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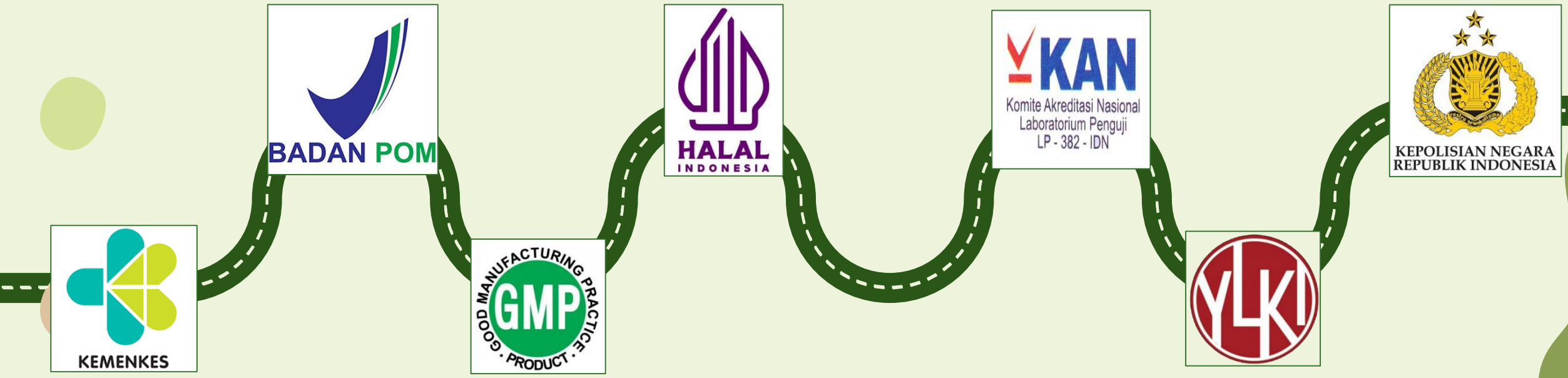
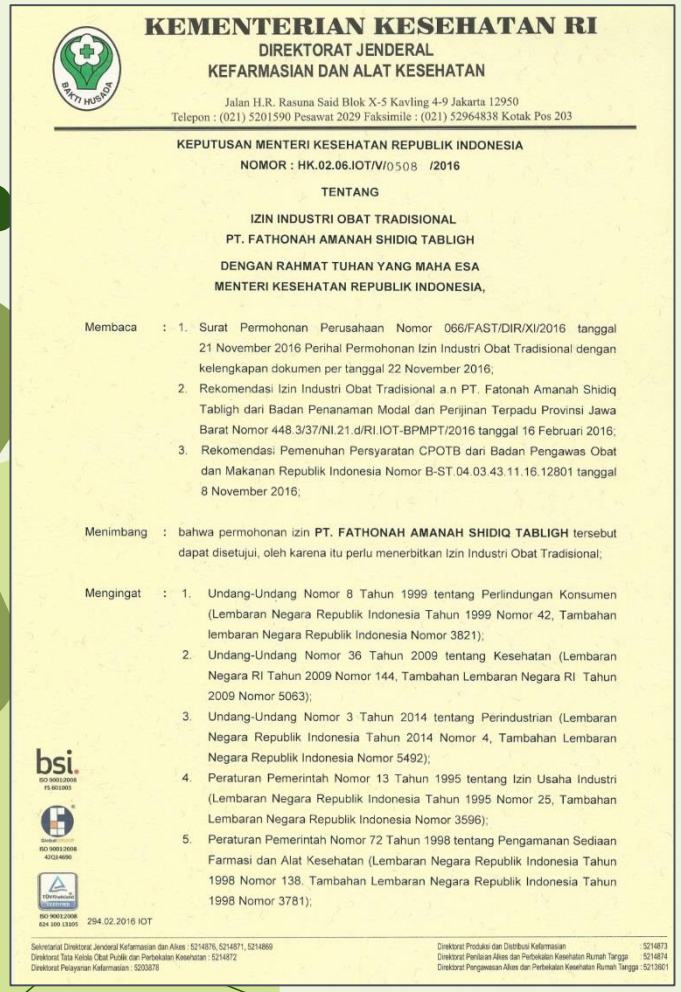


LEGALITAS PT. FAST



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KEFARMASIAN DAN ALAT KESEHATAN

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Telepon : (021) 5201590 Pesawat 2029 Faksimile : (021) 52964838 Kotak Pos 203

KEPUTUSAN MENTERI KESEHATAN REPUBLIK INDONESIA
NOMOR : HK.02.06.IOT/V/0508 /2016

TENTANG

IZIN INDUSTRI OBAT TRADISIONAL
PT. FATHONAH AMANAH SHIDIQ TABLIGH

DENGAN RAHMAT TUHAN YANG MAHA ESA
MENTERI KESEHATAN REPUBLIK INDONESIA,

Membaca :
1. Surat Permohonan Perusahaan Nomor 066/FAST/DIR/XI/2016 tanggal 21 November 2016 Perihal Permohonan Izin Industri Obat Tradisional dengan kelengkapan dokumen per tanggal 22 November 2016;
2. Rekomendasi Izin Industri Obat Tradisional a.n PT. Fatonah Amanah Shidiq Tabligh dari Badan Penanaman Modal dan Perijinan Terpadu Provinsi Jawa Barat Nomor 448.3/37/NI.21.d/RI.IOT-BPMPT/2016 tanggal 16 Februari 2016;
3. Rekomendasi Pemenuhan Persyaratan CPOTB dari Badan Pengawas Obat dan Makanan Republik Indonesia Nomor B-ST.04.03.43.11.16.12801 tanggal 8 November 2016;

Menimbang : bahwa permohonan izin **PT. FATHONAH AMANAH SHIDIQ TABLIGH** tersebut dapat disetujui, oleh karena itu perlu menerbitkan Izin Industri Obat Tradisional;

Mengingat :
1. Undang-Undang Nomor 8 Tahun 1999 tentang Perlindungan Konsumen (Lembaran Negara Republik Indonesia Tahun 1999 Nomor 42, Tambahan lembaran Negara Republik Indonesia Nomor 3821);
2. Undang-Undang Nomor 36 Tahun 2009 tentang Kesehatan (Lembaran Negara RI Tahun 2009 Nomor 144, Tambahan Lembaran Negara RI Tahun 2009 Nomor 5063);
3. Undang-Undang Nomor 3 Tahun 2014 tentang Perindustrian (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 4, Tambahan Lembaran Negara Republik Indonesia Nomor 5492);
4. Peraturan Pemerintah Nomor 13 Tahun 1995 tentang Izin Usaha Industri (Lembaran Negara Republik Indonesia Tahun 1995 Nomor 25, Tambahan Lembaran Negara Republik Indonesia Nomor 3596);
5. Peraturan Pemerintah Nomor 72 Tahun 1998 tentang Pengamanan Sediaan Farmasi dan Alat Kesehatan (Lembaran Negara Republik Indonesia Tahun 1998 Nomor 138. Tambahan Lembaran Negara Republik Indonesia Tahun 1998 Nomor 3781);

294.02.2016 IOT

Sekretariat Direktorat Jenderal Kefarmasian dan Alkes : 5214876, 5214871, 5214869
Direktorat Tata Kelola Obat Publik dan Perbekalan Kesehatan : 5214872
Direktorat Pelayanan Kefarmasian : 5203878
Direktorat Produksi dan Distribusi Kefarmasian : 5214873
Direktorat Penilaian Alkes dan Perbekalan Kesehatan Rumah Tangga : 5214874
Direktorat Pengawasan Alkes dan Perbekalan Kesehatan Rumah Tangga : 5213601

Surat Izin
Industri Obat Tradisional

بسم الله الرحمن الرحيم

مجلس العلماء الاندونيسي

MAJELIS ULAMA INDONESIA (MUI)
PROVINSI JAWA BARAT

KEPUTUSAN PENETAPAN
HALAL PRODUK

No : LPPOM-01131289330223

Majelis Ulama Indonesia (MUI) Provinsi Jawa Barat, setelah melakukan pengujian dan pembahasan, berdasarkan pemeriksaan yang telah dilakukan oleh Lembaga Pemeriksa Halal (LPH) LPPOM MUI JAWA BARAT dan Keputusan Komisi Fatwa MUI Provinsi Jawa Barat tanggal 08 FEBRUARI 2023 menetapkan bahwa produk yang disebutkan namanya di bawah ini adalah HALAL menurut Syari'at Islam.

Nama Perusahaan	: PT FATHONAH AMANAH SHIDIQ TABLIGH
Alamat Perusahaan	: KP. PEDURENAN, JL. BENGKEL NO.40 RT.002 RW.002 CISALAK PASAR, CIMANGGIS, KOTA DEPOK, JAWA BARAT, INDONESIA.
Nama Fasilitas	: TERLAMPIR
Alamat Fasilitas	: TERLAMPIR
Nama Produk	: TERLAMPIR
Dikeluarkan di Bandung pada	: 08 FEBRUARI 2023
Berlaku sampai dengan	: 07 FEBRUARI 2027

selama bahan-bahan, proses dan Sistem Jaminan Halal yang diterapkan sesuai dengan keputusan Komisi Fatwa MUI Provinsi Jawa Barat.

Ketua Umum
Prof. Dr. KH. Rachmat Syafe'i, Lc., MA

Sekretaris Umum
Drs. HM. Rafani Achyar, M.Si

Alamat / Address : Jl. LLRE. Martadinata No. 105 Phone / Fax. (022) 7272864, (022) 7234148 Bandung - Indonesia

Sertifikat Halal
Produk

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Certificate

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apt, Fadhlina Fajrin, S.Farm
PT. FAST (Fathonah Amanah Shidiq Tabligh)

Sebagai Peserta Webinar:
SERTIFIKASI PENYELIA HALAL DAN AUDITOR HALAL SEBAGAI UPAYA JAMINAN PRODUK HALAL
diselenggarakan secara online pada tanggal 7 Agustus 2020

Evrin Lutfika
Direktur Operasional

#4-0043

مجلس العلماء الاندونيسي
LEMBAGA PENGKAJIAN PANGAN OBAT-OBATAN DAN KOSMETIKA
MAJELIS ULAMA INDONESIA JAWA BARAT (LPPOM-MUI)
THE ASSESSMENT INSTITUTE FOR FOODS, DRUGS, AND COSMETICS
THE INDONESIAN COUNCIL OF ULAMA WEST JAVA (LPPOM-MUI)

HALAL ASSURANCE SYSTEM STATUS

NO. HS2B/009983/102021/FST

بسم الله الرحمن الرحيم

Berdasarkan pemeriksaan dokumen dan audit Implementasi Sistem Jaminan Halal, Lembaga Pengkajian Pangan, Obat - obatan dan Kosmetika - Majelis Ulama Indonesia (LPPOM-MUI) Jawa Barat menyatakan bahwa :
Based on the on-desk appraisal and implementation audit of Halal Assurance System, The Assessment Institute for Foods, Drugs and Cosmetics - The Indonesian Council of Ulama West Java (LPPOM-MUI) states that :

Nama Perusahaan / *Name of Company* : PT. FATHONAH AMANAH SHIDIQ TABLIGH
Alamat Perusahaan/Pabrik / *Address* : Kp. Pedurenan, Jl. Bengkel No. 40 RT.002 RW.002 Kel. Cisalak Pasar Kec. Cimanggis Kota Depok

dinilai telah menerapkan **Sistem Jaminan Halal**
has been implementing ***Halal Assurance System***

dengan kategori/with category
BAIK / *GOOD*

Bandung, 06 Oktober 2021
Direktur,
Director,
Prof. Dr. H. O. Suprijana, M.Sc

Berlaku sampai dengan / Valid until : 05 Oktober 2025

Lembar ini bukan merupakan Sertifikat SJH/This is not HAS Certificate

Sertifikat Pelatihan Halal dan
Sertifikat Sistem Jaminan Halal

LEGALITAS PT. FAST

BADAN PENGAWAS OBAT DAN MAKANAN

Jl. Percetakan Negara No. 23 Jakarta Pusat 10560 Indonesia
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Good Manufacturing Practices for Traditional Medicines

Nomor Sertifikat *Certificate Number*	:	PW-S.02.01.1.43.431.11.22-0127
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Bentuk Sediaan *Dosage Form*	:	Cairan Obat Dalam *Oral Liquid*
Aktivitas *Activity*	:	Ekstraksi, dan Evaporasi Ekstrak; Formulasi, Pencampuran, Pengemasan Primer, dan Pengemasan Sekunder Cairan Obat Dalam *Extraction, and Evaporation of Extract; Formulating, Mixing, Primary Packaging, and Secondary Packaging of Oral Liquid*
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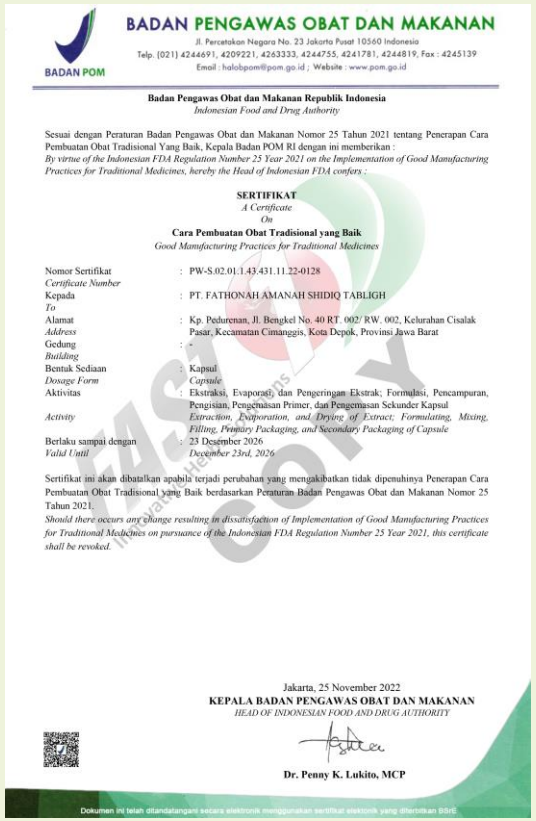

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Gedung *Building*	:	-
Bentuk Sediaan *Dosage Form*	:	Kapsul *Capsule*
Aktivitas *Activity*	:	Ekstraksi, Evaporasi, dan Pengeringan Ekstrak; Formulasi, Pencampuran, Pengisian, Pengemasan Primer, dan Pengemasan Sekunder Kapsul *Extraction, Evaporation, and Drying of Extract; Formulating, Mixing, Filling, Penitary Packaging, and Secondary Packaging of Capsule*
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Gedung *Building*	:	-
Bentuk Sediaan *Dosage Form*	:	Serbuk Oral *Oral Powder*
Aktivitas *Activity*	:	Ekstraksi, Evaporasi, dan Pengeringan Ekstrak; Formulasi, Pencampuran, Pengemasan Primer, dan Pengemasan Sekunder Serbuk Oral *Extraction, Evaporation, and Drying of Extract; Formulating, Mixing, Primary Packaging, and Secondary Packaging of Oral Powder*
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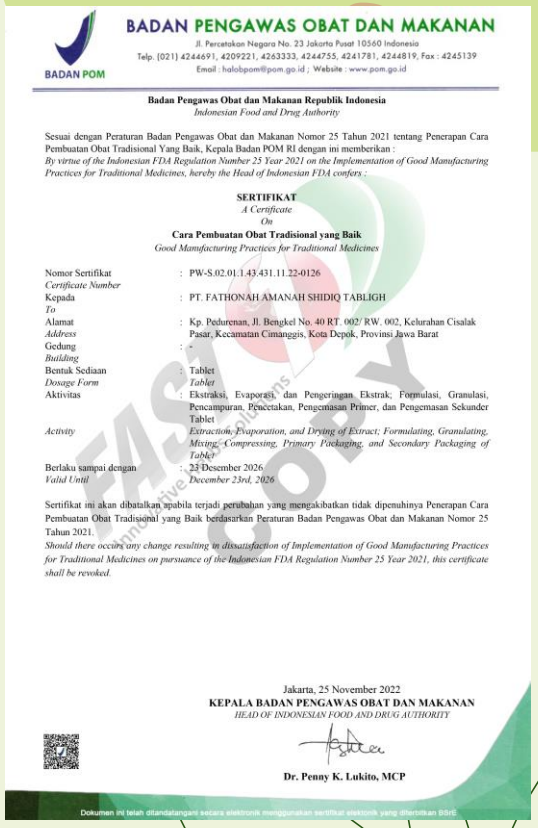

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Gedung *Building*	:	-
Bentuk Sediaan *Dosage Form*	:	Tablet *Tablet*
Aktivitas *Activity*	:	Ekstraksi, Evaporasi, dan Pengeringan Ekstrak; Formulasi, Granulasi, Pencampuran, Pencetakan, Pengemasan Primer, dan Pengemasan Sekunder Tablet *Extraction, Evaporation, and Drying of Extract; Formulating, Granulating, Mixing, Compressing, Primary Packaging, and Secondary Packaging of Tablet*
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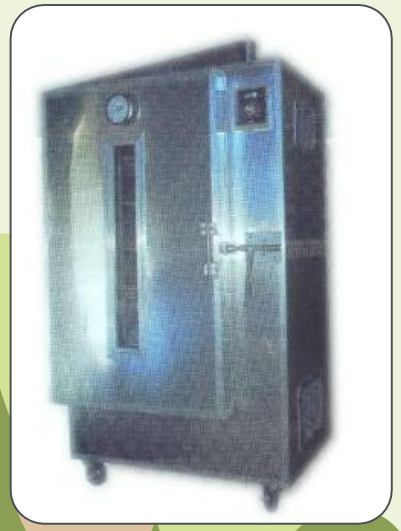

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Original article

Butterfly pea flower (*Clitoria ternatea* L.) extract displayed antidiabetic effect through antioxidant, anti-inflammatory, lower hepatic GSK-3β, and pancreatic glycogen on Diabetes Mellitus and dyslipidemia rat

Wahyu Widowati [a,*], Lusiana Darsono [a], Johan Lucianus [a], Edwin Setiabudi [a], Selonan Susang Obeng [a], Shiela Stefani [a], Roro Wahyudianingsih [a], Kaleb Reynaldo Tandibua [a], Richard Gunawan [a], Cahyaning Riski Wijayanti [b], Agung Novianto [b], Hanna Sari Widya Kusuma [b], Rizal Rizal [b,c]

[a] Faculty of Medicine, Maranatha Christian University, Jl Surya Sumantri no 65, Bandung 40164, Indonesia
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Clitoria ternatea
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Glycogen

ABSTRACT

Diabetes Mellitus (DM) is hyperglycemic or elevated blood glucose level and deficiency of insulin level. DM treatment using synthetic drugs has several complexities, side effects. Reducing the side effects of synthetic drugs, the utilization of herbal medicines is increasingly in demand. Butterfly pea flower (*Clitoria ternatea* L.) extract (CTE) has pharmacological activities such as hepatoprotective, diuretic, antioxidant, antidiabetic, and anti-inflammatory activities. **Objective**: This research was conducted to evaluate antidiabetic potent of CTE in DM and dyslipidemia rats model. **Methods:** LC-MS/MS was used to analyze the CTE compounds. Rats were given high fat diet for 28 days followed by nicotinamide and streptozotocin for inducing DM rats model. DM and dyslipidemia rats model were given CTE at 200, 400, 800 mg/kg of BW, glibenclamide, and simvastatin for 28 days. The glucose and insulin levels on day 28 were measured after treatment of CTE. The CAT, SOD, MDA, IL-18 and protein of pancreas were measured. The glycogen gene expression in pancreas was measured using q-RTPCR method. The GSK-3β expression of liver, IL-6 expression of pancreas were analyzed using IHC method. The data were analyzed using ANOVA and then continued to be analyzed using Tukey's HSD post-hoc test. **Results:** CTE increased level of pancreatic CAT, SOD and protein, reduced pancreatic MDA, IL-18 levels, glycogen gene expression of pancreas, GSK-3β protein expression of liver, and IL-6 protein expression of pancreas in DM and dyslipidemia rats. CTE improved liver histopathology, reduced serum glucose, and enhanced insulin levels. **Conclusion**: CTE has the potency for DM treatment, through antioxidant, and anti-inflammatory in DM and dyslipidemia rats.

