zoll. & Moritzi (Globinmed.com) and *Commiphora tetramera* (Dermatologi dalam Kitab Muzium Terengganu)

<sup>28</sup> *Halba* refers to *Trigonella foenum graecum* or fenugreek (*Kitab Perubatan Melayu: Al-Rahmah Fī Al-Tibb Wa Al-Hikma*)

*terendang* weight six cents. Then grind finely, and then mix into the remedy, and make it into *ma'jun*. Then, eat in the morning before meals and before sleep; while taking the remedy, eat also honey. It will heal soon.

F59	<p><i>Sebagai pula ubat batuk ambil kepulaga dan kayu manis jawa dan lada sulah, bawang putih dan hingu dan halia padi kukus sekalian itu pipis lumat-lumat akan airnya air madu 'āfiyah</i></p> <p>Also, a cough remedy, take <i>kepelaga</i> and <i>kayu manis jawa</i> and <i>lada sulah</i>, <i>bawang putih</i> and <i>hingu</i> and <i>halia padi</i>, steam everything, grind it finely with honey. It will heal.</p>	<p><i>Kepulaga (pelaga)</i><sup>29</sup>  <i>Kayu manis jawa</i>  <i>Lada sulah</i>  <i>Bawang putih</i>  <i>Hingu</i><sup>30</sup>  <i>Halia padi</i>  <i>Air madu</i></p>	<p><i>Amomum cardamomum</i>  <i>Cinnamomum javanicum</i>  <i>Piper nigrum</i>  <i>Allium sativum</i>  <i>Ferula asofoetida</i>  <i>Zingiber officinale</i>  Honey</p>	Eat	MSS 2905
F60	<p><i>Sebagai lagi ubat batuk atau barah maka ambil lada sulah dan halia kering dan kayu manis Cina dan ibu kunyit dan Jahar keling maka semuanya sama berat maka giling lumat-lumat maka gentel dengan air madu; makan tatkala hendak tidur, berat seemas, tujuh hari, aflat</i></p> <p>Also, a cough remedy or <i>barah</i>: take <i>lada sulah</i> and <i>halia kering</i> and <i>kayu manis Cina</i> and <i>ibu kunyit</i> and <i>jahar keeling</i>; all of the same weight. Then grind finely, then mold (clump) it with honey. Eat (the remedy) before sleep, (and the dosage is) the weight of a gold, for seven days. It will heal.</p>	<p><i>Lada sulah</i>  <i>Halia kering</i>  <i>Kayu manis cina</i>  <i>Ibu kunyit</i>  <i>Jaha keling</i>  <i>Air madu</i></p>	<p><i>Piper nigrum</i>  <i>Zingiber officinale</i>  <i>Cinnamomum cassia</i>  <i>Curcuma longa</i>  <i>Terminalia chebulia parviflora</i></p> <p>Honey</p>	Eat before sleep for seven days (weight: <i>seemas</i> )	MSS 2515
F61	<p><i>Bab ini ubat demam kepialu yang beraf'al batuk, maka ambil daun gandarusa dan daun limau kapas dan daun kecubung maka bakar, ambil abunya semburkan dengan sirih pinang pada dadanya, aflat</i></p> <p>This chapter (describes) a remedy for typhoid with cough: take <i>gandarusa</i> leaves and <i>limau kapas</i> leaves and <i>kecubung</i> leaves, burn, and take the ashes. Spray (the ashes) with <i>sirih pinang</i> on a chest. It will heal.</p>	<p><i>Daun gandarusa</i>  <i>Daun limau kapas</i>  <i>Daun kecubung</i>  <i>Pinang</i>  <i>Sirih</i></p>	<p><i>Gendarussa vulgaris</i>  <i>Citrus aurantifolia</i>  <i>Datura metel</i>  <i>Areca catechu</i>  <i>Piper betel</i></p>	Spray with <i>sirih pinang</i> on a chest	MSS 2515

<sup>29</sup> *Kepulaga* or *kepelaga* or *pelaga* refers to *Amomum cardamomum* or *Amomum kepulaga* (*Kitab Tib Ilmu Perubatan Melayu*)

<sup>30</sup> *Hingu* refers to *Ferula asofoetida* (*Kitab Perubatan Melayu: Al-Rahmah Fī Al-Tibb Wa Al-Hikma*)

