

---

## Literacy Study: “WASH” as a Preventive for COVID 19 on Farmers in Agrarian Areas

Yarmaliza<sup>1</sup>, Teungku Nih Farisni<sup>2</sup>, Fitriani<sup>3</sup>, Veni Nella Syahputri<sup>4</sup>, Zakiyuddin<sup>5</sup>, Fitrah Reynaldi<sup>6</sup>

<sup>1,2,3,4,5,6</sup>Fakultas Kesehatan Masyarakat, Universitas Teuku Umar

Corresponding Author: Yarmaliza (Email: yarmaliza@utu.ac.id)

Contact Number: +62812 6944 744

**Submitted:** 1/7/2021 **Conference:** 17/10/2021 **Accepted:** 12/1/2022 **Published online:** 7/3/2022

**Abstract:** On March 11, 2020, the World Health Organization categorized Covid-19 as a pandemic, where its spread made WHO declare an emergency situation and classified it as a chronic pandemic (WHO, 2020). The Covid-19 pandemic has suppressed global economic growth and has had social and economic impacts, especially in the agricultural sector. The existence of restrictions on movement and distribution in the midst of society that aims to break the chain of spread of the Covid-19 virus which is vulnerable to human interaction has proven to have an impact on the agricultural sector. The International Labor Organization (ILO) states that the agricultural sector is one of the sectors that have a low risk of the Covid-19 pandemic compared to other industrial sectors, Personal hygiene and sanitation through WASH (Water, Sanitation and Hygiene) for farmers greatly determines their health status, especially in the midst of a pandemic like today. There are many literature studies regarding the COVID-19 outbreak, such as community behavior during a pandemic, causes, natural history of the disease, even to preventive and medical treatment. Since the end of 2019 until now (July 2021) there have been many writings or literature reviews that have been published both at the national and international levels, so this paper aims to conduct a review of literature studies related to clean living behavior through WASH as a preventive against COVID-19 in farmers.

**Keywords:** Water, Sanitation, Hygiene, Farmers, COVID 19

### Introduction:

The rapid spread of the COVID-19 pandemic has not only had a wide impact on the world of health, but other sectors have also been affected by the virus (Yarmaliza et al., 2020). The COVID-19 pandemic has caused disasters for the community, both in coastal and agrarian areas, resulting in the deaths of thousands of people around the world, including Indonesia. WHO reported as of 9 July 2020, 11,84,226 confirmed cases with 545,481 deaths worldwide (Case Fatality Rate/CFR 4.6%) (Haider et al., 2020). The COVID-19 situation at the global and national levels is also still at very high risk, both in agricultural areas and in coastal areas, on July 9, 2020, the Ministry of Health reported 70,736 confirmed cases of COVID-19 with 3,417 cases died (CFR 4.8% ), this case continued to increase as of September 1, 2020 with the number of confirmed COVID-19 as many as 177,571 people, meanwhile the Aceh Health Office also reported that as of September 1, 2020, there were 1648 confirmed cases of COVID-19 (Ministry of Health, 2020).

The environment is inseparable from the activities of human life. According to Law Number 32 of 2009 concerning Protection and Management of the Environment, the environment is a unitary space with all objects, power, circumstances, and living things, including humans and their behavior that affect nature itself and the welfare of humans and other living creatures. The ability of humans to change the quality of their environment depends on the socio-cultural level. People's behavior determines a lifestyle that creates an environment in accordance with what they want resulting in disease as well as in accordance with their behavior earlier. Environmental factors that affect a person's health status can come from the residential environment, social environment, work environment. Environmental quality affects people's health status. A person's health status is influenced by health service factors, personal hygiene behavior and environmental sanitation.

Personal hygiene is also an important factor in health maintenance efforts, so that we can always live healthy. How to maintain personal hygiene can be done such as hands must be washed before eating and after work, clipping nails short and clean so as not to injure the skin or become a source of infection, play and work using footwear. Environmental sanitation is an effort to control the factors of the human physical environment that can adversely affect health or health efforts to maintain and protect the environmental cleanliness of the subject, for example providing clean water, disposal of feces, food handling and work environment safety in order to avoid infection of various causes. disease, such as a virus.

Farmers whose daily lives are in the fields and gardens with low PHBS (Clean and Healthy Living Behavior) will have a greater chance of being infected with various kinds of infectious diseases, ranging from dermatitis to other infectious diseases (Yarmaliza et al., 2020). This condition occurs partly due to a lack of personal hygiene and sanitation, such as after farming they do not immediately shower or wash their hands with clean and running water and do not change clothes that are already sweaty, this makes one of the causes of the proliferation of bacteria that arise from sweat, thus triggering an infection of the skin. With these conditions, it will be an opportunity for farmers to be easily infected with COVID-19, so living in PHBS through "WASH" (Water, Sanitation and Hygiene) is very important as an effort to prevent the COVID-19 virus (WHO & UNICEF, 2020).