Abbreviations: BSA, Bovine Serum Albumin; CAT, Catalase; CTE, *Clitoria ternatea* L.extract; DM, Diabetes Mellitus; eIFs, eukaryotic Initiation Factors; eEFs, eukaryotic Elongation Factors; GSK-3β, Glycogen Synthase Kinase-3 β; GMP, Good Manufacturing Practices; HFD, High Fat Diet; IL-6, Interleukin-6; IHC, Immunohistochemistry; IL-18, Interleukin-18; q-RTPCR, quantitative- Reverse Transcriptase Polymerase Chain Reaction; LC-MS/MS, Liquid Chromatography Mass Spectrometer; MDA, Malondialdehyde; OGTT, Oral Glucose Tolerance Test; PTU, Propylthiouracil; SOD, Superoxide Dismutase; ROS, Reactive Oxygen Species; STZ, Streptozotocin.

* Corresponding author.
E-mail address: wahyu_w60@yahoo.com (W. Widowati).

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1. Introduction

Diabetes Mellitus (DM) is an illness that is characterized by high glucose level, glycosuria. Dyslipidemia with high plasma triglyceride, low High Density Lipoprotein (HDL) and high Low Density Lipoprotein (LDL) is one of the major risk factors for cardiovascular disease in DM. Lack insulin levels in the body caused by any mechanism such as insulin resistance by genetic, lipotoxicity, inflammation, negative regulation by hyperglycemia and mitochondrial dysfunction (Zamora and Villena, 2019).

Insulin is synthesized in β-pancreatic cells and has an important role in glucose homeostasis. This excess glucose is dealt with by glycogenesis in which the liver converts glucose into glycogen for storage (Sullivan and Forbes, 2019). Numerous metabolic diseases, including type-2 DM, have been connected to Glycogen Synthase Kinase-3 (GSK-3) signaling (Gupte et al., 2022). The increasing GSK-3β inhibits the activation of glycogen synthase which converting glucose to glycogen (Beurel et al, 2015). Patients with DM experience in oxidative stress conditions, decrease antioxidant activity such as Superoxide Dismutase (SOD), and increase Malondialdehyde (MDA) (Sunita et al., 2020). Patients with type-2 DM associated with inflammatory conditions, by increasing Interleukin-1β (IL-1β), IL-18, IL-6, and Tumor Necrosis Factor- α (TNF-α) (Zaharieva et al., 2018).

DM pharmacological therapy is administered such as sulfonylureas, metformin, and α-glucosidase inhibitors (acarbose). The side effects of pharmacological therapy include weight gain, hypoglycemia, and digestive disorders (Rosni et al., 2021). Therefore, the natural product therapy which fewer side effects and safer is needed for treating DM. Butterfly pea or telang flower (*Clitoria ternatea* L.) has the potential as antioxidant (Widowati et al., 2022a), anti-inflammatory, antidiabetic because it contains flavonoid compounds such as delphinidin, rutin, kaempferol, malvidin, and quercetin (Verma et al., 2013). This study was done to determine the antidiabetic, anti-inflammatory and antioxidant effects of *C ternatea* L. extract (CTE) toward expression of liver GSK-3β, pancreatic IL-6, liver histopathology, glycogen gene expression of pancreas, CAT, SOD, MDA, IL-18 levels, blood glucose, insulin in DM and dyslipidemia rats model.

2. Materials and Methods

2.1. Preparation of C. ternatea extract, LC-MS/MS assay

The telang flower plant were collected from Kampung Herbal, Pasuruan, East Java, Indonesia. CTE was processed by PT FAST (Depok, Indonesia) based on Good Manufacturing Practices (GMP) with CoA No. Batch 00103211072. The butterfly flower peas were extracted using 70 % ethanol, then it added lactose (Widowati et al., 2021). The bioactive component was analyzed and identified qualitatively using a liquid chromatography mass spectrometer (LC-MS/MS). Hypersil Gold column with 150 mm × 2.1 mm × 1.9 mm was used for the analysis (Gondokesumo et al., 2019a; Widowati et al, 2022b).

2.2. Induction of Diabetes Mellitus and dyslipidemia in rats

The DM and dyslipidemia research protocols have been approved by Maranatha Christian University Ethical Committee, Bandung, Indonesia (147/KEP/VI/2021). Male rats of Sprague Dawley species aged 6 weeks and weighed 120–140 g were obtained from IratCo Laboratory, Bogor, Indonesia. The rats were kept in individual cages in 25 °C room temperature and a 12-h dark/12-h light cycle. The rats were given standard diet and water ad libitum for 7 days (Widowati et al, 2022b). After acclimatization, the rats were administered High Fat Diet (HFD) with 5.5 % crude fiber, 18 % crude protein, 50 % crude fat (PT Indoofeed) and 0.01 % Propylthiouracil (PTU, Dexa Medica) in drunk water (Kurniati et al., 2021), while standard diet had 7.37 % crude fat (Widowati et al., 2013). The induction of dyslipidemia to rats was done by giving HFD and PTU for 28 days. Dyslipidemia of rats was confirmed by serum cholesterol level using Cholesterol Kit (Elabscsi, E-BC-K109-M) ≥ 200 mg/dL. Single intraperitoneal injection of streptozotocin (STZ) for inducing DM (Sigma Aldrich SO130) 60 mg/kg BW 60 min after intraperitoneal (ip) administration of nicotinamide (NA, Sigma Aldrich-N3376) 120 mg/kg of BW. After five days, 12 h Fasting Blood Glucose (FBG) was evaluated using Autocheck blood glucose, DM rats have glucose level > 250 mg/dL (Elamin et al., 2018). After the rats were confirmed to have DM and dyslipidemia, the rats were treated with CTE (200, 400, 800 mg/kg BW), glibenclamide 0.45 mg/kg of BW (Generic, GKL9520905004A2), simvastatin 0.9 mg/kg BW (Generic, GKL131670271A), combination of glibenclamide and simvastatin while distilled water for negative control was given for 28 days (Florence et al., 2014).

2.3. Oral glucose tolerance test

Oral Glucose Tolerance Test (OGTT) was managed as a modification of the tests conducted by Anusooriya et al. (2014), Elamin et al. (2018). The fasted rats were treated for 12 h with unrestricted access to water and glucose given orally 2 g/kg BW, and then their glucose levels were tested in the coccygeal vein blood at 0, 2, 4, and 6 h after glucose loading using Glucose Kit (Elabsci, E-BC-K234-M) (Elamin et al., 2018).

2.4. Serum Collection, rats termination, liver collection

On day 28 after treating CTE, blood samples were taken from plexus *retro*-orbitalis in 12 h-fasted rats before anesthesia. The blood samples were kept at 4 °C for 2 h and centrifuged at 3,500 g for 10 min to obtain the serum (Widowati et al., 2022b). Rats were administered 100 mg/kg BW ketamine HCl (Ikapharmindo Putramas), xyla at 10 mg/kg BW (Interchemie, 361453), and then liver and pancreas were collected (Widowati et al., 2022b). The liver and pancreas were preserved at −80 °C and the remaining liver and pancreas were fixed in formalin (10 %) for immunohistochemistry (IHC), histopathological assay (Florence et al., 2014; Gondokesumo et al., 2019b; Widowati et al., 2022b).

2.5. Serum glucose, insulin assay

The glucose, insulin levels of the serum were measured using Glucose Colorimetric Kit. Rat Insulin Elisa Kit (Elabsci, E-EL-R3034), according to the manufacturer protocol (Elamin et al., 2018).

2.6. CAT, SOD, MDA, IL-18 assay

The CAT, SOD, MDA, IL-18 levels of pancreas were assessed using Kit respectively CAT Kit (Elabsci, E-BC-K031-S), SOD Kit (Elabsci, E-BC-K020), MDA Kit (Elabsci, E-EL-0060), Rat IL-18 Elisa Kit (Elabsci, E-EL-R0567) at 405, 450, 450, 450 nm respectively and Microplate reader (Multiskan™ Spectrophotometer, Thermo Scientific) was utilized to measure absorbance respectively of CAT, SOD, MDA, IL-18 (Widowati et al., 2019; Widowati et al., 2022b).

Table 1
Primer sequence of RNA.

Gene	Primer Sequence (5′ to 3′)	Annealing (°C)	Product length (bp)	Reference
Glycogen	AGAGTTCGTCCGTGGCTGTC GTTCGTGGAGATGCTCGGGA	57	109	https://www.ncbi.nlm.nih.gov NM_001161587.2
GAPDH	TCAAGATGGTGAAGCAG ATGTAGGCCATGAGGTCCAC	57	217	https://www.ncbi.nlm.nih.gov NM_001289726

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Antioxidant Properties of *Curcuma longa* L. and *Curcuma xanthorriza* Rhizomes

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Keywords: Antioxidant, *Curcuma Longa* L. , *Curcuma Xanthorriza*, Free Radical, Oxidative Stress.

Abstract: Oxidative stress can lead to tissue damage and result in disease or aggravate existing disease. Antioxidants are required to protect cells from free radical damage. Temulawak (*Curcuma xanthorriza* L.) and turmeric (*Curcuma longa* L.) are natural ingredients with polyphenol compound. Polyphenols has antioxidants that can neutralize free radicals by donating an electron or hydrogen atom. This study was aimed to determine the antioxidant properties of temulawak extract (TLE) and turmeric extract (TE). The antioxidant activity were determined using total phenolic content (TPC), total flavonoid content (TFC), 2,2 diphenyl 1 picrylhydrazyl (DPPH), 2,2′-Azinobis(3-Ethylbenzthiazoline-6-Sulfonate) (ABTS), hydrogen peroxide (H_2O_2), NO (Nitrogen Oxide) scavenging and ferric reducing antioxidant power (FRAP). The result showed that the TPC of value was 10.93 µg GAE/mg extract, and the TFC value was 5.67 µg QE/mg extract. Meanwhile, TPC and TFC value of TLE were 4.83 and 2.68 µg GAE/mg, respectively. The IC_{50} value of DPPH, ABTS, H_2O_2, NO scavenging activity and FRAP activity of TE were 300.7; 39.19; 86.83; 88.03 µg/mL and 493.75 µm Fe (ii)/µg respectively compared to TLE 197.5; 82.55; 205.94; 164.25 µg/mL and 451.00 µm Fe (ii)/µg respectively. Turmeric has higher antioxidant properties than temulawak, both turmeric and temulawak are potential natural antioxidants.

1 INTRODUCTION

Free radicals are a highly unstable substance. Free radicals are generated in the body due to metabolic processes or environmental factors like industrial chemical exposure, X-ray exposure, smoking, ozone, and air pollution (Lobo et al., 2010). If free radicals are present in the human body, they can bind with other molecules to become stable, allowing these molecules to become free radicals (Phaniendra et al., 2015). As a result of this chain reaction, cells, tissues, and organs are damaged. Antioxidants can donate electrons to free radicals, causing oxidative stress through free radical chain reactions. Lipid peroxidation is caused by free radicals, which destroys liver cells. Antioxidants can minimize cell damage caused by the oxidative process, making them hepatoprotective (Lobo et al., 2010). However, synthetic antioxidants such as Butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT), propyl gallate (PG), and tert-butyl hydroquinone (TBHQ) can give some side effects such as skin allergies, gastrointestinal tract, and even cancer (Caleja et al., 2017; Lourenço et al., 2019; Wang & Kannan, 2019).

In Asia, the Zingiberaceae family is the most commonly grown crop. This plant is beneficial to human health as a source of food, spices, dyes, food colouring, and herbal medicine. Some of the Zingiberaceae family are turmeric (*Curcuma longa* L.) and temulawak (*Curcuma xanthorriza* L.). Turmeric and temulawak are both available and can be consumed as a beverage or used as a cooking spice. Turmeric and temulawak have been shown in previous studies to have various health benefits, including anti-inflammatory, antibacterial, antioxidant, and hepatoprotective properties (Cavaleri, 2018; Lukitaningsih, 2020). Curcuminoid compounds in turmeric and temulawak (curcumin, demethoxycurcumin, bisdemethoxycurcumin) are the main components that function as antioxidants.

This research has done as preliminary data to prove turmeric extract (TE) dan temulawak extract (TLE) as antioxidants potential and this research will be continued to prove TE dan TLE with Good Manufacturing Practice (GMP) as hepatoprotective potential.

This study was aimed to determine the antioxidant properties of TLE and TE using method of 2,2 diphenyl 1 picrylhydrazyl (DPPH), 2,2 ′ - Azinobis(3-Ethylbenzthiazoline-6-Sulfonate) (ABTS), hydrogen peroxide (H_2O_2), NO (Nitrogen Oxide) scavenging activities and ferric reducing antioxidant power (FRAP) potential.

2 METHODS (AND MATERIALS)

2.1 Samples

Temulawak and turmeric were extracted with 70% ethanol solvent. The standardized extract powder of turmeric and temulawak were produced based on current Herbal Good Manufacturing Practices by FAST Co. (Jakarta, Indonesia).

2.2 Total Phenolic Content

The total phenolic content (TPC) was determined using method described by Prahastuti and Utami with slight modification (Prahastuti et al., 2020; Utami et al., 2018). A 0,015 mL standard gallic acid (Sigma 398225) solution in 6 concentration level (50.00 - 1.56 µg/mL) and sample of TE and TLE in concentration of 2000; 1000; and 500 µg/mL were added into well in 96-well plate, respectively. Then, added 60 µl of Na_2CO_3 7.5% (Merck A897992745) and 75 µl Folin- Ciocalteu reagent 10% (Merck 1.090.010.500) into well. The mixed solution was incubated at 50ºC for 10 minutes, then the absorbance was measured in a wavelength of 760 nm using a microplate reader (Multiskan Go Reader, Thermo Fisher Scientific 1510). The phenolic content (TPC) calculation was compared to the gallic acid linear regression using equations 1.

$$y = 0.0429x + 0.152 \quad (1)$$

2.3 Total Flavonoid Content

The total flavonoid content (TFC) was performed using an $AlCl_3$ colorimetric assay method described by Prahastuti and Utami with slight modification (Prahastuti et al., 2020; Utami et al., 2018). An amount of 75 µL standard quercetin (Sigma Q4951) solution in 7 concentration level (500.00 - 7.80 µg/mL) and TE and TLE in concentration of 2000 and 1000 µg/mL, were added into well respectively and each well was mixed with 75 µl $AlCl_3$ 2% (Merck 449598). Using microplate reader (Multiskan Go Reader, Thermo Fisher Scientific 1510), the absorbance was measured in 415 nm of wavelength. The concentration of flavonoid content was calculated from calibration linear regression equation 2.

$$y = 0.0095x+0.037 \quad (2)$$

2.4 DPPH Free Radical Scavenging Assay

The antioxidant activity using DPPH free radical scavenging assay was perfomed using method described by Prahastuti and Widowati with slight modification (Prahastuti et al., 2020; Widowati et al., 2018). An aliquot of 0.05 mL of TE and TEE samples solution was poured into well respectively, then 200 µL of DPPH solution (D9132, Sigma Aldrich, Missouri, USA) was added to each well. The mixture was incubated at the dark room temperature for 30 mins. The absorbance was measured at 517 nm by the microplate reader (Multiskan GO Microplate Spectrophotometer, Thermo Scientific, Massachusetts, USA). The IC_{50} of free radical

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Antioxidant Properties of Soybean (*Glycine max* L.) Extract and Isoflavone

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***Abstract*— Free radicals caused oxidative stress in the body, which leads to various chronic and degenerative diseases. The negative effects of free radicals can be neutralized by natural antioxidants. Soybean (*Glycine max* L.) extract contains isoflavones that have several biological activities, including antioxidants. Soybean extract (SE) antioxidant activity was evaluated compared with isoflavones (ISO). The SE was extracted in aquademineral solvent and additional lactose. SE and ISO were subject to various antioxidant activity assay such as 2,2-diphenyl-1-pycrylhydrazyl (DPPH), 2,2'-azinobis-3-ethylbenzo-thiazoline-6-sulfonicacid (ABTS), H_2O_2, NO scavenging activities and ferric reducing antioxidant power (FRAP) assay, following standard procedure. As a results, the IC_{50} of DPPH, ABTS, H_2O_2, NO, of SE were 246.51; 35.96; 289.41; 39.74 µg/mL respectively. While the IC_{50} value of isoflavones were 71.37; 23.57; 259.50; 11.59 µg/mL respectively. Furthermore, at the higher concentration (50 µg/mL) of SE and ISO's FRAP activity were 196.89 and 177.78 µM Fe(II)/µg. Even though the antioxidant activity of SE is lower than isoflavones, SE still has antioxidant potential. Thus, it can be used for supplement candidate.**

Keywords—soybean extract, isoflavones, antioxidant, oxidative stress

I. INTRODUCTION

Free radicals are molecules that contain unpaired electrons in atomic orbitals. Free radicals have unstable and highly reactive properties. Thus, free radicals can act as oxidizing and reducing agents. Free radical targets are all molecules in the body, especially lipids, nucleic acids, and proteins. Free radicals can cause oxidative stress by binding to molecules in cells, which causes various chronic diseases and degenerative diseases [1]. Free radicals are classified into two groups termed there are Reactive Oxygen Species (ROS) and Reactive Nitrogen Species (RNS). ROS include hydroxyl radical (•OH), hydrogen peroxide (H_2O_2), superoxide anion (O^{2-}), peroxyl radical (•OH_2), and peroxynitrous acid (HNO_3), while the examples for RNS are nitric oxide (NO), nitrous oxide (N_2O), peroxynitrite (NO_3^-), and nitroxyl anion [2]. H_2O_2, NO, and OH are radicals that have a role in causes oxidative stress. Free radicals can be found from the human body's metabolic processes or external exposure, such as smoking, air pollution, and industrial chemicals. To control for the negative effects of free radicals, the body needs antioxidants. Antioxidants can react with free radicals to form reactive substances that are relatively stable [3].