F62	<i>Ini ubat batuk-batuk maka ambil tanduk kambing dan cendana janggi dan akar serapat belerang bang. Maka asah minum in shā' Allāh 'āfiyah</i>	Tanduk kambing Cendana janggi <sup>31</sup> Akar serapat <sup>32</sup> Belerang	Goat horn <i>Pterocarpus santalinus</i> <i>Mapina petiolata</i> Sulfur	Drink	MSS 3749
	This is a cough remedy: take <i>tanduk kambing</i> and <i>cendana janggi</i> and <i>serapat</i> roots <i>belerang bang</i> , then, <i>asah</i> and drink in <i>shā' Allāh</i> . It will heal.				

‡ **Tayyib al-Ihsan**, *Kitab Perubatan Melayu: Tayyib Al-Ihsan Fi Tibb Al- Insan*; **Al-Rahmah**, *Kitab Perubatan Melayu: Al-Rahmah Fi Al-Tibb Wa Al-Hikmah*; **Sari**, *Kitab Perubatan Melayu: Sari Segala Ubat*

<sup>31</sup> *Cendana janggi* may refer to *Pterocarpus santalina* (<https://kbbi.web.id/>)

<sup>32</sup> *Serapat* may refer to *Mapina petiolata* (Globinmed.com), *Streptocaulon wallichii* (*Kitab Tib Ilmu Perubatan Melayu*, <http://prpm.dbp.gov.my/>)

For *balgham* (Malay: productive cough), six formulations were identified. The number of materials used in the formulations was between four to nine materials. F01 and F02 are similar, despite them being retrieved from two different manuscripts (Table 2). Common materials for *balgham* include *cendana janggi*, *gandarukam*, *halba*, *halia*, *jintan hitam*, *lada*, *madu*, *mustaki* and *sekati lima* (all were mentioned twice each; Table 3).

Three formulations were available for *batuk kering* (Malay: dry cough). F04 and F05 are almost similar in terms of the materials and mode of administration. Both were retrieved from MSS 2905 and Al-Rahmah, respectively (Table 2). The only difference between the two was that in Al-Rahmah, sugar is added to the formulation. *Minyak sapi* is the common material for all three formulations.

Three formulations were retrieved from two manuscripts for *batuk sebab angin sejuk*. F07 from MSS 2905 and F08 from Al-Rahmah are similar, but F08 has added sugar in the formulation (Table 2). No similar material was used in the third formulation. Common *materia medica* for cold-induced cough are *gandarukam*, *lenga*, *mur* and *mustaki* (all were mentioned twice each; Table 3)

In the Malay medical manuscripts, several terms are used to describe asthmatic cough, including *lelah*, *esak*, *picik bernafas*, *intisab* or *rabw*. *Lelah* was described in three manuscripts: MSS 2905, MSS 2515 and Tayyib al-Ihsan. Overall, there are six formulations for *lelah* only and 19 formulations for *lelah* or *esak*. Two remedies for *lelah* have similar materials in their prescriptions (F14 and F15), but their modes of administration are slightly different (Table 2). Both F29 and F30 use three materials in the formulations. Two of the materials are similar in both formulations, *daun gandum* (Malay: wheat leaf) and *lada sulah* (Malay: white pepper), but the third material is different (*Nigella sativa* or vinegar). F38 and F39 also have almost similar materials prescribed in their formulations; however, whilst F38 is prescribed orally, F39 remedy is used for topical application on the chest (Table 2). Fifteen more formulations are written for *esak* and five more for *rabw* or *picik bernafas*. Five formulations for *rabw* are all retrieved from the Al-Rahmah text. Each formulation is unique, with no similarities between the materials. Three of these formulations are monomaterial, which used *sandarus*, crab and *minyak balsan* in their treatments for *rabw*, respectively. In general, common materials prescribed for asthmatic cough are *lada* (mentioned 14 times in the manuscripts), *jintan hitam* (n=7), *madu* (n=7), *halia* (n=6), *bawang* (n=5) and *kunyit* (n=5) (Table 3).

