

## INFORMATION SYSTEM OF SUPERIOR PLANT VARIETIES

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**Abstrak.** The Food Crops Research and Development Center and research institutions are tasked with producing superior plant variety technology through research within the scope of the Agricultural Research and Development Agency. The results of the technological research carried out will be promoted and disseminated to the user community which includes agricultural extension workers, academics, researchers, agribusiness entrepreneurs, policy makers and other parties who need the information. The most effective way to distribute technological information is to create a website-based system so that it can be easily updated and distributed.

**Keywords:** superior varieties, research and development center, website, system

### I. INTRODUCTION

Information systems are ways that are organized for collect, enter, and process and store data, and organized ways to store, manage, control, and report information in such a way that an organization can achieve its stated goals. (Krisnaji, 2015). Technology produced through research by the Center for Food Crops Research and research institutions within the scope of the Agricultural Research and Development Agency is promoted and disseminated to the user community which includes agricultural extension workers, academics, researchers, agribusiness entrepreneurs, policy makers, and other parties and disseminated through various media, including publications research results (Puslitbangtan, 2015). Ahmad (2015) said that information technology is very influential in various aspects of human life, with information technology, work can be done easily and knowledge of various things can be accessed quickly. With this technology, it will make it easier for the public to access information easily and efficiently. This research will create a web-based superior plant variety information system with the aim of making it efficient and facilitating the dissemination of information that has been generated from research at the Center for Food Crops Research and Development. High-yielding varieties are breeding lines that have one or more special advantages such as high yield potential, resistance to pests, resistance to disease, tolerance to environmental stress, good product quality, funds or other characteristics and are released by the government (Puslitbangtan, 2016).

Pregnancy is defined as fertilization or union of spermatozoa and ova and followed by nidation or implantation. When calculated from the moment of fertilization to the birth of the baby, a normal pregnancy will take place within 40 weeks or 10 months or 9 months according to the international calendar. Pregnancy is divided

into 3 trimesters, where the first trimester lasts 12 weeks, the second 15 weeks (weeks 13 to 27) and the third trimester 13 weeks, weeks 28 to 40 (Sarwono [1]). In pregnancy, physiological changes usually occur, including in the gastrointestinal tract. Early pregnancy there is a feeling (nause) is a symptom of vomiting (emesis), usually occurs in the morning known as morning sickness. This is influenced by estrogen hormones and increased HCG which results in nausea-vomiting, accompanied by intestinal peristaltic changes with symptoms of frequent bloating, constipation, and more frequent hunger. In certain pathological conditions can become excessive nausea, vomiting, which is more than 10 times per day called hyperemesis gravidarum (Alyamaniyah [2]).

In the book Marmi [3] according to Fikosom et al, between 0.3-3.2% of all pregnancies in the world experience hyperemesis gravidarum. Hyperemesis gravidarum occurs worldwide, in some developed countries such as in Sweden by 0.3%, in China by 10.8%, California 0.5%, Canada 0.8%, 10.8% in Norway and in America 0.5-2% while in Indonesia the incidence occurs 1-3% of the total number of pregnancies. As for West Java itself, it reached 13% [4]. According to the health science journal, 7 cases of emesis in Indonesia in 2015 out of 2,203 pregnancies, there were 543 pregnant women who experienced emesis gravidarum [5]. Based on the Indonesian Health Demographic Survey (IDHS) in 2016, pregnant women are estimated at 228/100,000 women, who experience Hyperemesis Gravidarum by 26%. In 2017 the number of pregnant women was estimated at 359/100,000 women, and those with Hyperemesis Gravidarum were estimated at 32%. While in 2018 the number of pregnant women is estimated at 375/100,000 women, and those who experience Hyperemesis Gravidarum in pregnancy are estimated at 35% [6].

In a book written by Walyani [7] stated that the number of MMRs in West Java reached 780 people throughout 2016 and there were 32 pregnant women died (consisting of 3 hemorrhages, 2 hypertension in pregnancy, 1 infection, 7 circulatory system disorders, and 19 others. One of them is hyperemesis gravidarum). West Java is the highest province with the incidence of hyperemesis gravidarum in Indonesia around 13% of the total number of pregnant women [8].