The provision of safe water and sanitation as well as a hygienic/clean environment is important in order to be able to protect human health in outbreaks of infectious diseases, such as the current COVID-19 outbreak (Haider et al., 2020). Farmers are professions that are often associated with water, sanitation and hygiene which will determine the health status of farmers. Ensuring the implementation of good and consistent WASH practices and waste management at the community, household, school, market, and health facilities levels will help prevent the transmission or transmission of the COVID-19 virus from one person to another. Paying attention to hand hygiene is very important in handling the Corona virus, cleaning hands with

soap and water or using alcohol-based cleaners must always be done, especially for farmers who have just completed their duties in the fields.

## **Methods**

This study uses a literature study method, namely a study whose research object is in the form of library works, either in the form of scientific journals, books, articles in the mass media, and statistical data. The literature will be used as a reference in this article related to water, sanitation and personal hygiene. This study aims to build and construct a stronger conception based on empirical studies that have been conducted.

## **Result and Discussion**

### **1. Water**

Water is very important for the agricultural sector because most agricultural activities use water. Clean water and sanitation is one of the classic problems that have not been solved in Indonesia. The sanitation achievement targets, both in the Millennium Development Goals (MDGs) which ended in 2015, as well as in the Sustainable Development Goals (SDGs) which are still ongoing until now, have not been achieved optimally. However, starting in early 2020, the Covid-19 pandemic that hit various countries in the world, including Indonesia, seemed to make all levels of society aware of the importance of good sanitation to prevent the spread of the virus. As stated by the World Health Organization (WHO), clean water, sanitation, and hygienic services are urgently needed to limit the spread of the Covid-19 virus and prevent the spread of disease outbreaks in the future. Indonesia's efforts to fight the spread of Covid-19 seem to have its own challenges, given the poor sanitation conditions in this country.

According to Kodoatie (2003: 35), clean water is water that is used daily for washing, bathing, cooking, and can be drunk after cooking. According to Suripin (2002: 13), what is meant by clean water is water that is safe (healthy) and good for drinking, colorless, odorless, with a fresh taste. Based on these two opinions, clean water consists of water that can be consumed (drinking water) and also water that can be used for other purposes in household activities. Clean water for drinking water needs to meet certain standards to be fit for consumption. Meanwhile, water for hygienic and sanitation purposes is water of a certain quality used for daily needs whose quality is different from drinking water (Permenkes RI No. 32 of 2017).

Farmers as managers of agricultural land must of course ensure the availability of water in their rice fields, so that their production process runs well. Water supply and control is an important factor in rice cultivation. Excess water is as dangerous as water shortage, and to overcome this problem, farmers usually have certain mechanisms in meeting their water needs with reference to time. Agricultural activity has a reciprocal relationship with water quality. Unwise agricultural activities can reduce the quality of the surrounding water and downstream areas. On the other hand, to get quality agricultural products that are safe for consumption, certain water quality is

---

required. Thus, the sustainability of the agricultural sector is highly dependent on the availability of water in terms of both quality and quantity.

The process of food production can cause various impacts on the surrounding natural environment. The impact of environmental degradation can be caused by, among others, the use of high doses of pesticides and fertilizers, inappropriate irrigation techniques, excessive mechanization or inappropriate land use. Environmental degradation that occurs, among others, is in the form of a decrease in environmental quality which includes soil, water and air, a decrease in the quality and quantity of food, and pollution of bodies and water sources. Environmental degradation due to the food production process can hamper the sustainability of agricultural activities.

Water quality is an important issue because it involves public health, especially farming communities and the environment. Defining water quality is rather difficult because it really depends on the purpose of water use and different public perceptions regarding the level of water quality that is considered harmful to human health and the environment. The decline in water quality has become a strategic issue in various parts of the world, including in Indonesia. The tendency to decrease water quality increases with the increasing development of industries that emit waste, the rapid growth of housing and the increase in the use of chemicals. Therefore, water pollution is more common in areas with high community activities, such as big cities, industrial areas, as well as agricultural and livestock areas (Gundy P, Gerba CP, 2019).