For cough only sickness, five formulations are prescribed. Honey is mentioned 6 times for treating coughs; some of the formulations overlapped with the formulations for *lelah* and *esak* (F20, F28 and F56; Table 3). Other materials for coughs are *halia* (n=4), *lada* (n=4) and *nyjiur* (n=4).

It was found that these common materials are not commonly prescribed for all types of coughs. Out of 93 plant species found in the Malay texts, only *halba* appears to be helpful for all types of coughs in the Malay medical manuscripts. Honey, *gandarukam* and *mustaki* are prescribed for all coughs except for dry cough (Table 3). Most of the materials are also prescribed for at least two types of coughs, as shown in Table 3. Based on the number of times each material is mentioned in the Malay medical manuscripts and the large list of materials used, asthmatic cough is the most mentioned type of cough in the Malay medical manuscripts, followed by cough only symptom (Table 3). Further studies are needed to verify the therapeutic activities of the combined materials listed: Which of the materials are the active component for the remedies? Which are merely adjuvants for the medicine?

Table 3: List of *materia medica* mentioned for coughs in the Malay Medical manuscripts. Numbers indicate the number of times the material is mentioned for the types of coughs.

Material	Types of coughs & cough-related symptoms				
	Wet cough	Dry cough	Cold-induced cough	Asthmatic coughs	Other physiological coughs
<b>Plants</b>					
<i>Adas manis</i>	-	-	-	1	-
<i>Asam gelugur</i>	1	-	-	-	-
<i>Asam susur</i>	1	-	-	-	-
<i>Balsan (minyak)</i>	-	-	-	1	-
<i>Barah batu</i>	-	-	-	1	-
<i>Baru minyak</i>	-	-	-	1	-
<i>Bawang (merah)</i>	-	-	-	5	2
<i>Bawang putih</i>	1	-	-	4	1
<i>Beka</i>	-	-	-	1	-
<i>Belimbing</i>	-	-	-	3	1
<i>Bertih</i>	1	-	-	-	-
<i>Birah hitam</i>	-	-	-	1	-
<i>Bonglai</i>	-	-	-	1	-
<i>Cabai</i>	-	-	-	4	-
<i>Cangkuk manis</i>	-	-	-	1	-
<i>Celaka</i>	-	-	-	2	-
<i>Cemekian</i>	-	-	-	1	-
<i>Cendana janggi</i>	2	-	-	-	1
<i>Cengkih</i>	1	-	-	2	1
<i>Ceraku</i>	-	-	-	1	-
<i>Cuka</i>	-	1	-	4	3
<i>Delima</i>	2	-	-	-	-
<i>Dewaraja</i>	1	-	-	-	-
<i>Duduk</i>	-	-	-	1	-
<i>Gandarukam</i>	2	-	2	1	1
<i>Gandarusa</i>	-	-	-	4	3
<i>Gandum</i>	-	2	1	1	-
<i>Halba</i>	2	2	1	2	1
<i>Halia</i>	2	-	-	6	4
<i>Hati kerbau</i>	2	-	-	-	-
<i>Hujung melukut</i>	-	-	-	3	-
<i>Inggū/hinggu</i>	-	-	-	3	2
<i>Jahar keling</i>	-	-	-	1	2
<i>Jarak</i>	-	-	-	1	-
<i>Jari ayam</i>	-	-	-	1	-
<i>Jemuju</i>	-	-	-	4	2
<i>Jintan hitam</i>	2	-	-	7	-
<i>Jintah putih</i>	-	-	-	-	2
<i>Kaduk</i>	-	-	-	1	-
<i>Kapur baru</i>	-	-	-	1	-
<i>Karawiya</i>	-	-	-	1	-
<i>Kayu manis</i>	-	-	-	1	2
<i>Kecubung</i>	-	-	-	1	2
<i>Kedekai</i>	-	-	-	3	2