Different methodologies and assays are obtained to determine the antioxidant activity of samples from several origins. The principle has its origin in chemistry and has since become referred to other scientific fields such as biology, medicine, and nutrition. Summarily, it is describing a molecule's capacity to scavenge free radicals [4]. Antioxidant assays method that uses in this research is DPPH, NO, ABTS, H_2O_2, and FRAP.

The principle of H2O2 assay is the reaction between ferrous ammonium and phenanthroline inhibited by the presence of H_2O_2. Thus, it can determine the antioxidant capacity of the sample against H_2O_2 [5]. Phagocytosis, in vivo processes, cell growth regulation, intercellular signal transmission, and the synthesis of basic biological compounds all use hydrogen peroxide to produce energy. Moreover, H_2O_2 is one of the aerobic metabolism products generated and increased during exercise, diseases, and stressful situations [6].

NO is a potent signaling mediator involved in a variety of cellular processes. For example, inflammation, neurotransmission, host defense mechanisms, and vascular tone are all controlled by nitric oxide (NO) [7]. The basis of this assay is a biochemical reaction catalyzed by specific nitric oxide synthases that produce NO in biological tissues. For example, sodium nitroprusside reacts with oxygen in buffered saline to form nitrite ions, which can be detected using the Griess reagent [8].

The principle of DPPH assay is hydrogen donor from plant extract to bind the nitrogen group in DPPH solution. Thus, the DPPH solution becomes stable, and the color change from violet to yellow until colorless. The intensity of the color than measured by spectrophotometry to determine the antioxidant activity. The absorbance was read at 517nm due to the odd electron and the violet color of the solution. The higher absorbance indicated the higher antioxidant activity of the samples [9].

FRAP method is widely used to determine antioxidants. The principle of this method was a reduction of ferroin analog in the acidic medium. The reaction of an antioxidant compound in the sample with FRAP solution produces a complex compound [10]. The complex compound is a solution with a specific color. Then it is measured by spectrophotometry. The absorbance measurement can be related to antioxidant activity and shows how much Fe^{2+} has been reduced [11]. Based on their sources, antioxidants are classified into two categories, namely synthetic and natural antioxidants. Consumption of synthetic antioxidants in the long term could have side effects, such as skin allergies, gastrointestinal tract problems, and increasing the risk of cancer [12]. Therefore, research on natural antioxidants needs to be increased further.

Soybean (*Glycine max* L.) is one of the most popular plants for consumption due to its high nutritional value, such as vitamins A, B, C, and minerals [13]. Soybean contains many compounds such as isoflavones, saponins, phytic acid, phytosterols, trypsin inhibitors, and bioactive peptides. Soybean extract has a high content of polyphenol compounds, including isoflavones. Due to the antioxidant properties of the polyphenolic compounds, soybean extract has biological activities, such as reducing the incidence of non-communicable diseases (NCD), including cancer and cardiovascular disease [14]. Nigerian soybeans accession documented has an antioxidant activity toward DPPH, NO, FRAP, FIC, and CUPRAC methods [15]. An antioxidant is a compound that can react with free radicals. The antioxidant ability of the plant extract is due to phenolic and flavonoid compounds [16]. Several studies have shown that polyphenols, especially anthocyanins, isoflavones, and phenolic acids, are responsible for the health benefits of soybeans in general [17]. Other studies showed that soybean and isoflavones have antioxidant, antidiabetic, anticancer, and anti-inflammatory [18]. This study aims to determine the antioxidant activity of soybean extract compare with isoflavones by DPPH, ABTS, H_2O_2, NO, and FRAP assay.

Research on antioxidant activity in soybean extract has been widely conducted. However, research on Soybean Extract (SE) with GMP standards has not been widely carried out. Moreover, the comparison of the antioxidant activity of soybean extract with its compounds needs further investigation. In this study, soybean extract's (SE) antioxidant activity was investigated and comparing it with isoflavones (ISO). Thus, research was conducted to characterize the ingredient of supplement formula as immunomodulator supplement in inhibiting cytokine storm.

II. MATERIALS AND METHODS

A. Samples Preparation

Soybean extracts were obtained from PT. Fathonah Amanah Sibligh Tabligh (Traditional Medicine Industry) with No. Batch 00107201055. The extraction used in this study was the maceration method with aquademineral as a solvent and additional lactose. The Soybean extract was standardized by Good Manufacturing Practice (GMP). Isoflavone (S200508) was obtained from Xi'an Sost Biotech Co., Ltd with ethanol/water solvent. The samples were diluted into DMSO 10% and store at -20 °C, and used for further assay.

B. DPPH (2,2-Diphenyl-1-picrylhydrazil) Scavenging Assay

SE and ISO were added 50 µL to the 96-well microplate. After that, add 200 µL DPPH solution (Sigma Aldrich, D9132) and incubate for 30 minutes in a dark condition. Multiskan GO Microplate Spectrophotometer, Thermo Scientific microplate reader, was utilized to measuring solution's absorbance at 517 nm. DPPH scavenging activity measures were carried out in triplicate [19] and calculated with the equation below:

$$\% \text{ scavenging activity} = \frac{\text{Control absorbance} - \text{sample absorbance}}{\text{Control absorbance}} \times 100 \quad (1)$$

C. ABTS (2,2'-azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) Reducing Activity Assay

To begin with, preparation, mix 14 mM ABTS (Sigma Aldrich, A1888) and 4.9 mM potassium persulfate (Merck, EM105091) with a volume ratio of 1:1 for 16 hours in a darkroom. Then, 5.5 mM of PBS (Phosphate Buffered Saline, pH 7.4) was added to the solution until the absorbance of the solution reached 0.70±0.02 at 745 nm. After that, 2 µL of SE and ISO and 198 µL of ABTS •+ solution were added to the 96-well microplate. After incubated for 6 minutes at 30 °C, then measuring the absorbance at 745 nm [19]. ABST reducing activity measured in triplicate and calculated with (1).

D. H_2O_2 (Hydrogen Peroxide) Scavenging Activity

SE and ISO were added 60 µL to the 96-well microplate. Then, 12 µL of 1 mM ferrous ammonium sulfate (Sigma Aldrich, 215406) was added to the well control and well blank. Next, dimethyl sulfoxide (DMSO) (Supelco, 1.02952.1000) was added 63 µL into the control well and 90 µL into the well blank. After that, 5 mM H_2O_2 was added as much as 3 µL (Merck, 1.08597.1000) to a 96-well microplate. Incubate the mixture at room temperature in dark condition for 5 minutes. After incubation, add 75 µL of 1,10-phenanthroline (Sigma Aldrich, 131377) into the 96-well microplate and incubate again for 10 minutes. The absorbance value was measured at 510 nm using a microplate reader. The experiment was carried out in triplicate [20]. H_2O_2 scavenging activity measures were carried out in triplicate and calculated with (1).

E. NO (nitric oxyde) Scavenging Activity Assay

Sodium nitroprusside 10 mM (Merck, 106541) in PBS (Gibco, 1740576) as much as 40 µl was mixed with 10 µl of

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Antioxidant Potency of *Kaempferia galanga* Linn and *Zingiber officinale* var. Rubra rhizomes

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Abstract*—Reactive oxygen species (ROS) include radical and non-radical oxygen species produced by partial reduction of oxygen. Consumption of antioxidants is necessary to prevent damage to cells, tissues, and organs due to ROS. Red ginger (*Zingiber officinale*) and *kencur* (*Kaempferia galanga*) are known as potential natural antioxidants. The purpose of this research is to determine the potency of antioxidant in ginger red extract (RGE) and *kencur* extract (KE). The extract characteristics were assayed including total phenol content (TPC) using gallic acid standard and total flavonoid content (TFC) using quercetin standard. The antioxidant potency was assayed namely 2,2 diphenyl 1 picrylhydrazyl (DPPH), hydrogen peroxide (H_2O_2), Nitrogen oxide (NO), 2,2′-Azinobis(3-Ethylbenzthiazoline-6-Sulfonate) (ABTS) scavenging activities, and ferric reducing antioxidant power (FRAP) methods. TPC of RGE and KE were 4.83 and 10.93 µg GAE/mg extract respectively. Meanwhile, the TFC of RGE was 2.68 QE µg/mg extract and KE was 5.67 QE µg/mg extract. The Median Inhibitory Concentration (IC_{50}) in DPPH, ABTS, NO, H_2O_2 scavenging activities of RGE were 79.88; 67.33; 140.35; 212.26 µg/ml respectively and KE were 197.01; 145.16; 52.42; 155.52 µg/ml respectively. The FRAP method shows that KE was greater antioxidant activity compared to RGE. In conclusion, RGE and KE are potential as natural antioxidants.

Keywords*—Kempferia galanga Linn, Zingiber officinale, antioxidant, free radical, oxidative stress

I. INTRODUCTION

The radical and non-radical oxygen species that produced by partial reduction of oxygen, such as superoxide anion (O_2), hydrogen peroxide (H_2O_2), and hydroxyl radical (HO•), are examples of reactive oxygen species (ROS)[1]. The necrosis and apoptosis were due to the damage of nucleic acid bases, lipids, and also proteins. It is the major consequence of oxidative stress, which can seriously impair the function of cell and viability or cause a different of cellular responses via the generation of secondary reactive species [2]. Various diseases are triggered by ROS, mostly inflammation disease and also cancer, atherosclerosis, diabetes, cardiovascular disease, aging, liver diseases. These various diseases are caused by imbalance between free radicals ROS and antioxidants in the body. When free radicals "steal" an electron from a nearby compound or molecule, they produce a new free radical in its place. As a result, the newly created radical seeks to return to its ground state by stealing electrons from cellular structures or molecules with antiparallel spins [3]. The cells are harmed as a result of this chain reaction. The free radical in the body is come from endogenous and exogenous sources. The endogenous sources are come from mitochondria, peroxisomes, endoplasmic reticulum, phagocytic cells, etc. And the exogenous are mostly come from industrial pollution and also the consumption of alcohol, vegetables that used pesticide and drugs. Besides, smoking with tobacco also cause free radical in the body [4].

Antioxidants are compounds that provide electrons to free radicals, preventing free radical damage to cells. As a result, the molecule is stabilized, avoiding damage to other cells [3]. Consumption of antioxidants can prevent the effect free radical. Previous research has shown that long-term use of synthetic antioxidants can cause skin allergies, gastrointestinal issues, and, in some cases, an increased risk of cancer [5,6,7]. As a result, natural antioxidants are being researched extensively. Natural antioxidants may not have any side effects and are easy to acquire. Natural antioxidants are mainly polyphenol, carotenoids and vitamins [8]. Based on its structure, the hydroxyl groups and phenolic rings are linked to their antioxidant properties.

Red ginger (*Zingiber officinale)* and *kencur* (*Kaempferia galanga* Linn.) belongs to Zingiberaceae family [9]. Both red ginger and *kencur* widely used by the public as spice, drinks and traditional medicine. Red ginger and *kencur* are believed to contain antioxidants, antibacterial, anti-inflammatory properties, so they can also be potential as hepatoprotective. This research used standardized extract that produced based on current Herbal Good Manufacturing Practices of National Agency of Drug and Food Control (NA-DFC) Republic of Indonesia. This research was done for preparing novelty Herbal Drug Standardization (Obat Herbal Terstandar – OHT) for hepatoprotective based on antioxidant and anti-inflammatory potency.

II. METHODS

A. Preparation Samples

Red ginger extract (RGE) and *kencur* extract (KE) were obtained from FAST Co. (Depok, West Java, Indonesia) with CoA No. Batch 00103211075, 00103211075. The RGE and KE were extracted from rhizome of red ginger and *kencur* using 70% ethanol solvent with additional substance lactose. The RGE and KE were produced based on current Herbal Good Manufacturing Practices of National Agency of Drug and Food Control (NA-DFC) Republic of Indonesia.

B. Total Phenolic Content and Flavonoid Content

A 15 µl standard gallic acid (Sigma Aldrich, 398225) solution was diluted into 6 concentration level (50.00; 25.00; 12.50; 6.25; 3.13; 1.56 µg/mL). The extracts diluted into concentration of 2000; 1000; and 500 µg/mL for total phenol method. Each standard and also the sample were mixed with 60 µl of Na2CO3 7.5% (Merck, A897992745) and 75 µl Folin- Ciocalteu reagent 10% (Merck, 1.090.010.500) in the microplate. The incubation of solution was conducted at 50 ºC for 10 minutes, then the absorbance was measured at 760 nm of wavelength using a microplate reader (Multiskan Go Reader, Thermo Fisher Scientific 1510). Analysis of the phenol content was carried out based on linear regression equations of the gallic acid equivalent (GAE) (Sigma Aldrich, G7384) [10,11].

The total flavonoid content was measured with an $AlCl_3$ colorimetric assay with minor modification. A 75 µL standard quercetin (Sigma Aldrich, Q4951) solution in 7 concentration level (500.00; 250.00; 125.00; 62.50; 31.25; 15.60; and 7.80 µg/mL) and extracts in the concentration of 2000 and 1000 µg/mL were added to the microplate and mixed with 75 µl of $AlCl_3$ 2% (Merck, 449598). The absorbance of the samples was measured in 415 nm of wavelength with the microplate reader. Analysis of the TFC based on linear regression equations of quercetin equivalent (QE) [11].

C. Determination of 2,2 diphenyl 1 picrylhydrazyl (DPPH) Free Radical Scavenging

Samples of 50 µl (RGE, KE) were mixed with 200 µl of DPPH solution (Sigma Aldrich, D9132). The mixture then incubated in the dark room for 30 min. The absorbance was read using a microplate reader at 517 nm wavelength. The IC_{50} calculation was obtained from the scavenging activity. The equation 1 was the % DPPH of scavenging activity [12,13].

$$\%\ \text{scavenging activity} = \frac{Ac - As}{Ac} \times 100 \quad (1)$$

Ac: The absorbance of negative control solution
As: The absorbance of sample solution

D. FRAP Assay

The modified FRAP method was used. The FRAP reagent was made by 10 mL acetate buffer (pH 3.6), 1 mL FeCl3.6 H_2O in distilled water at 20 mM, and 1 mL 2,4,6-Tris(2-pyridyl)-s-triazine (TPTZ) in 40 mM HCl. After that, 142.50 µl FRAP reagent and 7.50 µl samples (RGE, KE) were added into 96 well plate then incubated at 37 ^{0}C for 30 min. The absorbance of the mixture was measured at 539 nm by the microplate reader. Following that, a $FeSO_4$ standard curve with varying concentrations was created. The µM Fe (II)/µg extract were used as an unit to presented the result [12,13].

E. ABTS Reducing Activity Assay

The solution of ABTS was made by mixing 14 mM 2,2′-Azinobis(3-Ethylbenzthiazoline-6-Sulfonate) with 4.9 mM $K_2S_2O_8$ (Merck, EM105091), for 16 h at 25°C with the dark condition. The mixture was then diluted in 5.5 mM PBS (pH 7.4) until the absorbance of the mixture solution was 0.70 ± 0.02 at 745 nm. The 2 µl of samples were introduced into microplate of 96 well, followed by 198 µl of ABTS solution. The mixture was then incubated at 30 ^{0}C for 6 min and measured by the microplate reader at 745 nm. ABTS-reducing activity was then used to measure the median inhibitory concentration (IC_{50}). The equation of ABTS reducing activity was calculated with equation 1 [14,15].

F. The Scavenging Activity of Hydrogen Peroxide (H_2O_2)

The 60 µl of samples and blank control were mixed into the microplate then 12 µl of 1 mM Ferrous ammonium sulfate (Sigma Aldrich, 215406). The 63 µl of DMSO (Merck, 1.02952.100) was added to sample's well and 90 µl to control's well followed by 3 µl of H_2O_2 5 mM (Merck, 1.08597.1000). The mixture was incubated at 25°C, in a dark room, for 5 min. 75 µl of 1,10-phenanthroline (Sigma Aldrich, 131377) was then added to the mixture and incubated for 10 min in the dark room at room temperature. The mixture absorbance was then measured by the microplate reader at 510. The scavenging activity of H_2O_2 was calculated by equation 1 [15].

G. The Scavenging Activity of Nitrogen Monoxide (NO)

Samples in various concentrations were mixed with 10 mM sodium nitroprusside (Merck, 106541) in phosphate buffered saline (PBS) (Gibco, 1740576). Then the mixture was incubated at 25°C for 2 h followed by the addition of Griess reagent 1% sulfanilamide (Merck, 111799), 2% H_3PO_4 (Merck, 100573) and 0.1% N-(1-napththyl) ethylenediamine dihydrochloride) (Sigma Aldrich, 222488). The absorbance was carried out with the microplate reader at 546 nm. The scavenging activity of NO was calculated by equation 1 [10].