Based on the Puskesmas Recording and Reporting System (SP3) said that in 2016 as many as 58 consisted of 22 deaths of pregnant women, 15 deaths of silent maternity mothers and 21 postpartum maternal deaths. (Bogor District Health Office, 2016) The cause of hyperemesis in West Java Province is 51.6%. Women with anemia have hyperemesis gravidarum. Argues that there are 22 pregnant women experiencing hyperemesis gravidarum from 30 people who experience mild anxiety (73.3%). Emesis gravidarum under normal circumstances does not cause negative effects, it's just that emesis gravidarum continues to hyperemesis gravidarum will bring the risk of disruption in pregnancy, such as dehydration, patients can experience fetal growth and development inhibitory shock, electrolyte balance disorders, carbohydrate reserves in the body will run out, roekan in the membranes of the esophagus tissue and stomach can occur if vomiting too often and has a risk of giving birth to a baby with Low birth weight, and Apgar score less than 7 (Manuaba, [9]).

The use of therapy can help reduce symptoms such as the use of aroma therapy, acupuncture / acupressure therapy in the wrist area, consumption of traditional herbs, administration of vitamin B6 500mg, and homeopathic therapy. Nausea vomiting will decrease if the mother's body can adapt to changes that occur due to pregnancy. Ginger is one type of spice plant in Indonesia, this is known since the Dutch colonial era ginger is sought after because it has advantages in terms of, health freshness and as a spice in cooking [10]. According to a review published by the journal *Obstetrics and gynecology*, ginger can help pregnant women overcome morning sickness without causing harmful side effects to the fetus in the womb. Of six studies that examined the effect of ginger in reducing nausea and vomiting in pregnant women, it was found that ginger is better than placebo or inactive drugs such as B6 which have shown a function in reducing nausea vomiting in pregnancy according to Dr. Pransesca Borelli from the University of Naples frederico, Italy [11]

Complementary therapy is a way that pregnant women can use to overcome discomfort both physical and mental discomfort. In research [12] stated that one of the government's programs in an effort to increase the knowledge of pregnant women in order to be able to recognize and overcome complaints during their pregnancy is the Pregnant Women Class Program. The pregnant women class is a means to learn together about health for pregnant women, in the form of face-to-face in groups that aim to improve the knowledge and skills of mothers regarding pregnancy, childbirth, postpartum, postpartum birth control, prevention of

complications, newborn care and physical activity or gymnastics for pregnant women.

Based on the background above, it can be seen that the incidence of hyperemesis gravidarum is very high, so researchers are interested in conducting experimental research on complementary obstetric care "The effect of giving ginger wedang and hypnoemesis on nausea vomiting in pregnant women trimester 1 and 2 at Rw 05 Kp. Cijulang, Cisarua, Bogor 2020". So that nausea vomiting pregnant women can be overcome so that it is not sustainable to hyperemesis gravidarum.

## II. RESEARCH METHODS

This research design uses an experimental research design, which is carried out to determine the cause and effect between research variables, quantitative experiments are the core method of the research model that contains a quantitative approach. This study is designed "One shot case study", namely with the design there is a group given treatment / treatment and then observed the results. (before the treatment was assessed the intensity of nausea vomiting and after the treatment was reassessed the intensity of nausea vomiting using the PUQE Scoring system) [13]. Statistical test using Wilcoxon Test. The research was conducted at Rw. 05 Kp. Cijulang in 2020. The population in this study was pregnant women who experienced nausea vomiting in the 1st trimester of pregnancy (0 to 12 weeks) and 2 (12 to 28 weeks) in Kp. Cijulang Rw/05 in 2020. This study uses Purposive sampling technique, which is a sampling drawing technique that is carried out based on criteria that have been determined against members of the population based on the purpose or formula of the research problem. The Independent variables in this study were the administration of ginger wedang and hypnoemesis and the confounding variables in this study were Age, Education, Age of Pregnancy, gravida. And the dependent variable is nausea, vomiting, pregnant women trimester I and II. Data collection techniques in this study were using questionnaires and observations. This research procedure is carried out by conducting the preparation stage, implementation stage, data processing and evaluation stage. Univariate statistical method analysis aims to explain or describe the character of each research variable. Bivariate which aims to prove the hypothesis in order to determine the relationship between the independent variable and the dependent variable.