<i>Keladi puyuh</i>	-	-	-	1	-
<i>Kelemoyang</i>	-	1	-	-	-
<i>Kenderi</i>	-	-	-	1	1
<i>Kermak</i>	-	-	-	1	1
<i>Kirai</i>	-	-	-	1	1
<i>Kijang kera</i>	-	-	-	1	-
<i>Kunyit</i>	-	-	-	5	1
<i>Lada</i>	2	-	-	14	4
<i>Lawang</i>	1	-	-	-	-
<i>Lenga (minyak)</i>	-	-	2	2	2
<i>Limau</i>	-	-	-	2	1
<i>Malai-malai</i>	-	-	-	2	1
<i>Marapusi (merpoi)</i>	2	-	-	-	-
<i>Maru</i>	-	-	-	1	-
<i>Mensirah</i>	-	-	-	1	-
<i>Mota</i>	-	-	-	1	-
<i>Mur</i>	-	-	2	1	1
<i>Mustaki</i>	2	-	2	2	1
<i>Nyiur hijau</i>	-	-	-	4	4
<i>Otak udang</i>	-	-	-	1	-
<i>Padi</i>	-	-	-	4	2
<i>Pala</i>	1	-	-	-	-
<i>Pedandang</i>	1	-	-	-	-
<i>Pelaga</i>	1	-	-	-	1
<i>Pelir pelanduk</i>	-	-	-	1	-
<i>Perenggam</i>	1	-	-	-	-
<i>Pinang</i>	-	-	-	3	3
<i>Pisang kelat</i>	-	-	-	2	1
<i>Raja boga</i>	1	-	-	-	-
<i>Rembega</i>	-	-	-	1	1
<i>Rengkinang</i>	-	-	-	1	-
<i>Ribu-ribu</i>	-	-	-	3	2
<i>Sandarus</i>	-	-	-	1	-
<i>Seganda</i>	1	-	-	-	-
<i>Sekati lima</i>	2	-	-	1	-
<i>Serai</i>	-	-	-	1	1
<i>Serapat</i>	-	-	-	-	1
<i>Sirih</i>	-	-	-	3	3
<i>Sudu-sudu</i>	-	-	-	2	1
<i>Tanjung</i>	-	-	-	1	-
<i>Tarum</i>	-	-	-	1	-
<i>Teberau</i>	-	-	-	1	-
<i>Tembaga suasa</i>	-	-	-	1	1
<i>Temu perang</i>	-	-	-	1	1
<i>Teras api-api</i>	-	-	-	1	-
<i>Terung</i>	-	-	-	3	1
<i>Urang-aring</i>	-	-	-	4	2
<i>Za'faran</i>	-	-	-	1	-



<i>Zaitun</i>	-	-	-	1	-
<b>Animal</b>					
<i>Kambing (tanduk)</i>	-	-	-	-	1
<i>Ketam</i>	-	-	-	1	-
<i>Lebah/kelulut (madu)</i>	2	-	1	7	6
<i>Lembu (susu)</i>	-	2	-	3	2
<i>Sapi (minyak)</i>	-	3	1	-	-
<b>Others</b>					
<i>Arang/harang</i>	-	-	-	1	-
<i>Gula/Sukkar</i>	-	1	1	-	-

## Discussion

### Analysis of Coughs and Cough-Related Symptoms in Malay Medical Manuscripts

The American College of Chest Physicians (CHEST) classified cough based on its duration: acute (lasting < 3 weeks); subacute (lasting between 3 and 8 weeks); and chronic (lasting > 8 weeks) (Irwin *et al.*, 2018). However, in the Malay medical manuscripts, coughs can be grouped into five categories. Associated modern terms that could match these coughs and cough-related symptoms are given in Table 4. Based on the modern terminologies, principles of management for coughs can be suggested.

Table 4: Malay terms and modern terminology for coughs and cough-related symptoms and their associated management are based on contemporary medicine.