III. RESULTS

A. Total Phenolic and Flavonoid Content

Determination of total phenolic and flavonoid content of RGE and KE. The linear regression equation for Total Phenolic Content (TPC) and Total Flavonoid Content (TFC) were equation 5 and 6 respectively.

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Antioxidant Activity of Green Tea Extract and Myricetin

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Abstract*—Free radicals are the major cause of oxidative stress, which can lead to inflammatory diseases, ischemic diseases, hemochromatosis, emphysema, and other illnesses. Antioxidant intake is essential for keeping the body's oxidative processes in balance. Green tea containt a natural antioxidant that is commonly consumed and readily available. Myricetin is a pure component of green tea. This study aims was to determine the antioxidant activity of green tea extract (GTE) compared with myricetin (MYR). Antioxidant activity properties were determined by 2,2-diphenyl-1 picrylhydrazyl (DPPH), 2,2′-Azinobis(3-Ethylbenzthiazoline-6-Sulfonate) (ABTS), hydrogen peroxide (H_2O_2), NO scavenging, and ferric reducing antioxidant power (FRAP). The analysis results showed that the IC_{50} of GTE (24.00 µg/mL) was higher than MYR (4.68 µg/mL) in DPPH scavenging activity. The highest concentration of FRAP activity of GTE and MYR were 595.78±19.35 and 530.67±10.97 µM Fe (II)/µg. GTE also had a higher IC_{50} value for ABTS reducing activity than MYR, at 25.16 µg/mL versus 16.78 µg/mL. According to H_2O_2 scavenging activity, MYR has higher antioxidant activity (133.32 µg/mL) than GTE (137.31 µg/mL). Meanwhile, the NO scavenging assay results show that MYR (19.70 µg/mL) has a higher IC_{50} value than GTE (7.10 µg/mL). In conclusion, GTE has potential antioxidant activity like its particular compound, MYR.

Keywords*—green tea, myricetin, antioxidants, free radicals, oxidative stress

I. INTRODUCTION

Free radicals are molecules that lack an electron pair in an atomic orbital, making them unstable and extremely reactive [1]. Free radicals can accept electrons (oxidants) or give electrons (reductions) to other molecules to attain stability. As a result, the targeted molecule loses an electron and becomes a free radical, triggering a chain reaction that eventually harms the living cells [2]. Free radicals are generated in the body by metabolic processes or by environmental factors such as X-ray exposure, ozone, smoking, air pollution, and industrial chemicals.

Oxidative stress is caused by an imbalance between antioxidants and free radicals in the cells or tissue, which damages lipids, proteins, and nucleic acids [3]. Oxidation reactions involving free radicals that can affect cell membranes and DNA composition [4]. Inflammatory diseases (arthritis, vasculitis, glomerulonephritis, lupus erythematosus, adult respiratory diseases syndrome) and ischemic diseases (heart diseases, stroke, intestinal ischemia) can all be caused by this condition, hemochromatosis, AIDS, emphysema, stomach ulcers, hypertension and preeclampsia, a neurological problem (Alzheimer's disease, Parkinson's disease, muscular dystrophy), alcoholism, and smoking-related ailments [1].

Antioxidants are stable molecules that can donate electrons to free radicals so that they become stable then stop the reaction of free radicals with other molecules. Antioxidants able to prevent or inhibit cells damage by neutralizing free radicals and also by inhibit of pro-inflammatory cytokines production. Antioxidants are classified into two categories depend on their sources, synthetic and natural antioxidants. Butylated hydroxy anisole (BHA) [3], butylated hydroxytoluene (BHT) [5], propyl gallate (PG), and tert-butyl hydroquinone (TBHQ) are the most commonly used synthetic antioxidants in the food industry. Previous studies shown that consumption of synthetic antioxidants for long term have several side effects, such as skin allergies, gastrointestinal tract problems, and in some cases increased the risk of cancer [6].

Green tea have known contain a natural antioxidant that is commonly consumed and readily available. Previous studies shown that green tea have antioxidant activity. Flavonols, especially quercetin, kaempferol, and myricetin, as well as their glycosides, are present in tea [17]. Green tea polyphenols, especially catechins, which account for 25–35 percent of the dry weight of green tea leaves, are credited with the most beneficial effects [7][13].

Although some research on antioxidant activity in green tea has been conducted. However, the comparison with its compound needs to be investigated further. Myricetin is a bioactive compound in the green tea. Previous research stated that myricetin has anti-inflammatory, anti-oxidant, anti-cancer and anti-bacterial effects [8][9]. However, the solubility of myricetin in the water is low (16.6 µg/mL) [10] and myricetin is not readily available [8][9][10].

The purpose of this study was to determine the antioxidant activity of green tea extract (GTE) by compare it with myricetin (MYR). Thus, it can be used as immunomodulator in food supplement.

II. METHODS

A. Samples Preparation

Green tea extract (GTE) was obtained from PT. FAST (No. Batch 00107201057) with ethanol 70% solvent based on standard of The Indonesian Food and Drug Authority. The myricetin (No. Batch SOST2020031201) were obtained from Xi'an Sost Biotech Co., Ltd with water/ethanol solvent. The samples were diluted into DMSO 10% and store at -20°C for further assay.

B. DPPH Free Radical Scavenging Assay

The 50 µL of samples were added to a 96-well microplate then 200 µL of DPPH solution (Sigma Aldrich, D9132,) was added. The mixture was then incubated in the darkroom for 30 min. The absorbance was read at 517 nm using a microplate reader (Multiskan GO Microplate Spectrophotometer, Thermo Scientific). The IC_{50} calculation is obtained from the scavenging activity. The equation of scavenging activity [11] [12]:

$$\% \text{ scavenging activity} = \frac{\text{Control absorbance} - \text{sample absorbance}}{\text{Control absorbance}} \times 100 \quad (1)$$

C. FRAP Assay

The FRAP reagent was made by mixing 10 mL acetate buffer (pH 3,6), 1 mL ferric chloride hexahydrate (1.03943.0250, Merck) in distilled water at 20 mM, and 1 mL 2,4,6-Tris(2-pyridyl)-s-triazine (TPTZ) (Sigma Aldrich, T1253) in 40 mM HCl.The 142.50 µL FRAP reagent and 7.50 µL samples (GTE and MYR) were introduced into a 96-well plate then incubated at 37 ºC for 30 min. The absorbance of the mixture was measured at 539 nm by a microplate reader [11] [12].

D. ABTS reducing activity assay

The antioxidant activity of GTE and MYR was evaluated using the 2,2'-Azino-bis (3-ethylbenzothiazoline-6- sulphonic acid) (ABTS•+) diammonium salt-free radical assay (A1888-2G, Sigma Aldrich). 14 mM ABTS was dissolved in 4.9 mM potassium persulfate (Merck, EM105091) in a 1:1 volume ratio at room temperature for 16 hours in the dark to make the ABTS solution. The solution was diluted with 5.5 mM PBS (pH 7.4) until the absorbance was 0.70 ± 0.02 at 745 nm. The 2 µL of samples were mixed with 198 µL ABTS solution in 96-well microplate.

The solution was then incubated at 30ºC for 6 minutes before being measured at 745 nm with a microplate reader. The median inhibitory concentration was then calculated using the ABTS-reducing activity (IC_{50}). The reducing activity of ABTS was determined using equation [1] [13] [14].

E. H_2O_2 scavenging Activity

The 60 µL of samples and blank control was introduced into 96-well microplate, then 12 µL of 1mM Ferrous Ammonium Sulfate (Sigma Aldrich, 215406) were added. The 63 µL of DMSO (1.02952.100, Supelco) was added to the sample's well and 90 µL of DMSO into control's well followed by 3 µL of 5 mM H_2O_2 (Merck, 1.08597.1000). The mixture was incubated at room temperature, in the dark room, for 5 min. In the darkroom, the mixtured was mixed with 75 µL of 1,10-phenanthroline (Sigma Aldrich, 131377) at room temperature before incubated for 10 minutes. The absorbance of the mixture was read at 510 nm. Equation was used to calculate H_2O_2's scavenging activity [1] [14].

F. NO Scavenging Assay

Samples in various concentrations were mixed with 10 mM Sodium Nitroprusside (Merck, 106541) in Phosphate-Buffered Saline (PBS) (Gibco, 1740576). The mixture was incubated at 25°C for 2 hours followed by addition of Griess reagent (1% Sulfanilamide (Merck, 111799), 2% H_3PO_4 (Merck, 100573) and 0.1% N-(1-napththyl) Ethylenediamine dihydrochloride) (Sigma Aldrich, 222488). The formation of chromophore absorbance due to diazotization of nitrite with sulfanilamide and coupling of Naphthyl ethylenediamine dihydrochloride was carried out with a microplate reader at 546 nm of wavelength. The scavenging activity of NO was calculated by equation [1] [15].

III. RESULTS

A. DPPH Scavenging Activity

Determination of DPPH scavenging activity in various concentrations shows that GTE has higher scavenging activity compared to MYR as shown at Table I.

TABLE I. **DPPH SCAVENGING ACTIVITIES OF GREEN TEA AND MYRICETIN**

Final Conc. (µg/mL)	DPPH scavenging activity (%)	
	GTE	*MYR*
200	80.93 ± 0.49^{f}	94.39 ± 0.43^{f}
100	65.16 ± 0.19^{e}	72.44 ± 2.54^{e}
50	55.76 ± 0.12^{d}	58.39 ± 0.39^{d}
25	52.09 ± 0.11^{c}	50.17 ± 0.45^{c}
12.5	51.80 ± 0.81^{b}	46.85 ± 0.19^{b}
6.25	51.62 ± 0.55^{a}	43.02 ± 0.56^{a}

*The data is presented in the form of means ± standard deviations. The letters (a,b,c,d,e,f) indicate significant differences in concentrations at P<0.05. (Dunnet T3 post hoc test)

The DPPH scavenging activity of GTE (80.93 ± 0.49 %) was lower than MYR (94.39 ± 0.43 %) at the highest concentration of samples. Furthermore, GTE (24.00 µg/mL) had a higher IC_{50} value than MYR (4.68 µg/mL), see Table II. These results suggest that GTE has antioxidant activity although lower than MYR by DPPH assay.

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PRODUK HAII TERDAFTAR DI BPOM

Bagaimana cara mengetahuinya?

1. Buka cekbpom.pom.go.id
2. Cari Berdasarkan ‘NAMA PRODUK’
3. Ketik salah satu produk yang terdapat di HAII
4. Produk akan muncul
5. Pastikan nomor registrasi yang tertera pada web sesuai dengan produk.

Izin Pendirian Perusahaan Obat Tradisional :

1. IOT = Industri Obat Tradisional diterbitkan Kementrian Kesehatan RI
2. UKOT = Usaha Kecil Obat Tradisional diterbitkan Dinas Kesehatan Provinsi
3. UMOT = Usaha Mikro Obat Tradisional diterbitkan Dinas Kesehatan Kota/Kabupaten

Kode Izin Edar BPOM :

1. TR = Obat Tradisional Dalam Negeri
2. TI = Obat Tradisional Import
3. SD = Suplemen Kesehatan Dalam Negeri
4. SI = Suplemen Kesehatan Import
5. NA = Notifikasi Asia
6. MD = Makanan Dalam
7. ML = Makanan Luar Negeri/Import

P IRT = Pangan Industri Rumah Tangga
Diterbitkan oleh Dinas Kesehatan Kota/Kabupaten

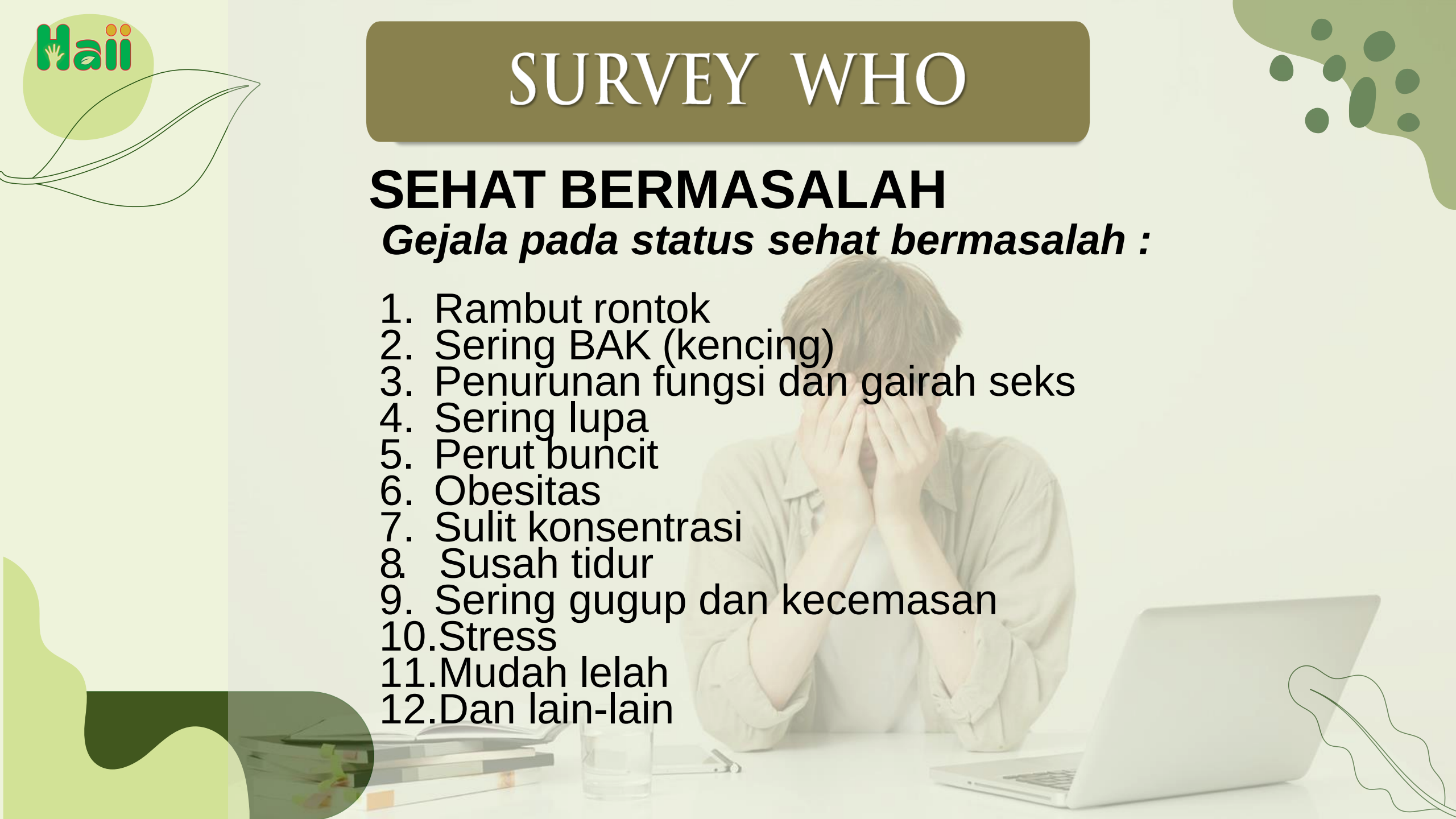
Herbalogi Dasar dan Pemakaian Dosis

SURVEY WHO

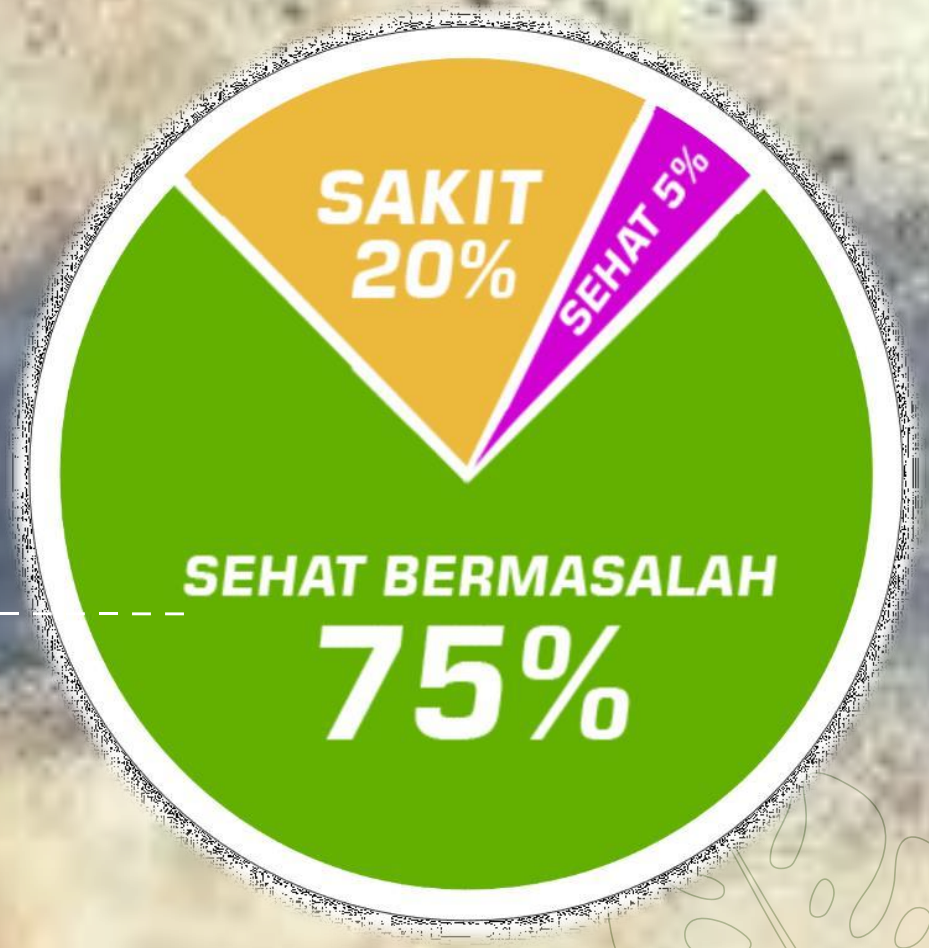
SEHAT BERMASALAH

Gejala pada status sehat bermasalah :

1. Rambut rontok
2. Sering BAK (kencing)
3. Penurunan fungsi dan gairah seks
4. Sering lupa
5. Perut buncit
6. Obesitas
7. Sulit konsentrasi
8. Susah tidur
9. Sering gugup dan kecemasan
10. Stress
11. Mudah lelah
12. Dan lain-lain



SURVEY WHO

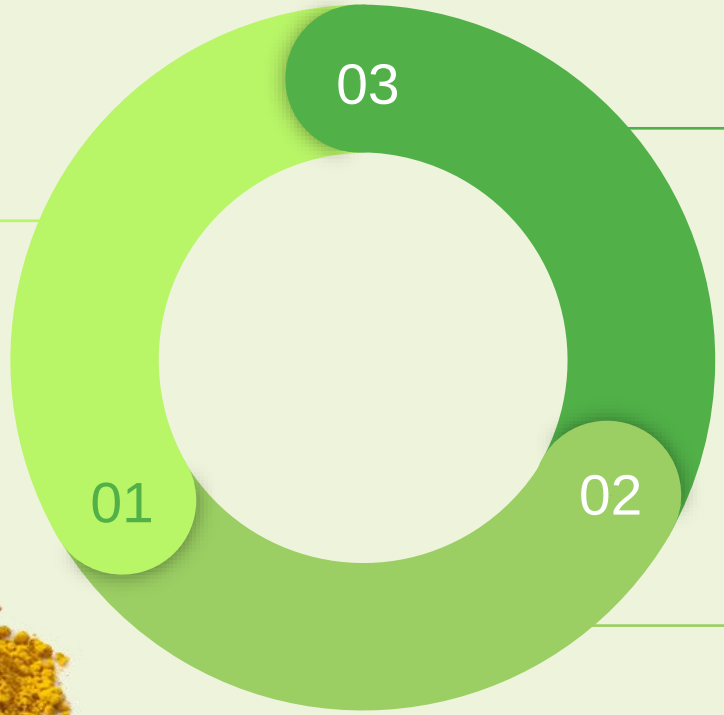


JIKA IYA....