## **2. Sanitation**

According to WHO data in 2017, Indonesia has the third worst/inappropriate sanitation in the world, after India and China (Damashinta, 2018: 26). Even based on data from the United States Agency for International Development (USAID) and Indonesia Urban Water Sanitation and Hygiene (IUWASH), Indonesia is ranked last among ASEAN countries in terms of access to water and urban sanitation. With a total population of 137,400,000 people in urban areas, only 33% of the population served by sanitation through urban piped water in Indonesia (Badan Pusat Statistik, 2018 in Alaydrus, 2019). Meanwhile, there are still around 13% of people in urban areas who still practice open defecation (BABS). In terms of open defecation behavior, even Indonesia is in the second worst position in the world after India. This condition is certainly very worrying, because poor sanitation will have an impact on decreasing environmental quality and public health status. These two things ultimately have a negative impact on the quality of human resources and hinder Indonesia's growth potential.

Health is a human right and one of the elements of welfare that must be realized in accordance with the ideals of the Indonesian nation as referred to in the Preamble to the 1945 Constitution of the Republic of Indonesia (UUD 1945). As stated earlier, the Covid-19 pandemic seems to be a momentum, where sanitation is an important thing in efforts to handle the pandemic. Good

---

sanitation supports efforts to improve public health, as well as environmental quality and reduces the risk of increasing the risk of the spread of the Coronavirus outbreak which is currently rampant. Thus, the challenges of sanitation development in the pandemic era are certainly even greater. Empirical practices in the field related to the provision of sanitation for the community need to be studied further to provide an illustration of the extent to which the success rate of sanitation development has been carried out.

Yu ITS, Li Y, Wong TW, Tam W, Chan A, (2014) stated that sanitation is surveillance efforts aimed at environmental factors that can be a link in the chain of disease transmission. Meanwhile, according to WHO, sanitation is an effort to monitor several physical environmental factors that affect humans, especially those that affect physical development, health and survival. According to (Safriyanti et al., 2016) sanitation itself is a deliberate behavior in the culture of clean living with the intention of preventing humans from coming into direct contact with dirt and other hazardous waste materials in the hope that this effort will maintain and improve human health. Another opinion also said that the meaning of sanitation is a condition related to public health, especially in the provision of clean drinking water as well as adequate waste disposal.

Sanitation can help prevent disease by controlling physical environmental factors associated with the chain of disease transmission. In this case, sanitation is associated with environmental sanitation. In other words, this sanitation is a deliberate human behavior in cultivating clean and healthy living habits to prevent humans from being directly contaminated with dirty and dangerous materials in the hope of maintaining and improving human health levels. Access to sanitation and clean water is important in the effort to produce superior human resources. The absence of proper sanitation and clean water in sufficient quantities is the beginning of the emergence of various health problems in the community, such as: stunting, infant and maternal mortality, transmission of various viruses, and other diseases (World Health Organization, 2018).

### **3. Hygiene**

Paying attention to hand hygiene is very important in handling the Corona virus. Cleaning hands with soap and water or using alcohol-based cleansers should always be done according to the guidelines known as “Hand Washing at 5 Critical Times”. If your hands don't look dirty, the recommended method is to rub your hands with an alcohol-based sanitizer for 20-30 seconds with the right technique (Yarmaliza et al., 2019). If the hands are visibly dirty, then they should be washed with soap and water for 40-60 seconds with the correct technique. This hand hygiene must always be carried out at 5 critical times, including before and after using personal protective equipment (PPE); when changing gloves, after making contact with the patient; both confirmed and suspected COVID-19; after contact with respiratory secretions; before eating; and after using the toilet (Utami, 2015).

If an alcohol-based sanitizer is not available, you can use chlorinated water (0.05%) for hand washing as an option. But this is not ideal because it can cause dermatitis which can increase the risk of infection and asthma due to the chlorine content which may be inappropriate. However, if

---

other options are not available then chlorinated water can be an option for hand washing (Penders et al., 2014).

Personal hygiene is an action to maintain cleanliness and health in a person in preventing disease in themselves and others, both physically and psychologically. Personal hygiene includes skin hygiene, hair hygiene, dental hygiene, eye hygiene, ear hygiene, and hand, foot, and nail hygiene (Yarmaliza, 2018). Skin hygiene is the main factor that can cause skin diseases. One of Hyegene's personal actions that can be done is to wash hands and feet after doing work (Alex et al., 2018). Hands are the part of the body that is most often exposed to chemicals so it is very easy to get irritated. Good hand washing habits will help clean dirt and chemicals that stick to the skin after contact with the agent (Rahman et al., 2015)

So it is very important to provide health education to the community, where health education affects a person's knowledge and attitudes. In addition, a person's habits when bathing and washing hands and Personal Hygiene Analysis with Dermatitis Disease in Farmers (Single-dose, 2014). Foot hygiene really needs to be considered because these body parts are the body parts that are in direct contact with potential materials, while poor hand and foot washing habits can put you at risk of transmitting disease viruses, such as COVID 19.