Malay term	Modern terminology	Principles of management by contemporary medicine
<i>Batuk basah (balgham)</i>	<ul style="list-style-type: none"> <li>Productive cough</li> <li>Coughing with phlegm/mucus/sputum</li> </ul>	<ul style="list-style-type: none"> <li>Expectorants</li> <li>Mucolytic therapy</li> </ul>
<i>Batuk kering</i>	<ul style="list-style-type: none"> <li>Wet/chesty cough</li> <li>Dry cough</li> <li>Non-productive cough/ Cough without phlegm</li> <li>May be related to tuberculosis disease?</li> </ul>	<ul style="list-style-type: none"> <li>Treatment of underlying cause</li> <li>Antitussive agents</li> <li>Anti-tuberculosis drugs</li> </ul>
<i>Batuk sebab angin sejuk</i>	<ul style="list-style-type: none"> <li>Cold-induced cough</li> </ul>	<ul style="list-style-type: none"> <li>Antihistamine &amp; decongestant</li> <li>Treatment of the underlying cause</li> </ul>
<i>Lelah</i> <i>Esak</i> <i>Rabw</i> <i>Intisab ul-nafas</i>	<ul style="list-style-type: none"> <li>Shortness of breath</li> <li>Difficulty in breathing</li> <li>Dyspnoea</li> <li>Conditions such as tired, exhausted, fatigued</li> <li>Wheezing</li> <li>Asthma</li> </ul>	<ul style="list-style-type: none"> <li>Airway clearance therapy</li> <li>Antihistamine</li> <li>Anti-asthmatic medicine</li> </ul>
<i>Batuk</i>	<ul style="list-style-type: none"> <li>Other physiological coughs</li> <li>Post-coital cough</li> <li>Cough induced by heavy load lifting</li> </ul>	<ul style="list-style-type: none"> <li>Antihistamine &amp; decongestant</li> <li>Treatment of the underlying cause</li> </ul>

Whilst the first three types of coughs are well defined in the Malay manuscripts, which can be matched with the contemporary terminologies, *lelah* and *esak* have ambiguous definitions when one attempts to associate them with coughs. This is because the modern Malay dictionaries also define these terms as fatigue and sobbing, respectively.

According to the National Institute of Health Guidelines on Asthma (NIH Guidelines), asthma is defined as “a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role: in particular, mast cells, eosinophils, T lymphocytes, macrophages, neutrophils, and epithelial cells...” (Mims, 2015). According to Mims (2015), the four cardinal symptoms of asthma are wheezing, shortness of breath, coughing and chest tightness, which are consistent with the descriptions for *lelah* and *esak*. Hence both *lelah* and *esak* are grouped in the same category (Table 4). Moreover, in addition to the numerous terms to describe a particular cough, asthmatic-like cough also has the greatest number of formulations and ingredients than the other 4 types of coughs. This could suggest that since the late 19<sup>th</sup> century or even earlier than that, asthma is highly prevalent among the community in the Malay Archipelago. In fact, asthma is an ancient disease that has been recognised in the Eastern and Western countries, with numerous traditional prescriptions have been available to treat the causes and symptoms of asthma (Diamant et al., 2017; Cserháti, 2004; Song & Wong, 2017).

This study added a fifth category of coughs whereby the information on symptoms and aetiologies are lacking in the Malay medical manuscripts. At present, numerous aetiologies of coughs have been identified: from an anxiety disorder, allergies, genetic disease (e.g. cystic fibrosis), chronic obstructive pulmonary disease (e.g. emphysema and chronic bronchitis) to lung cancer. For unknown aetiology, researchers may explore traditional remedies for the cough only symptoms.

### Traditional Remedies

Based on the study of six Malay manuscripts, remedies for five types of coughs have been prescribed. Remedies preparations in combination with other plants or materials were highly preferred compared to the use of single material remedies. It is consistent with findings of past studies by Parasuraman et al. (2014), which expressed the benefits of polyherbal formulation over the individual extract. Polyherbal compounds exert greater therapeutic efficacy with fewer side effects. This could be due to the presence of multiple active constituents that work together and produce a potentiating effect. Based on the synergism concept, active compounds with similar pharmacological effect and targeted similar receptor or physiological system tend to initiate a synergistic effect (Benzie & Wachtel-Galor, 2011). Over-the-counter (OTC) cough medicine may consist of both single-entity and mixed substances with a protussive or an antitussive compound (Terrie, 2016). Excipients such as flavouring, bulk-fillers, sweeteners, and preservatives are added to aid palatability, especially for children. The same principle could be applied by the Ancient Malays when prescribing some of the traditional remedies. The use of many ingredients in one formulation may be necessary to stabilise the active compound or as adjuvants to aid stability, improve organoleptic characters or improve palatability.