ANDA SEDANG DI KONDISI SEHAT BERMASALAH

Bisnis Obat Bahan Alam/Herbal adalah bisnis yang bersifat Blue Ocean.
Yang pasarnya sangat luas untuk mendapatkan income yang tak terhingga

Mengapa harus Obat Herbal ?



Mengarah kepada sumber penyakit

Mencegah atau memperbaiki penyakit kronis dan degeneratif

Perbaikan fungsi organ tubuh

Fungsi Obat Herbal :

- PROMOTIF = Anjuran
- PREVENTIF= Pencegahan
- CURATIF = Penyembuhan
- REHABILITATIF = Memperbaiki

Produk Herbal Menurut BPOM :

- ✓ AMAN
- ✓ BERKHASIAT
- ✓ BERKUALITAS

GAMASY GAMAT PT.FAST/ PT.HAII

- Isi dalam botol = 60 tablet
- 1 Tablet = 600 mg
- Harga Mitra = Rp200.000
- Komposisi = 6,8 Kg menjadi 1 Kg (6,8 : 1) = 680%
- Kandungan 1 tablet = 600 mg x 680% = 408.000 mg
- Konsumsi 3 x 2 tablet = 6 x 408.000 = 2.448.000 mg
- Masa konsumsi = - 60 tablet : 6x sehari = habis 10 hari ➔ diperlukan 3 botol
  - 60 tablet : 3x sehari = habis 20 hari ➔ diperlukan 1.5 botol
  - 60 tablet : 2x sehari = habis 30 hari ➔ diperlukan 1 botol

Gamat produk lain :

- Isi dalam botol = 30 kapsul
- 1 kapsul = 500 mg
- Harga Konsumen = Rp150.000
- Komposisi = 2 Kg menjadi 1 Kg (2 : 1) = 200%
- Kandungan 1 kapsul = 500 mg x 200% = 100.000 mg
- Konsumsi 3 x 2 kapsul = 6 x 100.000 mg = 600.000 mg
- Masa konsumsi = - 30 kapsul : 6x sehari = habis 5 hari ➔ diperlukan 6 botol
  - 30 kapsul : 3x sehari = habis 10 hari ➔ diperlukan 3 botol
  - 30 kapsul : 2x sehari = habis 15 hari ➔ diperlukan 2 botol

Perbandingan 4x lipat lebih besar komposisi Gamasy Gamat PT.FAST/PT.HII

KOMPARASI GAMASY GAMAT VS PRODUK LAIN

URAIAN	HAII	LAINNYA
Jumlah Butir	60 tablet	30 kapsul
Bobot	600 mg	500 mg
Harga	Rp200.000,-	Rp150.000,-
Komposisi	6.8 : 1	2 : 1
Kandungan per butir	408.000 mg	100.000 mg
Masa konsumsi	6x sehari : 3 botol	6x sehari : 6 botol
	3x sehari : 1.5 botol	3x sehari : 3 botol
	2x sehari : 1 botol	2x sehari : 2 botol

Beda herbal seduhan di rumah dengan yang diproduksi PT. FAST (diedarkan PT. HAII)

Obat Herbal Seduhan	Obat Herbal PT.FAST
Penampang daun masih lebar tidak dicacah sehingga penarikan zat aktifnya sedikit	Penampang daun dicacah(dibuat serbuk) sehingga penarikan zat aktifnya lebih banyak (sempurna)
Jumlah daun (simplisia) yang dipakai sangatlah sedikit (30 gram), diseduh dengan suhu tinggi (biasanya sampai mendidih >100*C dalam 1 gelas 200 ml) yang mengakibatkan zat aktif di simplisia berkurang/hilang; yang tertinggal hanya zat warna	Diekstraksi dengan cara Maserasi (perendaman) yaitu komposisi misalnya 100 kg simplisia dijadikan 10 kg bahan baku ekstrak (10 : 1) dengan suhu maksimum 60°C agar zat aktifnya tidak hilang (menguap)
Tidak memakai aqua demineralisasi sehingga zak aktif sulit masuk ke gelas minuman	memakai aqua demineralisasi sehingga zak aktif mudah masuk kedalam maserat (cairan kental ekstrak)

Akan sangat berbeda khasiat antara yang biasa kita seduh dengan yang dikonsumsi dengan proses ekstraksi pabrik

TUJUAN KONSUMSI OBAT HERBA

(Kelenjar ini berperan untuk menimbulkan kantuk dan mengatur irama tidur alami**)**

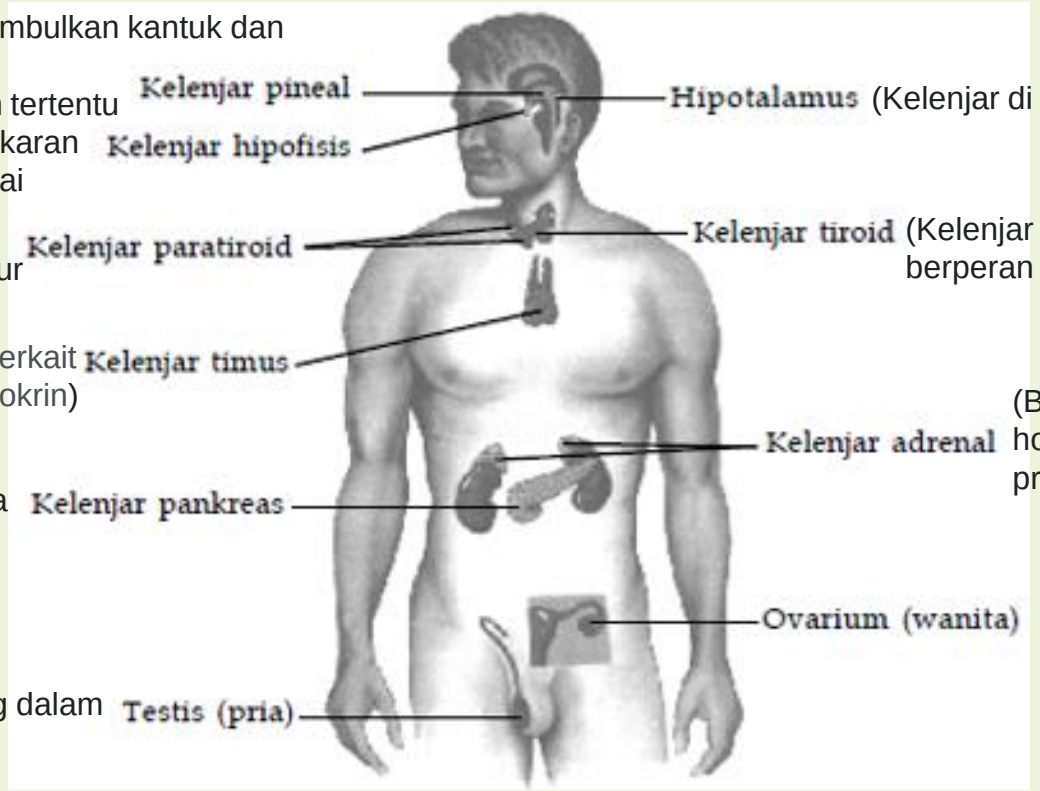
(Kelenjar yang memproduksi hormon-hormon tertentu mengatur pertumbuhan, produksi dan pembakaran energi, menjaga tekanan darah, serta berbagai fungsi pada organ tubuh lainnya**)**

(Berperan penting dalam mengatur kadar kalsium dalam darah)

(Bertugas untuk memproduksi hormon terkait sistem kekebalan tubuh dan sistem endokrin)

(Salah satu organ tubuh yang punya peran besar dalam pencernaan)

(organ yang sangat penting dalam sistem reproduksi pria)



(Kelenjar di otak yang **mengontrol sistem hormon)**

(Kelenjar tiroid mengendalikan metabolisme dan berperan penting dalam kesehatan**)**

(Bertugas memproduksi dan melepaskan beberapa hormon penting dalam tubuh, yang berperan dalam proses metabolisme, kekebalan, dan lain-lain.**)**

Berperan penting dalam fungsi reproduksi wanita seperti, memproduksi dan menyimpan telur serta menghasilkan hormon wanita seperti, estrogen dan progesteron

- Mengobati penyakit yang telah ada
- Mencegah munculnya penyakit baru
- Memelihara kesehatan tubuh

PRINSIP HERBALOGI :

BAHAN BAKU

- Menggunakan bahan-bahan yang bersifat alami.
- Tidak menggunakan bahan isolasi (bahan kimia sintetik atau obat-obatan kimia).
- Bahan Alami di proses dengan metode Extraksi (maserasi atau perkolasi).

Racun Dalam Tubuh Yang Harus Dikeluarkan :

- Virus
- Bakteri
- Radikal Bebas
- Logam Berat

PRINSIP HERBALOGI :

PROSES (4R)

- Release (Mengeluarkan)
- Relax (Mengistirahatkan)
- Regeneration (Mengganti dengan yang baru)
- Refunction (Mengfungsikan kembali)

Prinsip Herbalogi
Proses 4R : Release (Mengeluarkan)

Cara Mencegah Proses Detoksifikasi yang Berlebihan atau Vulgar:

Pada Label Obat Herbal Biasanya Tertulis :

- Dosis Pengobatan 100%
- Dosis Pemeliharaan/Perawatan 50%

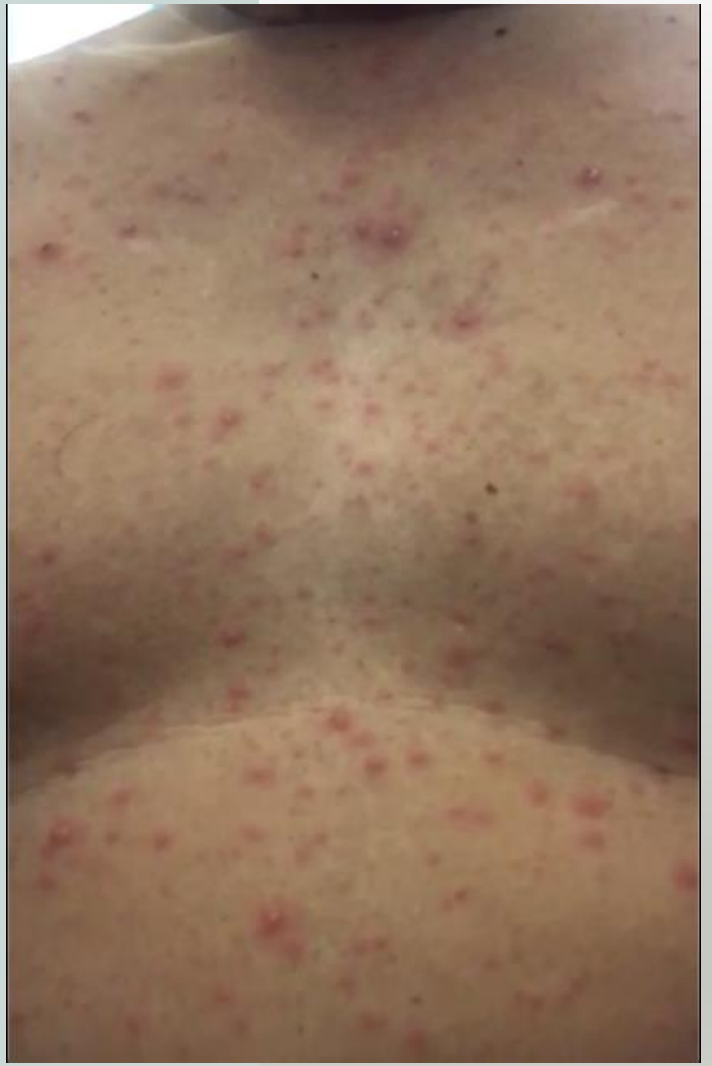
Dari dosis yang tercantum pada label, sangat disarankan mulai konsumsinya dengan dosis yang paling ringan. Artinya, **JANGAN LANGSUNG** masuk ke Dosis Pemeliharaan/Perawatan apalagi ke Dosis Pengobatan.

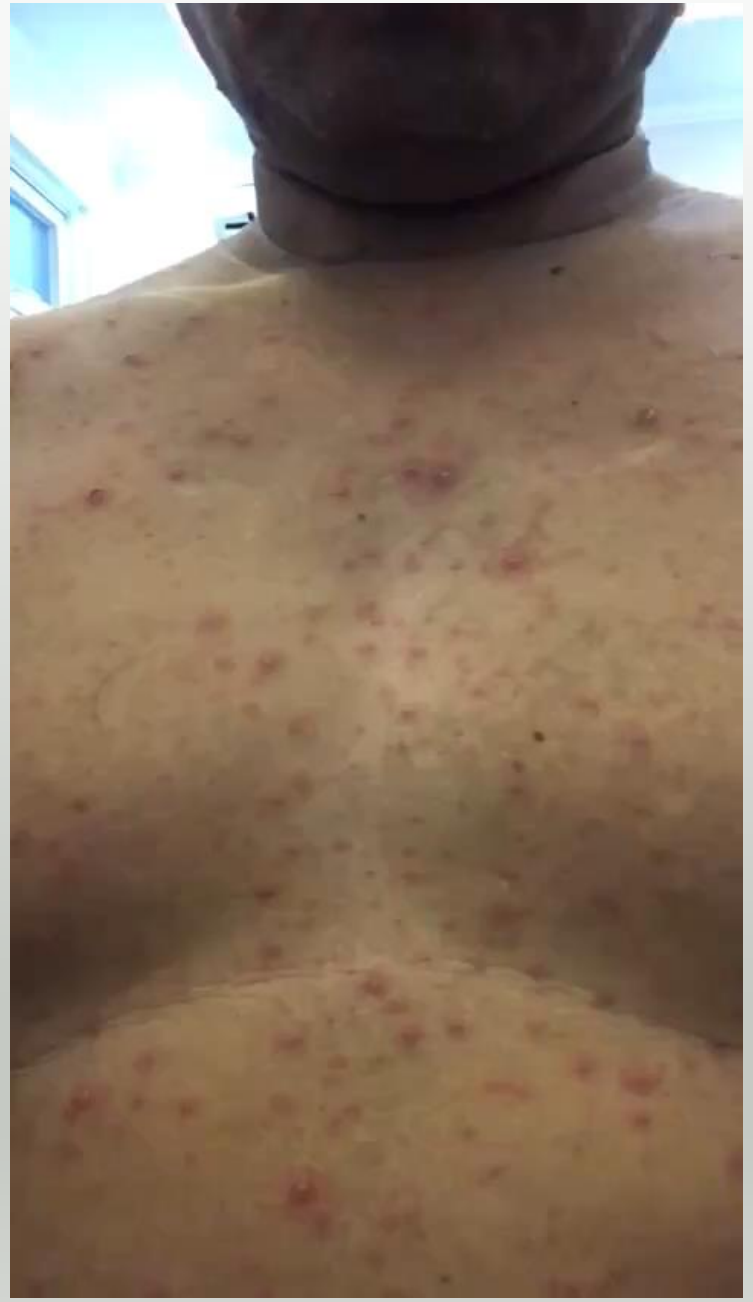
Prinsip Herbalogi
Proses 4R : Release (Mengeluarkan)

Mengatur Pemberian Dosis Obat Herbal:

- Dosis Super Ringan 12,5%
- Dosis Ringan 25%
- Dosis Pemeliharaan 50%
- Dosis Pengobatan 100%

RELEASE





RELEASE


Kaka Mirah Nia
Hari ini
Teh nia.... Gimana kondisi nya? 05.44
Alhamdulillah sehat umi 08.05
Lambung nya enakan 08.06
Alhamdulillah 08.06
BAK 08.06
lancar kah 08.06
Alhamdulillah 08.06
Anda
BAK
Air seni 08.06
Senin mau cek darah dulu umi 08.06
Anda
Air seni
Lancar tp malam banyak pipis 08.07
Kaka Mirah Nia
Lancar tp malam banyak pipis
Masih blm normal 08.07
Lanjutkan ya.. Agar normal 08.07


Haii
Herbal Amanah Impian Indonesia
BIO ALMEIRA
KuTelaw
GAMASY Gamat
PRIMUNOGA
TESTIMONI PASIEN INFEKSI SALURAN KEMIH DAN GERD... SETELAH KONSUMSI KUTELAW, BIO ALMEIRA, GAMASY GAMAT PLUS PRIMUNOGA....