## III. RESULTS AND DISCUSSION

From the results of research that has been conducted from August 5 -September 10, 2020 " The effect of ginger wedang and hypnoemesis on nausea vomiting pregnant women Trimester 1 and 2 in RW 05, Cijulang, Bogor " with a sample of 21 people. The results that will be obtained will be presented in the number of samples below.

Value	21	100
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Table 1. Frequency Distribution of respondents by Age, Education, Gestational Age, gravida

No	Characteristics	Quantity n=21	Presentation (%)
1.	Age (Years)		
	<20>35	15	71,4
	20-35	6	28,6
2.	Education		
	Basic education (elementary & junior high)	13	61,9
	Secondary Education (SMA)	8	38,1
3.	Gestational Age		
	First Trimester (0-12 weeks)	16	76,2
	Second Trimester (12-28 weeks)	5	23,8
4.	Pregnant		
	Primigravida	14	66,7
	Multigravida	7	33,3

Based on table 1, it can be known from 21 respondents, aged (20-35 years) as many as 15 people (71.4%) and ages (<20 and >35) as many as 6 people (14.3%). Based on education, the group of basic education (elementary & junior high) as many as 13 people (61.9%) and secondary education as many as 8 people (14.3%). The group of pregnant women based on gestational age of Trimester 1 (0-12 weeks) as many as 16 people (76.2%) and pregnant women in Trimester 2 (12-28 weeks) as many as 5 people (23.8%). Based on primigravida gravida as many as 14 people (66.7%) and the lowest is the multigravida group as many as 7 people (33.3%). This is stating that most respondents in this study were in healthy reproductive age (20-35 years) who experienced nausea and vomiting. A person's age can affect nausea and vomiting, the older a person is, the less often he experiences nausea vomiting because age makes a person more engaged in overcoming nausea vomiting.

This is also in line with the research [14] which states that education can influence a person including behavior and lifestyle in motivating to be ready to participate in health changes. So from this study there is mostly an influence of nausea vomiting pregnant women on the level of education. This is in line with suryaningrum research (2019) that 1st trimester pregnant women experience emesis gravidarum. Nausea vomiting during pregnancy is usually caused by changes in the endocrine system that occur during pregnancy mainly caused by high fluctuations in HCG (Human Chorionoc Ginadotrophin) levels

Table 2. Frequency distribution before giving ginger wedang (empirrit ginger) and hypnoemesis on the frequency of nausea vomiting of pregnant women in Kp. Cijulang Rw/05 of 2020

Score Nausea Vomiting	F	%
Mild nausea	9	42,9
Severe nausea	12	57,1

Based on the table above, it can be seen that the number of pregnant women who experience severe nausea vomiting as many as 12 people (57.1%) and who experience mild nausea vomiting as many as 9 people (42.9%).

Based on the calculation results using the Wilcoxon signed ranks test, 18 experienced positive ranks or who experienced influence, there were 3 people who experienced ties or no influence and none of them experienced negative ranks or conditions became less good before giving ginger wedang. Based on the table above, it can be seen that the p value with Wilcoxon Test Analysis, obtained a significant value of 0.00 smaller than the significant rate of 5% (Pvalue = 0.00<0.005), it can be stated that there is a relationship between the effect of giving ginger wedang to nausea vomiting pregnant women. The results of research entitled "The effectiveness of ginger steeping on the Frequency of Emesis Gravidarum Trimester I in the working area of the Lubuk Sanai Health Center, Mukomuko Regency. Shows the average frequency of emesis in pregnant women before being given ginger steeping as much as 9.36 times / day and decreases to 4.86 times / day after being given ginger steeping. There is a difference in the average frequency of emesis before and after the ginger steeping intervention with a mean difference of 4.50 with a value of Z = -4.123 and a p value = 0.000, meaning that ginger steeping is effective in reducing the frequency of emesis in pregnant women in the first trimester. Based on research by the frequency of nausea vomiting in the intervention group before the action averaged a score of 13.08, while after the action got an average score of 7.56. The results of the Paired Samples T test (normally distributed data) get a p value of 0.000 which shows that giving ginger drink is effective against the frequency of emesis gravidarum in first trimester pregnant women at the Nalumsari Jepara Health Center. Empirrit ginger (*Zingiber officinale* Rosc) has been widely used to overcome various variations of medical complaints in the form of nausea and vomiting. The antiemetic effect on ginger is attributed to the combined activity of zingerones and shogaols contained in empiric ginger. Research on the effectiveness of ginger extract concluded that ginger extract can be used to overcome emesis gravidarum. Review and evaluation with evidence-based studies also concluded that ginger can be used to treat nausea and vomiting in pregnancy.