Traditional remedies described in the Malay manuscripts can be given orally (decoction or made into capsule-sized to be swallowed), applied topically or taken by inhalation. This is similar to the practice of conventional medicine. Expectorant drugs are available in many forms, including syrups and tablets. Antitussive drugs can be in the forms of oral-based, topical-based (e.g. ointments) or inhalation (Terrie, 2016). In fact, the first-line mode of administration for asthma uses the inhalation technique (Price et al., 2013).

In modern medicine, therapeutic classes of cough medication are categorised as either cough suppressants or antitussive, expectorants and mucolytics. Expectorant and mucolytic are classified as protussive agents that involve the mobilisation of secretions and improve the effectiveness of cough. Expectorant agents stimulate the discharge or expulsion of mucus from the respiratory tract. Antitussive agent reduces the sensitivity of cough reflex, thus decreasing the frequency (Morice et al., 2002). Research can be done to identify the therapeutic roles of *materia medica* in the Malay medicine based on the suggested category of coughs.

*Halba* or fenugreek (*Trigonella foenum-graecum*) is mentioned in all five types of coughs in Malay manuscripts. Out of 112 medicinal plants studied, fenugreek was reported to have the highest use value and the most popular amongst the informants' consensus in a study on traditional herbal medicine in Ethiopia (Alemneh, 2021). The same study also claimed that fenugreek is used to treat cough. Fenugreek can act as an expectorant and its potential use as a therapy for COVID-19 has also been investigated (Dharmashekara et al., 2021). A review by Nagulapalli Venkata *et al.* (2017) explained the pharmaceutical activities of fenugreek as an anti-inflammatory agent. Basa'ar et al. (2017) reported low inhibitory effects of fenugreek for antituberculosis activity. Moreover, a study by Tripathy et al. (2020) using a molecular docking approach suggested anti-cough activity of the phytochemicals derived from fenugreek. This is despite mucilage compound of seeds was found to assist lung secretions and enhance asthmatic cough (Emtiazy et al., 2018). In a clinical trial, Emtiazy et al. (2018) suggested that fenugreek seeds are effective for mild asthma whereby the seed extract prepared in a 50% honey solution showed a promising result. Therefore, as a precautionary measure, the consumption of fenugreek should be avoided for persons with chronic asthma (Ouzir et al. 2016). The clinical observations have shown that fenugreek is potentially an emerging allergen, which exacerbated in individuals who are also allergic to chickpeas or peanut (Ouzir et al. 2016).

Honey is a popular ingredient in traditional medicine for cough, and honey-based coughing medicine can be purchased as OTC. In contrast to honey, *gandarukam* is less popular, despite both are prescribed in four out of five types of coughs in the Malay manuscripts. No information on the use of *gandarukam* in traditional medicine could be found in contemporary literatures. *Mustaki* (*Pistacia terebinthus*) have been traditionally used in relieving coughs in several cultures. In Greece, the resin of this plant is used as an expectorant (Bozorgi et al., 2011; Lardos et al., 2011), added in a solution as an air purifier (Mohagheghzadeh et al., 2010), and antiseptic for respiratory infections, anti-inflammatory, and to treat symptoms of asthma (Bozorgi et al., 2013). *Mustaki* fruits are also claimed to be antitussive (Bozorgi et al., 2013). It is also worth mentioning that fenugreek and *mustaki* are not local ingredients. The common use of these materials may suggest the easiness and accessibility of them to the local community then.

## Conclusion

This study offers an overview of data mining on coughs from six Malay medical manuscripts. Remedies for productive cough, dry cough, cold-induced cough and asthmatic cough are documented in six Malay medical manuscripts. The fifth category of coughs are those which do not belong to the four types mentioned earlier, and are referred to as "other physiological coughs". Fenugreek is prescribed for all five types of coughs in Malay medicine, despite it is not a local plant in the Malay Archipelago. Honey, *gandarukam* and *mustaki* are also prescribed for all coughs except dry cough. Future studies may want to identify primary therapeutic materials from the adjuvants and design experiments to evaluate the efficacy of traditional phytomedicine for coughs based on the principles of cough management. With proper recommendation, practice and guidelines from health practitioners, availability of local resources of the Malay traditional *materia medica* in treating coughs can curb cough and subsequently reduce its negative impacts to the society and economy.

## Acknowledgements

Our uttermost acknowledgement goes to the anonymous reviewers of this manuscript and Nurul Syahirah and Muhammad Arif for their support and ideas as teammates in deciphering the *jawi* text from the Malay manuscripts.