Tabel Dosis Produk

No	Nama Produk	Super Ringan	Ringan (hari ke 1-3)	Perawatan (hari ke 4-7)	Pengobatan (hari ke 8 dst)	Ditingkatkan	Ditingkatkan	Keterangan
		(12,5%)	(25%)	(50%)	(100%)	(200%)	(300%)	
1	Kuwagis	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	
2	Jaka Lanang	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	
3	Osyatusan	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	
4	Renkho	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	
5	Apiquna	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	
6	Aragin	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	
7	Sebagin	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	
8	Mitolikan	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	

Tabel Dosis Produk

No	Nama Produk	Super Ringan	Ringan (hari ke 1-3)	Perawatan (hari ke 4-7)	Pengobatan (hari ke 8 dst)	Ditingkatkan	Ditingkatkan	Keterangan
		(12,5%)	(25%)	(50%)	(100%)	(200%)	(300%)	
9	Curcutama Maximun	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2-3x sehari	2-3x sehari	
10	Wangita	1 kapsul	1 Kapsul	2 Kapsul	2 Kapsul	3 Kapsul	3 Kapsul	Sebelum makan
		per 2 hari	2x sehari	2x sehari	3x sehari	3x sehari	4x sehari	
11	Wasir Ungu	1 kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	3 Kapsul	Sebelum makan
		per 2 hari	2x sehari	3x sehari	3x sehari	4x sehari	4x sehari	
12	Anceria	1 kapsul	1 Kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	2x sehari	2x sehari	3x sehari	
13	Kutelaw	1 kapsul	1 Kapsul	1 Kapsul	2 Kapsul	2 Kapsul	3 Kapsul	Sebelum makan
		per 2 hari	2x sehari	3x sehari	3x sehari	4x sehari	4x sehari	
14	Glowtagen C	1 kapsul	1 Kapsul	1 Kapsul	1 kapsul 4x sehari	2 Kapsul	2 Kapsul	Sebelum makan
		per 2 hari	1x sehari	2x sehari	3x sehari	2x sehari	3x sehari	
15	Primunoga (Dilarutkan dalam air)	2 tetes	2 tetes	3 tetes	6 tetes	10 tetes	12 tetes	Dilarutkan dalam air hangat 150 ml, aduk berlawanan jarum jam (sebelum makan)
		1x sehari	2x sehari	2x sehari	3x sehari			
16	Primunoga (Dibawah lidah)	1 tetes	1 tetes	2 tetes	2 tetes	3 tetes	3 tetes	Sebelum makan
		1x sehari	2x sehari	2x sehari	3x sehari			

Tabel Dosis Produk

No	Nama Produk	Super Ringan	Ringan	Perawatan	Pengobatan	Ditingkatkan	Ditingkatkan	Keterangan
		(12,5%)	(hari ke 1-3) (25%)	(hari ke 4-7) (50%)	(hari ke 8 dst) (100%)	(200%)	(300%)	
17	Bio Almeira (dilarutkan dalam air)	1 tetes 1x sehari	1 tetes (2x sehari)	2 tetes (2x sehari)	2 tetes (3x sehari)	3 tetes (4x sehari)	3 tetes (4x sehari)	Dalam 250 ml air, aduk berlawanan jarum jam (sebelum makan)
18	Mogarlia (dilarutkan dalam 150ml air hangat)	2 sachet 1x sehari	2 sachet 2x sehari	2 sachet 3x sehari	3 sachet 3x sehari	4sachet 3x sehari	6 sachet 3x sehari	Sesudah makan
19	Mogarlia (langsung diminum)	1 sachet 1x sehari	1 sachet 2x sehari	1 sachet 3x sehari	2 sachet 3x sehari	2 sachet 4x sehari	4 sachet 3x sehari	Sesudah makan
20	Kohe Pusaka	2 sachet per 2 hari	1 sachet 1x sehari	1 sachet 2x sehari	1 sachet 4x sehari	2 sachet 4x sehari	-	Diseduh dalam 150 ml air hangat, aduk berlawanan jarum jam (sebelum makan)
21	Gamasy Gamat (Dewasa)	1/2 tablet 1x sehari	1 tablet 1x sehari	1 tablet 2x sehari	2 tablet 3x sehari	3 tablet 3x sehari	4 tablet 3x sehari	Sebelum makan
22	Gamasy Gamat (Anak > 6 bulan)	1/4 tablet 1x sehari	1/2 tablet 1x sehari	1 tablet 2x sehari	1 tablet 3x sehari	2 tablet 3x sehari	-	Sebelum makan

PERALIHAN PEMAKAIAN OBAT KIMIA KE OBAT HERBAL

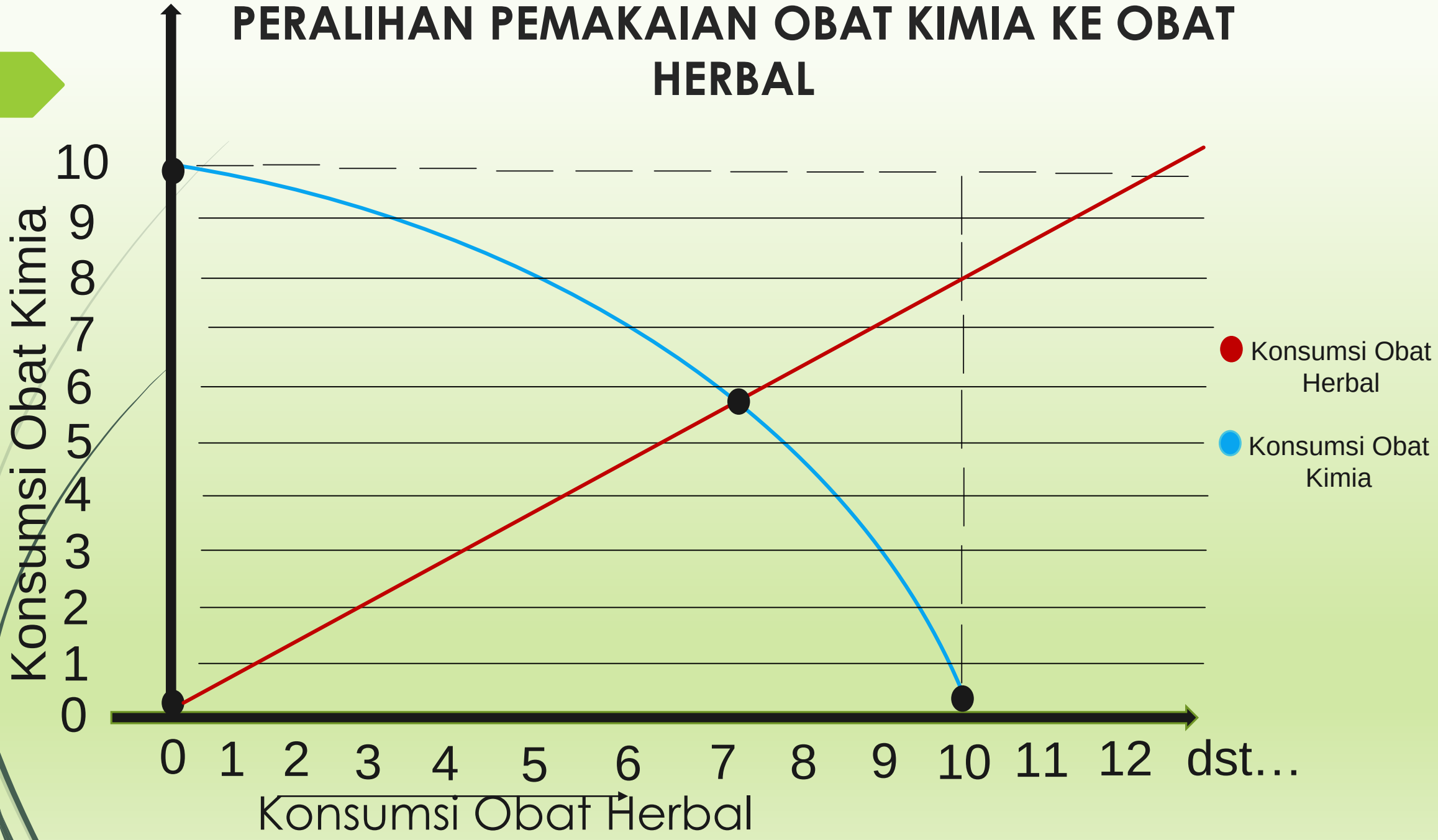
Jika seorang Pasien yang mengidap penyakit Kronis atau Degeneratif dan sedang mengkonsumsi obat kimia sintesis, maka dalam mengkonsumsi obat herbal sebagai pendamping pengobatannya agar obat kimia sintesisnya tidak/jangan langsung dihentikan 100% (stop sama sekali).

Disarankan agar terlebih dahulu menaikkan Dosis Obat Herbalnya sampai ke Dosis Perawatan atau ke Dosis Pengobatan dengan syarat proses Detoksifikasi yang ditimbulkan oleh obat herba itu sudah terjadi dan Pasien masih bisa menjalani proses Detoksifikasi tersebut dengan nyaman.

Pada saat itu barulah dengan permintaan Pasien sendiri untuk menurunkan Dosis Obat Kimia Sinstesisnya secara pelan dan bertahap sampai dengan 25%-20% dosisnya. Pada saat posisi 25%~20% tersisa konsumsi Obat Kimia Sintesisnya maka konsumsi Obat Herbalnya bisa dinaikkan lagi.

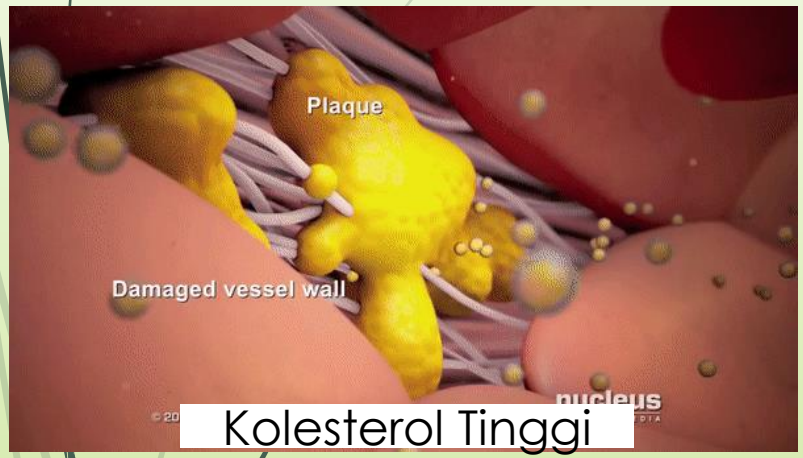
Dengan kata lain pada saat menurunkan dosis obat kimia secara perlahan maka dosis obat herbanya juga dinaikkan secara perlahan sehingga nanti obat kimia sintesis tersebut benar-benar bisa digantikan oleh obat herba 100%. Lebih baik lagi proses penghentian konsumsi obat kimia sintesis ini atas benar-benar kehendak Pasien (bukan kita sebagai Perawat) karena yang mengetahui kondisi tubuh Pasien dalam konsumsi obat-obatanya adalah Pasien itu sendiri.

PERALIHAN PEMAKAIAN OBAT KIMIA KE OBAT HERBAL



Mengapa Mengkonsumsi Obat Herbal Sembuh Lebih Lama atau Tidak Sembuh?

Dosis Pengobatan
100%



Kolesterol Tinggi


Asam Lambung Tinggi


Kadar Gula Tinggi

Disembuhkan hanya
33,33%

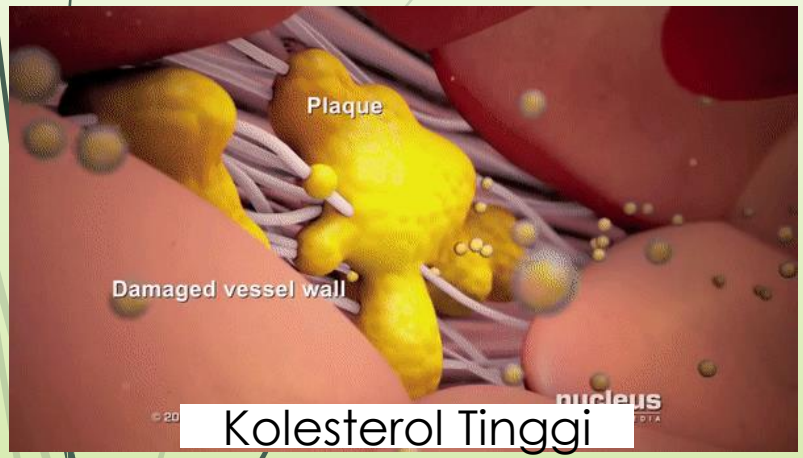
Disembuhkan hanya
33,33%

Disembuhkan hanya
33,33%

Mengkonsumsi Obat Herbal Bisa Sembuh

Pengaturan Dosis

Dosis Perawatan 50% ~> 100% ~> 150% ~> 200% ~> 250% ~> 300% Dosis Ditingkatkan



Kolesterol Tinggi


Asam Lambung Tinggi


Kadar Gula Tinggi

Disembuhkan 100%

Disembuhkan 100%

Disembuhkan 100%

Detoksifikasi (Healing Crisis)

Disebut juga Tindak Balas ke Arah Penyembuhan atau Direction of Cure (DOC) adalah proses PENGELUARAN racun (Virus atau Bakteri atau Radikal Bebas atau Oxidant atau Logam Berat dan racun lainnya) dari dalam tubuh Pasien.

Proses Detoksifikasi itu bisa macam-macam. Pada dasarnya yaitu semua proses sakit yang pernah terjadi itu namun itu diabaikan, maka akan muncul lagi. Misalnya dulu pernah pusing-pusing, pernah sesak napas, pernah merasa dadanya panas, pernah muntah-muntah, pernah batuk berdarah, pernah demam dan menggigil, pernah tidak bisa tidur (insomnia), pernah mimisan (hidung berdarah), pernah sakit perut hebat, pernah BAB dan BAK terus-menerus (bahkan BAB berdarah), pernah biduran, pernah bengkak atau bisulan atau jerawatan pada bagian kaki, bagian badan, bagian muka, bagian leher, pernah keluar nanah atau cairan pada/dekat bagian organ yang sakit, pernah terjadi perubahan waktu siklus haid, pernah keputihan hebat, ... yang dulu itu diabaikan oleh Pasien maka proses gejala-gejala tersebut akan muncul lagi. Itulah yang disebut proses Detoksifikasi atau proses Tindak Balas ke Arah Penyembuhan.

Jadi setelah kita konsumsi obat herba, seolah-seolah penyakit kita semakin parah, padahal sedang berproses Tindak Balas ke Arah Penyembuhan, yang mana justru jika Pasien mengalami proses Detoksifikasi maka obat herbanya tetap dikonsumsi (walaupun Dosisnya itu dikurangi).

Tanda-tanda positif setelah mengkonsumsi obat herbal (Healing Crisis) :

1. Demam ringan, mual akibat proses pembuangan toksin dalam tubuh (detoksifikasi) dan proses perlawanan infeksi tubuh.
2. Muntah, diare (BAB terus menerus) akibat proses pembuangan toksin dalam usus.
3. Sembelit, tinja berwarna gelap akibat proses pembuangan racun tubuh melalui usus.
4. Banyak keringat dan berbau akibat detoksifikasi kelenjar keringat pada penderita kegemukan dan ketidakseimbangan hormon.
5. Masalah jerawat, komedo alergi kulit, gatal, kemerahan akibat pembuangan toksin melalui kulit.
6. Sakit otot, nyeri badan terutama pada penderita asam urat.
7. Tekanan darah yang tidak stabil baik pada penderita tekanan darah tinggi maupun penderita tekanan darah rendah.
8. Pendarahan lebih banyak dan berwarna pekat ketika datang bulan sebagai reaksi detoksifikasi pada saluran reproduksi.
9. Pendarahan seperti menstruasi pada wanita menopause yang merupakan reaksi pembersihan organ reproduksi.
10. Keputihan sebagai reaksi perlawanan infeksi pada organ kewanitaan.
11. Kadar gula darah tidak stabil atau meningkat, mual pada penderita diabetes yang merupakan reaksi pengaktifan kembali Organ Pankreas.
12. Pembengkakan badan, tangan, kaki, sering buang air seni terutama pada penderita ginjal dan diabetes yang merupakan reaksi upaya tubuh mengeluarkan kelebihan zat dan racun dalam tubuh.
13. Buang air seni turut keluar pecahan batu pada penderita batu ginjal.
14. Rasa mual yang hebat, gatal di sekujur tubuh, susah tidur, kecemasan, demam, kram, nyeri, pada penderita tumor dan kanker yang merupakan tanda perlawanan tubuh terhadap sel tumor kanker.

Reaksi-reaksi tersebut memang menimbulkan ketidaknyamanan dan berbeda-beda pada setiap orang sebagai tanda awal perbaikan kondisi tubuh.