Personal hygiene is self-care that is carried out to maintain health both physically and psychologically. Personal hygiene is an activity or act of cleaning all parts of the body that aims to maintain cleanliness and one's health. Personal Hygiene observed in this study were the procedures for mixing pesticides, washing hands, changing clothes after spraying, cleaning after spraying, not eating and drinking immediately after spraying, cleaning spraying equipment away from water and food sources, and burying the remnants of spraying.

### **Conclusion:**

Good WASH practices such as washing hands with running water and soap must be strictly carried out continuously because they provide important benefits for preventing the transmission of COVID-19 and preventing the transmission of other infectious diseases in general.

### **References:**

- Alex, A. A., Longinus, N. K., Olatunde, A. M., & Chinedu, N. V. (2018). Pesticides related knowledge, attitude and safety practices among small-scale vegetable farmers in lagoon wetlands, Lagos, Nigeria. *Journal of Agriculture and Environment for International Development*, 112(1), 81–99. <https://doi.org/10.12895/jaeid.20181.697>
- Gundy P, Gerba CP, P. I. (2019). Survival of coronaviruses in water and wastewater. *Environmental Health Insights*.
- Haider, N., Yavlinsky, A., Simons, D., Osman, A. Y., Ntoumi, F., Zumla, A., & Kock, R. (2020). *Passengers' destinations from China: low risk of Novel Coronavirus (2019-nCoV) transmission into Africa and South America*. 363(February).

- Kementerian Kesehatan, R. (2020). *Situasi Terkini Perkembangan Coronavirus Disease (COVID-19)*.
- Penders, J., Gerhold, K., Thijs, C., Zimmermann, K., Wahn, U., Lau, S., & Hamelmann, E. (2014). *New insights into the hygiene hypothesis in allergic diseases. February 2015*, 37–41. <https://doi.org/10.4161/gmic.27905>
- Rahman, A., Sultana, A., Rahman, K., Taher, S., & Bilgrami, A. (2015). *Prevalence of occupational contact dermatitis, knowledge, and adaptation of preventive measures by chemical industries workers of Pune: An observational study*. 4(1), 27–33. <https://doi.org/10.5455/jeos.20141106012039>
- Safriyanti, Lestari, H., & Ibrahim, K. (2016). *Hubungan Personal Hygiene, Lama Kontak Dan Riwayat Penyakit Kulit Dengan Kejadian Dermatitis Kontak Pada Petani Rumput Laut Di Desa Akuni Kecamatan Tinanggea Kabupaten Konawe Selatan Tahun 2016*. 1–10.
- Single-dose, G. R. (2014). *Occupational contact dermatitis among construction workers: Results of a pilot study*. 80(2). <https://doi.org/10.4103/0378-6323.129401>
- Utami, M. (2015). Analisis Hubungan Prilaku Petani terhadap Penyakit Menular. *Kesehatan*.
- WHO, & UNICEF. (2020). *Air, Sanitasi, Higiene, dan Pengelolaan Limbah yang Tepat Dalam Penanganan Wabah COVID-19*.
- World Health Organization; (2018). *Guidelines on sanitation and health*. Geneva:
- Yarmaliza. (2018). The effects of improper household waste management by mothers on the genesis of diarrhea in toddlers. *Journal of International Dental and Medical Research*, 11(3).
- Yarmaliza, Y., Farisni, T. N., Fitriani, F., Syahputri, V. N., Zakiyuddin, Z., & Reynaldi, F. (2019). Epidemiology Of Dermatitis In Farmers. *Berkala Epidemiologi*, 7, 17–24. <https://doi.org/10.20473/jbe.v7i12018>.
- Yarmaliza, Y., Farisni, T. N., Fitriani, F., Zakiyuddin, Z., Reynaldi, F., Safrizal, S., & Nursia, L. E. (2020). Literature Review of Epidemiological Phenomena: Corona Virus Disease Pandemic 2019. *European Journal of Medical and Health Sciences*, 2(3), 1–6.
- Yu ITS, Li Y, Wong TW, Tam W, Chan A, L. J. (2014). Evidence of airborne transmission of the severe acute respiratory syndrome virus. *N Engl J Med.*, 17(1731).