## References

Abdul Halim, N. S. (2020). *Data Mining on Yaws Treatment in Malay Medical Manuscripts with Special Reference to MSS3749*. International Islamic University Malaysia.

Alemneh, D. (2021). Ethnobotanical Study of Plants Used for Human Ailments in Yilmana Densa and Quarit Districts of West Gojjam Zone, Amhara Region, Ethiopia. *BioMed Research International*, 2021.

Attaway, A. H., Scheraga, R. G., Bhimraj, A., Biehl, M., & Hatipoğlu, U. (2021). Severe COVID-19 pneumonia: Pathogenesis and clinical management. *BMJ*, 372, n436.

Basa'ar, O., Fatema, S., Alrabie, A., Mohsin, M., & Farooqui, M. 2017. Supercritical carbon dioxide extraction of *Trigonella foenum graecum* Linn seeds: Determination of bioactive compounds and pharmacological analysis. *Asian Pacific Journal of Tropical Biomedicine*, 7(12), 1085-1091.

Benzie, I. F., & Wachtel-Galor, S. 2011. *Herbal medicine: Biomolecular and clinical aspects* (2nd ed.). CRC Press.

Bozorgi, M., Memariani, Z., Mobli, M., Salehi Surmaghi, M. H., Shams-Ardekani, M. R., Rahimi, R., ... Heinrich, M. (2011). Five *Pistacia* species (*P. vera*, *P. atlantica*, *P. terebinthus*, *P. khinjuk*, and *P. lentiscus*): a review of their traditional uses, phytochemistry, and pharmacology. *TheScientificWorldJournal*, 2, 219815. <https://doi.org/10.3389/fphar.2011.00032>

Capodice, J.L., Chubak, B.M. Traditional Chinese herbal medicine-potential therapeutic application for the treatment of COVID-19. *Chin Med* 16, 24 (2021). <https://doi.org/10.1186/s13020-020-00419-6>

De Blasio, F., Virchow, J. C., Polverino, M., Zanasi, A., Behrakis, P. K., Kiliç, G., ... Lanata, L. (2011). Cough management: a practical approach. *Cough*, 7(1), 7. <https://doi.org/10.1186/1745-9974-7-7>

Dharmashekara, C., Pradeep, S., Prasad, S. K., Jain, A. S., Syed, A., Prasad, K. S., Patil, S. S., Beelagi, M. S., Srinivasa, C., & Shivamallu, C. (2021). Virtual screening of potential phyto-candidates as therapeutic leads against SARS-CoV-2 infection. *Environmental Challenges*, 4, 100136. <https://doi.org/10.1016/j.envc.2021.100136>

Emtiazy, M., Oveidzadeh, L., Habibi, M., Molaeipour, L., Talei, D., jafari, Z., Parvin, M., & Kamalinejad, M. 2018. Investigating the effectiveness of the *Trigonella foenum-graecum* L. (fenugreek) seeds in mild asthma: A randomized controlled trial. *Allergy, Asthma and Clinical Immunology*, 14(1), 1–8.

Finley, C. R., Chan, D. S., Garrison, S., Korownyk, C., Kolber, M. R., Campbell, S., Eurich, D. T., Lindblad, A. J., Vandermeer, B., & Allan, G. M. (2018). What are the most common conditions in primary care? Systematic review. *Canadian family physician Medecin de famille canadien*, 64(11), 832–840.

Gimlette, J. D. (1939). *A Dictionary of Malayan Medicine* (H. W. Thomson, Ed.). London: Humphrey Milford, Oxford University Press.

Irwin, R. S., French, C. L., Chang, A. B., Altman, K. W. (2018). Classification of Cough as a Symptom in Adults and Management Algorithms: CHEST Guideline and Expert Panel Report. *Chest*, 153(1), 196–209. <https://doi.org/https://doi.org/10.1016/j.chest.2017.10.016>

Levy, M. L., Quanjer, P. H., Booker, R., Cooper, B. G., Holmes, S., Small, I. (2009). General Practice Airways Group. Diagnostic spirometry in primary care: Proposed standards for general practice compliant with American Thoracic Society and European Respiratory Society recommendations: a General Practice Airways Group (GPIAG)1 document, in association with the Association for Respiratory Technology & Physiology (ARTP)2 and Education for Health3 1 [www.gpiag.org](http://www.gpiag.org) 2 [www.artp.org](http://www.artp.org) 3 [www.educationforhealth.org.uk](http://www.educationforhealth.org.uk). *Prim Care Respir J*. 2009 Sep;18(3):130-47. doi: 10.4104/pcrj.2009.00054. PMID: 19684995; PMCID: PMC6619276.