PRINSIP HERBALOGI :

PROSES (4R)

- **Relax (Mengistirahatkan)**

Teori Konsumsi Obat Herbal : 6 – 1 - 6 -1 – 6 , dst.
(khusus untuk Dosis Pengobatan & Ditingkatkan)

- **6 minggu**: Mengkonsumsi obat herba
  - proses menaikkan Dosis
  - proses memperhatikan Detoksifikasi
- **1 minggu**: JEDA (istirahat konsumsi obat herba)
  - perbaiki Pola Makan/Minum
  - perbaiki Pola Hidup
  - perbaiki Pola Pikir

Prinsip Herbalogi
Proses 4R : Regenerasi (Mengganti dengan yang baru)

Pemulihan sel – sel tubuh yaitu :

- Tidur Nyenyak (Deep Sleep)
- Berdoa
- Energi dan Keinginan Berolah Raga
- Kulit Lebih Cerah

REGENERATION

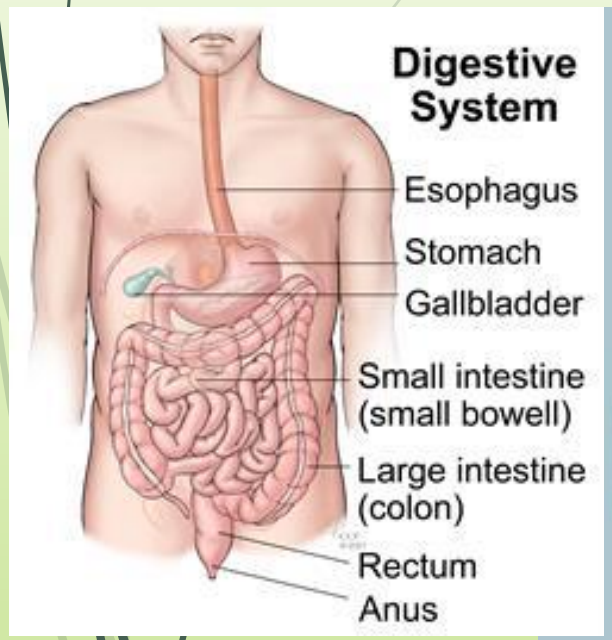
REGENERATION

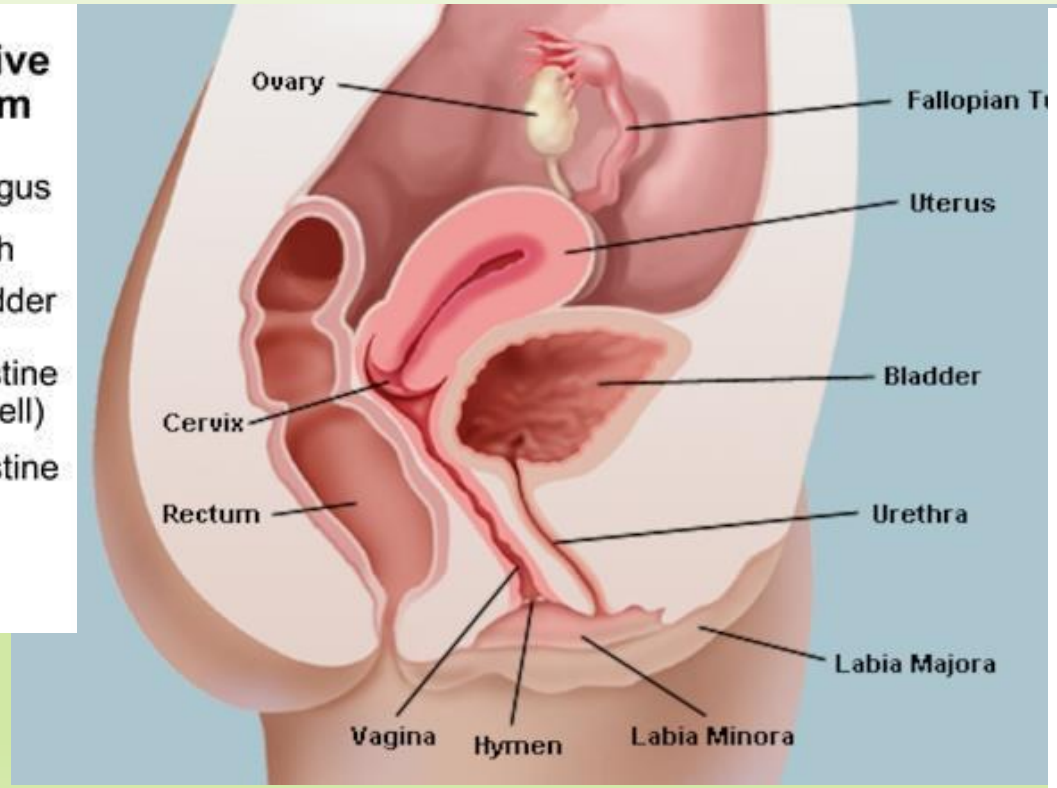
REGENERATION

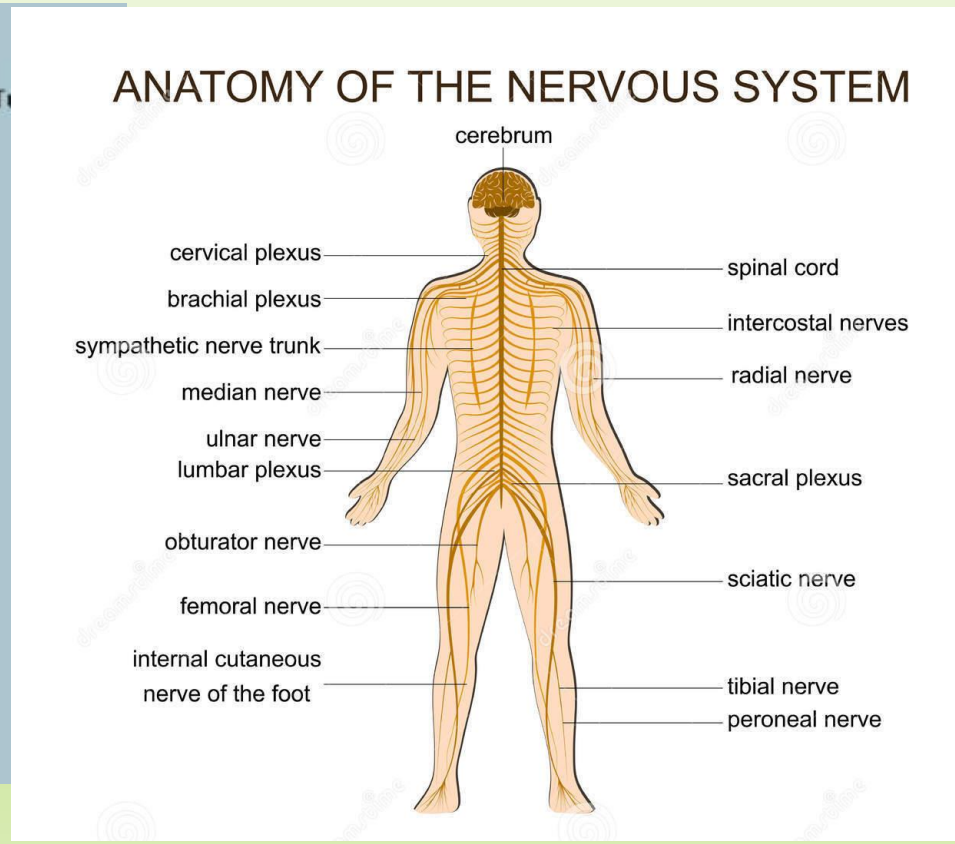
PRINSIP HERBALOGI :

PROSES (4R)

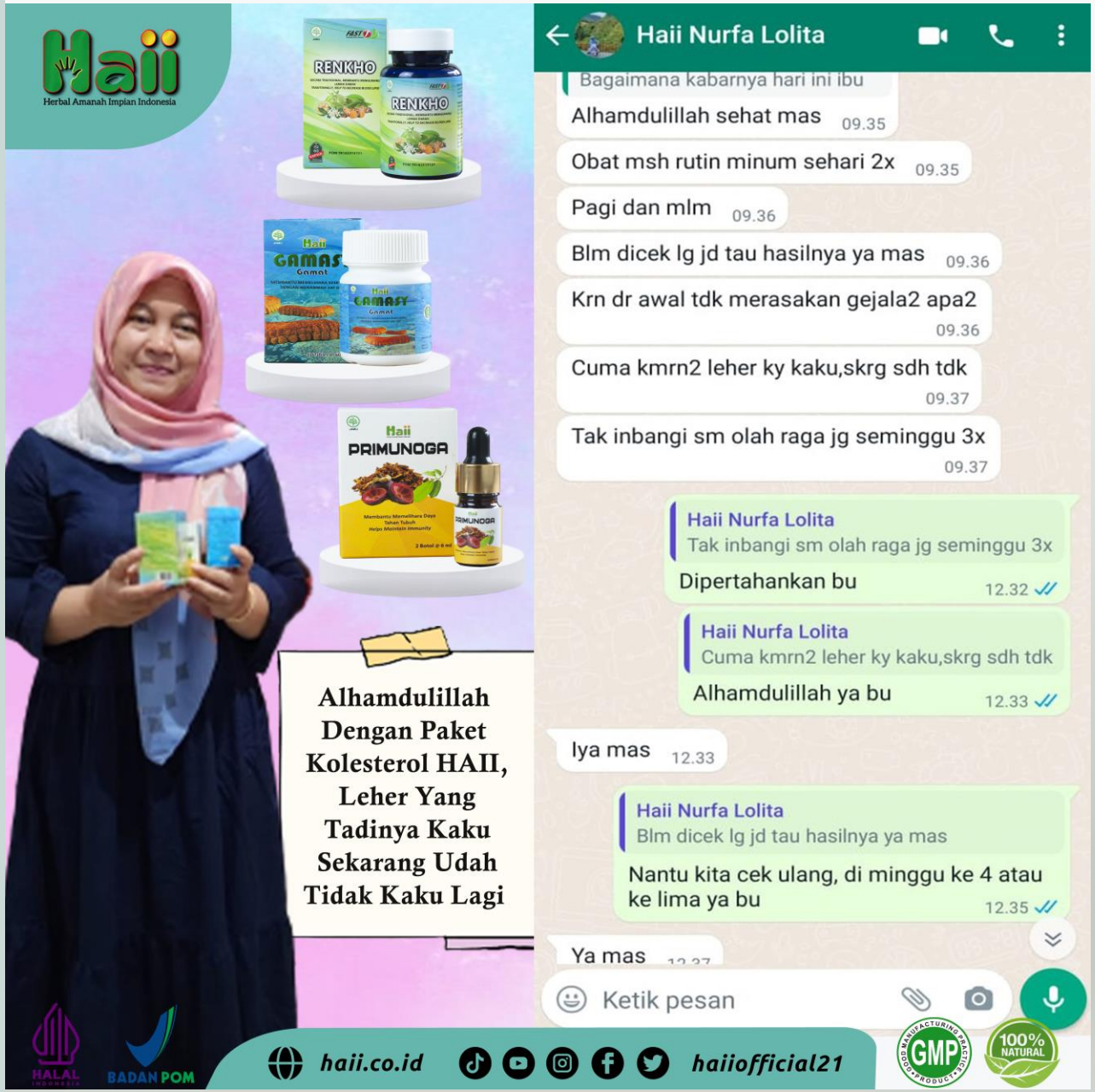
- Refunction (Mengfungsikan Kembali)







REFUNCTION


Haii
Herbal Amanah Impian Indonesia
RENKHO
GAMAS
PRIMUNOGA
Alhamdulillah Dengan Paket Kolesterol HAII, Leher Yang Tadinya Kaku Sekarang Udah Tidak Kaku Lagi
HALAL INDONESIA
BADAN POM
haii.co.id
haiiofficial21
GMP
100% NATURAL
Haii Nurfa Lolita
Bagaimana kabarnya hari ini ibu
Alhamdulillah sehat mas 09.35
Obat msh rutin minum sehari 2x 09.35
Pagi dan mlm 09.36
Blm dicek lg jd tau hasilnya ya mas 09.36
Krn dr awal tdk merasakan gejala2 apa2 09.36
Cuma kmrn2 leher ky kaku,skrg sdh tdk 09.37
Tak inbangi sm olah raga jg seminggu 3x 09.37
Haii Nurfa Lolita
Tak inbangi sm olah raga jg seminggu 3x
Dipertahankan bu 12.32
Haii Nurfa Lolita
Cuma kmrn2 leher ky kaku,skrg sdh tdk
Alhamdulillah ya bu 12.33
Iya mas 12.33
Haii Nurfa Lolita
Blm dicek lg jd tau hasilnya ya mas
Nantu kita cek ulang, di minggu ke 4 atau ke lima ya bu 12.35
Ya mas
Ketik pesan

REFUNCTION


Haii
Herbal Amanah Impian Indonesia
Merasakan Sakit
dibawah
Ketiak Kanan
dan Pinggang
Dengan Meminum
APIQUNA dan
GAMASY GAMAT
2 Hari Sakitnya
Membaik
APIQUNA
GAMASY GAMAT
Etty Suniarti
online
Sudah beberapa hari ini saya merasakan sakit2 yang luar biasa di bawah ketiak kanan sampai pinggang sampai nangis2 gak tahan...
Ketika saya setelah solat Isya ingat bh Rina yang meresonancy saya disarankan minum apiquna..
Diresonancy juga hari kamis terasanya malam terasanya hari sabtu malam minggu saya langsung minum apiquna...baru 2 hari Alhamdulillah Allah SWT maha baik..semoga sembuh dn tambah sehat...Aamiin Allahumma Aamiin
20.42
0.15
20.49
Alhamdulillah setelah minum 2 hari sakitnya membaik dengan ijin Allah Masya.Allah
20.56
Alhamdulillah bener2 rasa membaik
HALAL INDONESIA
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GMP
100% NATURAL


Haii
Herbal Amanah Impian Indonesia
PENCEGAHAN PENYAKIT
LAMBUNG TINGGI
MAAG/GERD
KUTELAW
GAMASY GAMAT
BIO ALMEIRA
Alhamdulillah puasa lebih enakan ga kayak puasa sebelumnya, kondisi aku yg sedang menyusui & ngurusin bayi tapi aman -aman aja malahan ASI juga banyak kayak lagi ga puasa.
Ayu Ppa
Sipp dtunggu 13.26
Teh udh 3hari ini puasa tiap berbuka sama saur aku minum paket asam lambung ditambahin madu habbatusauda krn cuman itu yg boleh diminum sm aku yg lg ngAsi, Alhamdulillah puasa lbh enakan ga kyk puasa sebelum2nya yg lumayan perih tp skrng masih batas normal energi tenaga juga ga lemes2 banget bahkan dgn kondisi aku yg lg menyusui n ngurusin bayi tp aman2 aja malahan asi juga banyak kyk lg ga puasa pdhl udah siang gini, itu paket asam lambungnya ngaruh kali ya ke asi :D
Niatnya mh biar perut lbh enak aja saat jalanin puasa tp dapet plusnya krn stok asi aman buat umar hehe
13.42
Ayu Ppa
Teh udh 3hari ini puasa tiap berbuka sama saur aku minum paket asam lambung ditambahin madu habb...
Alhamdulillah smoga makin sehat
HALAL INDONESIA
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BADAN POM
100% NATURAL

Cara Sehat Ala Thibbun Nabawi

- Cara Mandi dan Bersiwak (Sikat Gigi)
- Cara Makan
- Cara Cebok
- Cara Tidur
- Cara Mengaduk Makanan/Minuman
- Mandi Hujan (Ion Negatif)

Cara Sehat Ala Thibbun Nabawi

Cara Mandi dan Bersiwak (Sikat Gigi)

1. Membasahi mulai dari Kaki sampai lutut
2. Basahi dari lutut sampai Pinggang
3. Berhenti dahulu silakan bersiwak atau sikat gigi
4. Setelah sikat gigi lanjutkan basahi pinggang sampai leher
5. Kemudian menggosok badan dengan sabun dari leher sampai jari kaki
6. Basahi bagian kepala termasuk ubun-ubun dan bershampo
7. Bilas seluruh badan dari kepala sampai jari kaki

Dari urutan diatas, kita membasahi dari bagian bawah terlebih dahulu agar angin yang ada di badan kita dan sendi-sendi serta buku-buku pada tulang kita itu perlahan menguap dan bagian kepala dibasahi paling akhir karena ubun-ubun dibagian kepala merupakan tutup saluran angin tubuh kita. Sehingga dengan demikian tidak ada angin yang terjebak pada sendi dan buku-buku tubuh kita Jika kita membasahi air yang terbalik (kepala terlebih dahulu dan kaki paling akhir maka bisa dipastikan angin tubuh kita akan terjebak pada sendi-sendi dan buku-buku yang bisa menyebabkan Reumatik, Asam Urat, Osteoporosis dan Arthritis)

Cara Sehat Ala Thibbun Nabawi

Cara Makan

Makanlah dengan menggunakan tangan kanan dan 3 jari (ibu jari, jari telunjuk dan jari tengah) karena pada jari tersebut ada enzim Rnase yang dapat membantu proses pembusukan atau menekan aktifitas bakteri phatogen dalam tubuh, sebelum masuk ke proses mekanisasi ke dalam mulut/gigi.

Di dalam mulut ada air liur yang mengandung enzim amilase. Seperti diketahui enzim merupakan komponen penting yang diperlukan untuk proses pencernaan dan penyerapan makanan. Tanpa bantuan enzim, semua nutrisi makanan yang masuk ke tubuh hanya akan mudah terbuang (tidak diserap Pencernaan) menjadi feces.

Sehingga disarankan untuk makan dengan tangan kanan dan 3 jari tangan kanan

Cara Sehat Ala Thibbun Nabawi

Cara Cebok

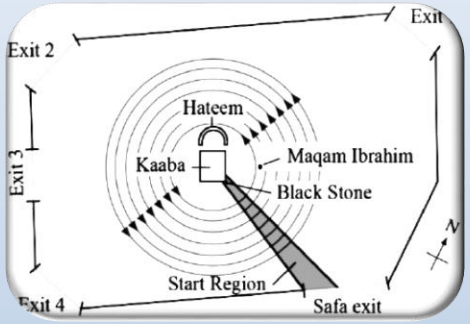
Menggunakan tangan kiri karena pada jari-jari tangan kiri terdapat zat disinfektan alami, sehingga dapat membantu membersihkan kotoran (proses cebok) dengan bersih (terhindar dari najis)

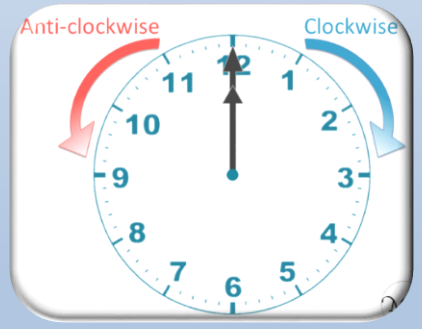
Cara Sehat Ala Thibbun Nabawi

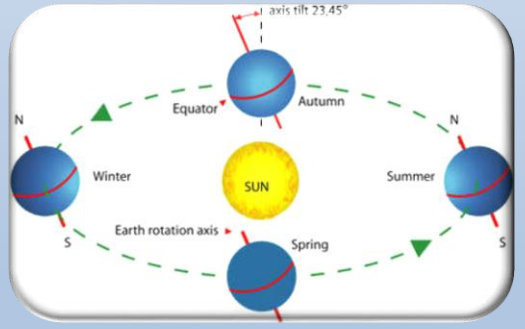
Cara Tidur

Berbaringlah saat tidur menghadap sebelah kanan karena jantung kita ada di sebelah kiri (atas), sehingga jantung tidak tertekan dan sirkulasi darah menjadi lancar, saat mulai tidur usahakan posisi organ jantung selalu ada dibagian atas.