Based on the calculation results using the Wilcoxon signed ranks test, 14 experienced positive ranks or who experienced influence, there were 7 people who experienced ties or or conditions became less before giving hypnoemesis Based on the table above, it can be seen that the p value with Wilcoxon Test Analysis, obtained a significant value of 0.00 smaller than the significant rate of 5% (Pvalue = 0.00<0.005) then it can be stated that the effect between giving Hypnoemesis to nausea vomiting pregnant women. This is in line with research which states that the results of this study show that there is a significant relationship between hypnotherapy and emesis gravidarum in the Sumiariani clinic which is known from the p value of 0.00 smaller than 0.05.

#### IV. CONCLUSION

Based on the results of research conducted from August 5 to September 10, 2020 at Rw 05, Kp Cijulang, Cisarua, Bogor. The results showed that there was a relationship between the effect of giving ginger wedang (empirrit ginger) and Hypnoemesis on the frequency of nausea vomiting pregnant women in the first and second trimesters. Can increase knowledge and as information material about the influence of ginger wedang and hypnoemesis to reduce the frequency of nausea vomiting in pregnant women, especially in the 1st and 2nd trimesters.

- [1] Prawirohardjo, Sarwono. *Ilmu Kebidanan*. Jakarta : Pt Bina Pustaka. 2016.
- [2] Alyamaniyah, Umihasanah. *Efektivitas Pemberian Wedang Jahe Terhadap Penurunan Emesis Gravidarum*. Academia. Jakarta 2014.
- [3] Marmi. *Asuhan Kebidanan Pada Masa Antenatal*. Yogyakarta : Pustaka Pelajar. 2017.
- [4] Pitriani, Pipit. *Pengaruh Hipnoterapi Terhadap Mual Muntah Ibu Hamil Trimester 1 Di Wilayah Kerja Puskesmas Mangkubumi Kota Tasikmalaya Tahun 2019*. Bandung. Puserdemika. 2019.
- [5] Maternity, Dainty. *Asuhan Kebidanan Kehamilan. Tangerang* :Binarupa Aksara Publisher. 2016
- [6] Kaban, Trivena Anasthasiabr. *Efektivitas Hipnoterapi Dan Pemberian Tablet B6 Terhadap Intensitas Mual Muntah Pada Emesis Gravidarum Wilayah Kerja Puskesmas Namu Ukur Tahun 2018. Fasilitas Kesehatan Dasar Dan Rujukan* . Jakarta. 2018.
- [7] Walyani, Elisabeth Siwi. *Asuhan Kebidanan Kehamilan* Yogyakarta: Pustaka Baru. 2015
- [8] Setani, Benny D. *Gerara Pandemi*. Semarang :Ebool@Unika.Ac.Id. 2020.
- [9] Manuaba, Ida Ayu Chandranita. *Ilmu Kebidanan, Penyakit Kandungan Dan Kb*, Jakarta :Egc. 2016.
- [10] Trubus, Redaksi, *Khasiat Jahe*. Depok :Trubus Swadaya. 2019.
- [11] Indrayani, Iluth Meta. *Efektivitas Pemberian Wedang Jahe Terhadap Mual Muntah Ibu Hamil Trimester 1 Di Kabupaten Bengkulu Utara Tahun 2017*. *Ejurnal.Poltekkesjakarta*. 29. 26. 2017.
- [12] Ningsih, Dewi Aprilia, *Efektivitas Pemberian Seduhan Jahe Terhadap Frekuensi Emesis Gravidarum Trimester 1*. *Stikesyahoedsmsg*. 2020.
- [13] Masturoh, Imas Dan Nauri Anggita T. *Metodologi Penelitian Kesehatan*. Jakarta Kemnkes Ri. 2018.
- [14] Wulandari, Dyah Ayu. *Minuman Jahe Hangat Untuk Mengurangi Emesis Gravidarum Pada Ibu Hamil Di Puskesmas Nalumsari Jepara*. JpR publisher. 2019.