Malaysian Ministry of Health. 2020. CPG- Respiratory. <https://www.moh.gov.my/index.php/pages/view/135>. Accessed date, 1 July 2021.

Mat Piah, H. (2006). *Kitab Tib Ilmu Perubatan Melayu*. Kuala Lumpur: Perpustakaan Negara Malaysia.

Mat Piah, H., & Baba, Z. (2014). *Kitab Tib MSS 2515 Perpustakaan Negara Malaysia: Kajian Teks dan Suntingan*. Bangi: UKM Press.

- Mims, J. W. (2015). Asthma: Definitions and pathophysiology. *International Forum of Allergy & Rhinology*, 5(S1), S2-S6.
- Mohagheghzadeh, A., Faridi, P., & Ghasemi, Y. (2010). Analysis of Mount Atlas mastic smoke: A potential food preservative. *Fitoterapia*, 81(6), 577-580.
- Mohd. Shafri, M. A. (2018). *Kitab Perubatan Melayu Tayyib al-Ihsan fi Tibb al-Insan*. Kajang: Akademi Jawi Malaysia.
- Mohd. Shafri, M. A. (2019). *Kitab Perubatan Melayu Sari Segala Ubat Tabib Diraja Kesultanan Pontianak*. Kajang: Akademi Jawi Malaysia.
- Mohd. Shafri, M. A., & Muhammad Yahya, H. (2017). *Kitab Perubatan Melayu Al-Rahmah fi al-Tibb wa al-Hikmah*. Kajang: Akademi Jawi Malaysia.
- Mohd Shafri, M. A. (2021). Treatments of Eye Diseases in Malay Medical Manuscript Ramuan Obat EAP153/9/4. *Journal of Al-Tamaddun*, 16(1), 27-45. Retrieved from <https://doi.org/10.22452/JAT.vol16no1.3>
- Morice, A., Widdicombe, J., Dicipinigitis, P., & Groenke, L. 2002. Understanding cough. *European Respiratory Journal*, 19(1), 6-7.
- Nagulapalli Venkata, K. C., Swaroop, A., Bagchi, D., & Bishayee, A. (2017). A small plant with big benefits: Fenugreek (*Trigonella foenum-graecum* Linn.) for disease prevention and health promotion. *Molecular Nutrition and Food Research*, 61(6), 1-26.
- Ouzir, M., El Bairi, K., & Amzazi, S. (2016). Toxicological properties of fenugreek (*Trigonella foenum graecum*). *Food and Chemical Toxicology*, 96, 145-154.
- Parasuraman, S., Thing, G., & Dhanaraj, S. 2014. Polyherbal formulation: Concept of ayurveda. *Pharmacognosy Reviews* 8(16), 73.
- Price, D., Bosnic-Anticevich, S., Briggs, A., Chrystyn, H., Rand, C., Scheuch, G., & Bousquet, J. 2013. Inhaler competence in asthma: Common errors, barriers to use and recommended solutions. *Respiratory Medicine*, 107(1), 37-46.
- Terrie, Y. C. (2016, November 21). *Proper use of OTC cough medications: Back to the basics*. Pharmacy Times <https://www.pharmacytimes.com/view/proper-use-of-otc-cough-medications-back-to-the-basics>
- Tripathy, B., Sahoo, E., Jha, S., & Bhattacharyay, D. 2020. *Trigonella foenum-graecum* derived phytochemicals against cough. *Journal of Pharmaceutical Research International* 32(7), 96-99.
- Raja Perdaus, R. N. (2020). *Data Mining on Respiratory Diseases or Symptoms in Malay Medical Manuscripts with Special Reference to MSS 2905 Petua Kitab Tib*. International Islamic University Malaysia.