Cara Sehat Ala Thibbun Nabawi







Cara Mengaduk Makanan/Minuman

Cara mengaduk makanan dan minuman kebalikan arah jarum jam (anti clock-wise) karena partikel yang ada pada makanan (zat aktif) tidak terbuang, nutrisi (zat aktif) akan diperbaiki yang ada pada makanan atau minuman sehingga tidak berkurang kualitasnya.

Cara ini seperti bulan mengelilingi bumi, bumi mengelilingi matahari, matahari mengelilingi bimasakti juga kebalikan arah jarum jam (anti clock-wise) bersamaan itu juga sama seperti Gerakan tawaf dari kanan ke kiri.

Cara Sehat Ala Thibbun Nabawi

Ion Negatif

Mandi Hujan

Air hujan sangat bagus bagi kesehatan organ reproduksi.

Sumber air yang baik di bumi ini ada 3 yaitu air zam-zam, air kelapa dan air hujan.

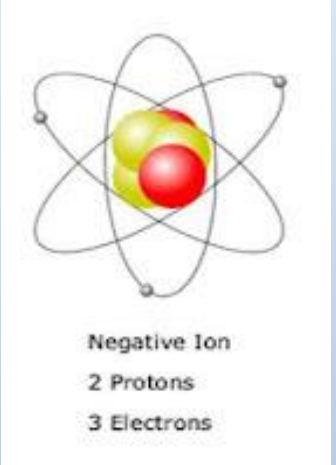
Jadi biarkan anak-anak kita mandi hujan untuk memperbaiki reproduksi dan meningkatkan antibodi, air hujan itu salah satu sebagai keberkahan.

Namun caranya tetap dengan proses seperti mandi, basahi dulu bagian bawah keatas baru ke kepala.

PEMAKAIAN AC YANG BENAR

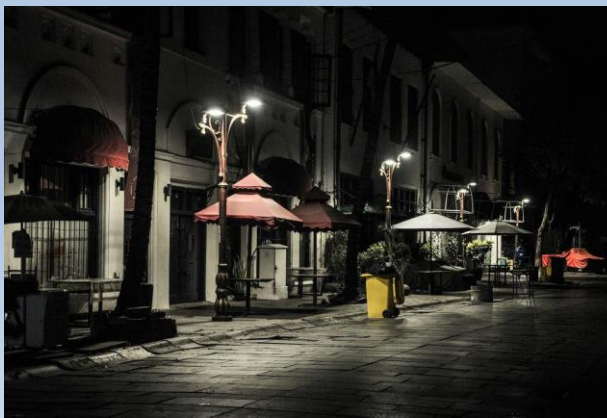
Sebagian kediaman rumah tangga saat ini terpasang AC (Air Conditioning), sering kali AC tersebut dipakai pada malam hari di saat kita tidur. Seperti yang kita ketahui pada saat bumi berotasi, terdapat banyak kandungan ion negatif antara jam 03.00 sampai jam 05.00 pagi.

Ion negatif sangat bermanfaat bagi kesehatan, seperti meningkatkan imunitas dengan meningkatkan kerja linfa, meningkatkan aktivitas mental dan fisik serta mengurangi kelelahan dengan menguraikan asam laktat. Selain itu, meningkatkan konsentrasi dan produktivitas kerja, mengatasi stress, memperbaiki kualitas tidur, dan mencegah kanker paru, serta mendetoksifikasi sistem tubuh.



“Tidak hanya itu, ion negatif juga dapat mengatasi penyakit yang disebabkan alergi polusi udara dan asma.

Sangat disarankan untuk memasang timer hanya sampai jam 3.00 pagi, karena saat jam 3.00 – 5.00 pagi ion negatif di sekitar kita sangat melimpah.



PENGOBATAN Herba vs Kimia Sintesis

Pengobatan Herba Alami

- Berasal dari Timur.
- Menggunakan bahan alami.
- Bersifat probiotik.
- Meningkatkan imunitas tubuh
- Bersifat holistik (menyeluruh).
- Mengobati sumber penyakit (causative treatment).
- Tidak ada efek samping (yang ada reaksi positif atau DOC).
- Mengandung vitamin, mineral dan nutrisi.
- Berkesan lambat tetapi konstruksif.

Pengobatan Kimia Sintesis

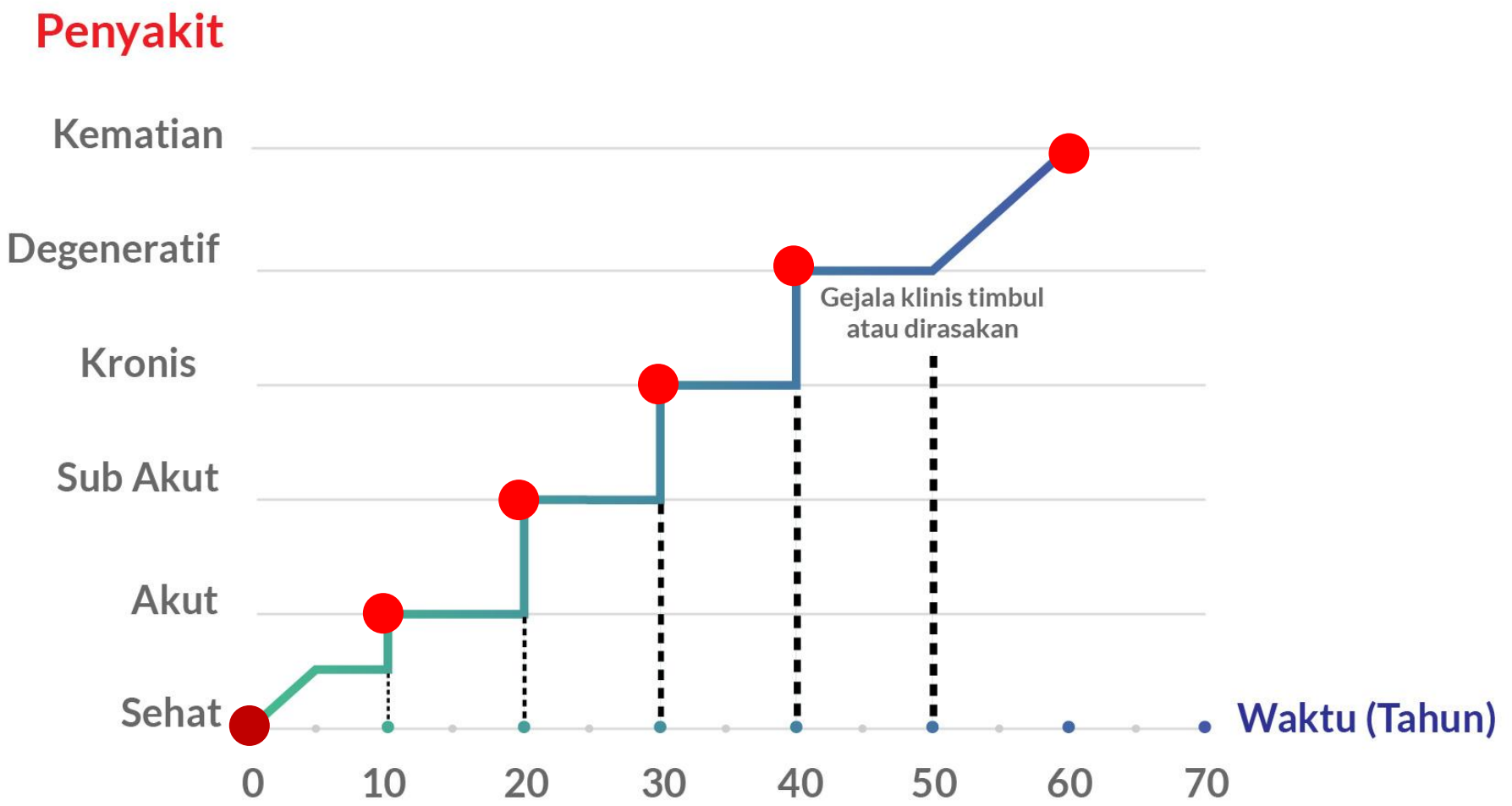
- Berasal dari Barat.
- Menggunakan bahan sintesis (isolat).
- Bersifat antibiotic (racun).
- Menurunkan imunitas tubuh .
- Mengobati gejala penyakit (symptomatic treatment).
- Ada efek samping .
- Memiliki kesan lebih cepat tetapi desktruktif.

Dalam Mengkonsumsi Obat Herba, Proses Utama yang dilakukan adalah:

- Membuang bahan beracun yang menyebabkan organ tidak berfungsi yaitu dengan proses Detoksifikasi (Direction of Cure atau Healing Crisis atau Tindak Balas ke Arah Penyembuhan).

- Apabila proses pengeluaran racun atau Detoksifikasi (DOC atau Healing Crisis atau Tindak Balas ke Arah Penyembuhan) sudah terlaksana maka kandungan bahan bahan aktif obat herba itu bisa diserap tubuh dengan baik (jadi konsumsi obat herbanya harus diteruskan walaupun dengan Dosis Perawatan atau Dosis Ringan).

PROSES/SIKLUS TERJADINYA PENYAKIT



Proses/Siklus Terjadinya Penyakit (lanjutan)

Peringkat Pertama/Kondisi Awal (Sering Diabaikan)

- Jerawat, Bisul
- Napas Bau
- Sembelit
- Pusing-pusing, Migrain
- Alergi
- Sakit Kulit, Biduran
- Dada Panas, Batuk-batuk (berdarah)
- Sesak Napas
- Muntah-muntah (berdarah)
- Insomnia
- BAB & BAK terus-menerus
- Haid sakit/tidak teratur & Keputihan
- Keluar Nanah
- dll

Peringkat Kedua/Kondisi Berikutnya (Maka Timbul Penyakit Serius)

- Tekanan Darah Tinggi/Rendah
- Asam Urat/Rematik/Kolesterol
- Kerusakan/Gagal Ginjal
- Kencing Manis (Diabetes)
- Kerusakan Liver (Hepatitis)
- Hiperplasia endometrium/Endometriosis
- Miom, Kista, Tumor Rahim
- Stroke/Paralize
- Lupus
- Batu Empedu, Batu Ginjal, Kencing Batu
- Ambeien (Wasir atau Hemoroid)
- Kanker
- dll

Proses/Siklus Terjadinya Penyakit (lanjutan)

Apabila kita merawat penyakit yang Peringkat Kedua/Kondisi Berikutnya,
maka akan menyebabkan berlakunya kembali gejala Peringkat Pertama/Kondisi Awal

Jerawat

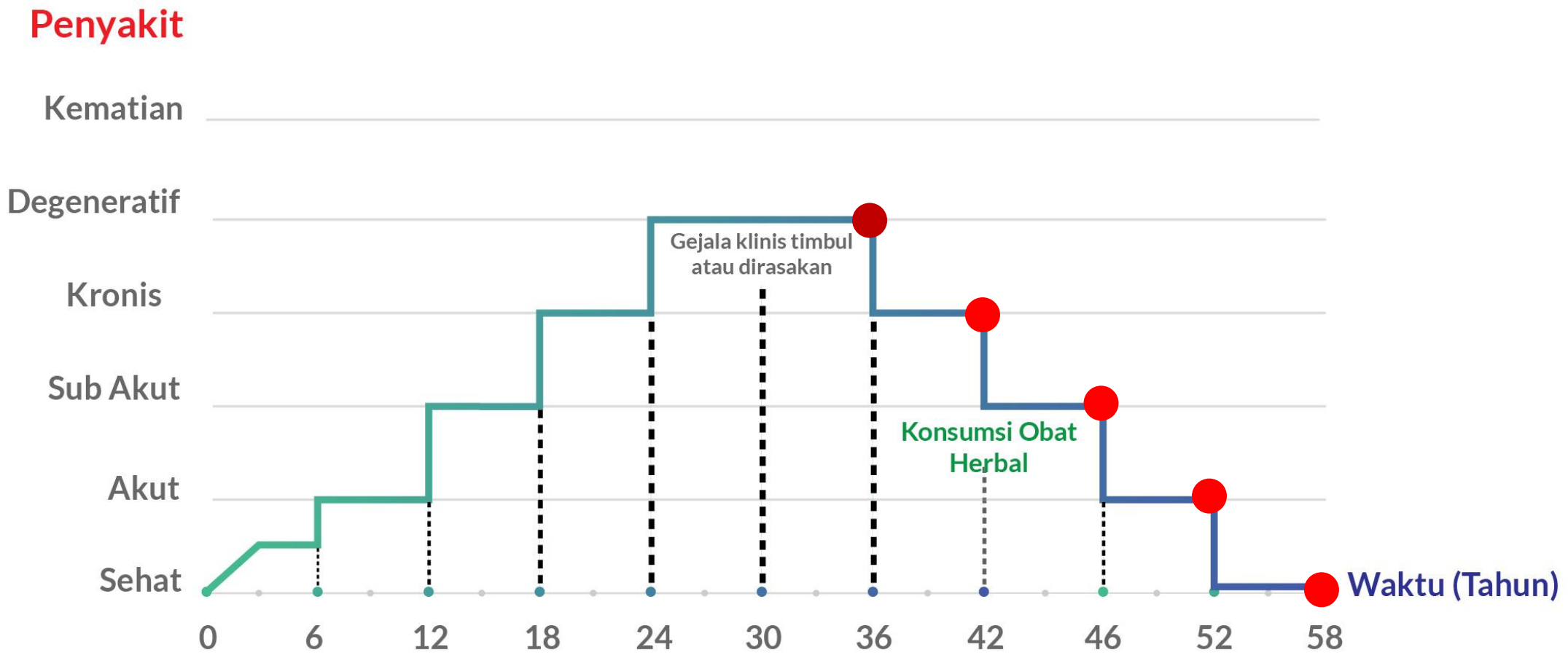
Migrain

Gatal dan Alergi

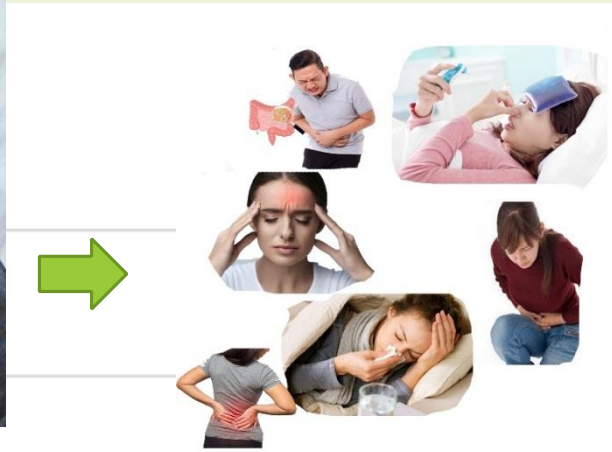
Sembelit

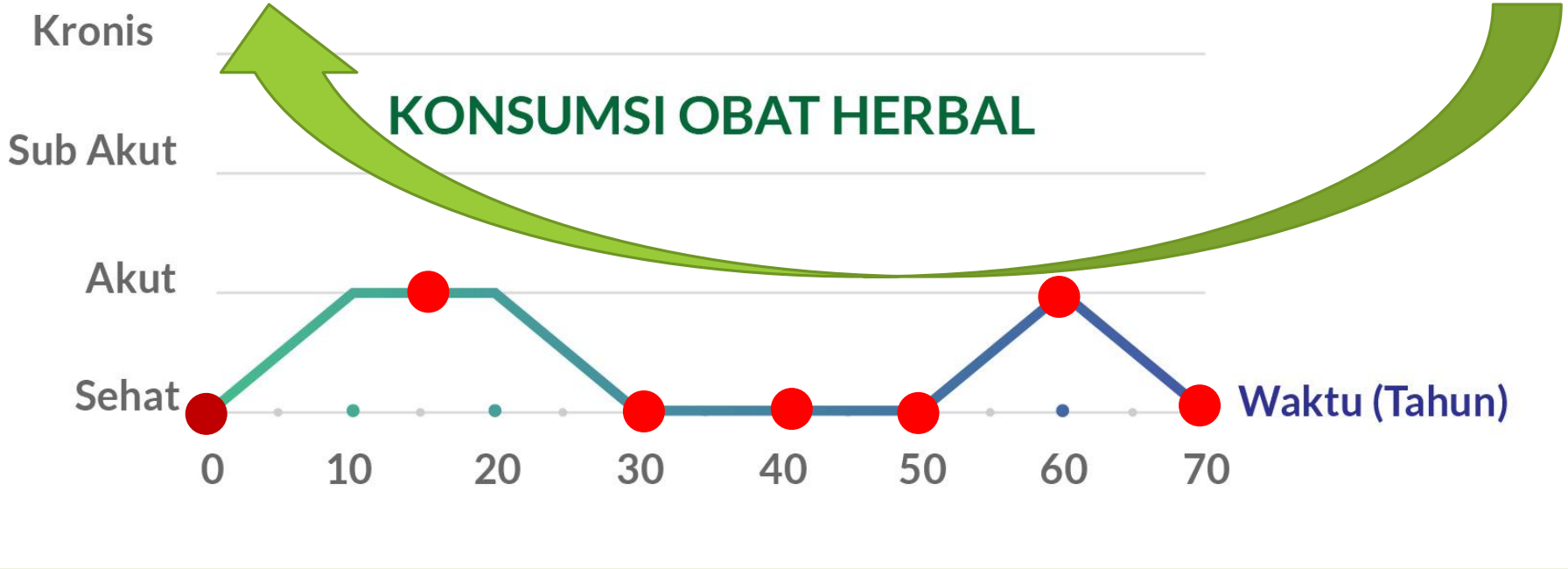
Bau Mulut

PROSES/SIKLUS TERJADINYA PENYEMBUHAN



PROSES/SIKLUS KESEHATAN YANG TERJAGA





Lebih Baik Mencegah Daripada Mengobati

Terkadang, Sehat Terlihat MURAH.

Namun, Kalau Sudah Sakit akan Sangat MAHAL !