

# Prof. Ir. T. Sabrina, M.Agr.Sc., Ph.D

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*Prof. Ir. T. Sabrina, M.Agr.Sc., Ph.D., born in Medan on June 20, 1964, is an Agrotechnology lecturer at the Universitas Sumatera Utara who is an expert in soil science.*

## Education Profile:

- Bachelor's degree from the Universitas Sumatera Utara (USU).

- Master's degree in Land Resource Management from Universiti Putra Malaysia (UPM)

- Ph.D. degree in Land Resource Management from Universiti Putra Malaysia (UPM)

*As a professor, Prof. Ir. T. Sabrina has made valuable contributions to agrotechnology development, especially in understanding and managing soil science. Her dedication to education, research, and community service reflects a commitment to improving agricultural sustainability at the Universitas Sumatera Utara.*

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## Publications

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2015

Jurnal nasional

### **Pengaruh Berbagai Komposisi Kompos Tea Terhadap Produksi Dan Kualitas Sawi (Brassica juncea L.)**

T SABRINA

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2017

Jurnal nasional

### **Dinamika Populasi Mesofauna Tanah Akibat Pemberian Beberapa Jenis dan Cara Aplikasi Bahan Organik Pada Piringan Kelapa Sawit: Dynamics of Soil Mesofauna Population Cause by**

T SABRINA

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2018

Jurnal internasional bereputasi

### **The application of microorganisms of phosphate providers and organic matters to improve the growth of Arabica coffee seedlings at Andisol in Bener Meriah Regency**

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2017

Prosiding seminar internasional

### **Evaluation Content of Pb in Phase Vegetative and Generative of Paddy by Application Azolla and Husk Biochar in Contaminated Paddy Field**

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2017

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### **Respon Pertumbuhan Tanaman Tembakau (Nicotiana tabaccum L.) Terhadap Perlakuan Perbandingan Media Tanam Top Soil, Abu Vulkanik, dan Tandan Kosong Kelapa Sawit (TKKS): The**

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Jurnal nasional terakreditasi

# **Karakteristik Tanah Dan Perbandingan Produksi Kelapa Sawit (*Elaeis Guineensis* Jacq.) Dengan Metode Tanam Lubang Besar Dan Parit Drainase 2: 1 Pada Lahan Spodosol Di Kabupaten**

T SABRINA

2020

Jurnal internasional bereputasi

## **Precocious 19th century soil carbon science**

T SABRINA

2023

Jurnal internasional bereputasi

## **Isolation and identification of phosphate solubilizing microbes in the rhizosphere of maize by sound exposure**

ASRITANARNI MUNAR , MARIANI BR SEMBIRING , PROF DR IR AHMAD RAFIQI TANTAWI. MS , T SABRINA

2005

Jurnal internasional bereputasi

## **Purification and characterization of NAD-dependent formate dehydrogenase from the white-rot fungus *Ceriporiopsis subvermispora* and a possible role of the enzyme in oxalate metabolism**

T SABRINA

2022

Prosiding seminar internasional

## **Analysis the nutrient of bio-vermicompost with different techniques applications of some microbes and earthworms**

T SABRINA , NUR ULINA WARNISYAH SEBAYANG

2016

Jurnal internasional bereputasi

## **Effect of *Burkholderia cepacia* and SP36 on available phosphate and potato production on Andisol impacted by Mount Sinabung Eruption, North Sumatera, Indonesia**

MARIANI BR SEMBIRING , T SABRINA , DENI ELFIATI

2026

Jurnal nasional

## **Aplikasi Jerami dan Paket Pemupukan terhadap Pertumbuhan dan Produksi Padi pada Pola Penanaman Intensif Applications of Paddy Straw and Fertilizer Package On Rice Growth and**

T SABRINA

2026

Book chapter internasional

## **Advances in Agronomy**

T SABRINA , DIAN FIANTIS , FRISA IRAWAN GINTING , Budiman Minasny

2009

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## **Earthworm Populations and Cast Properties in the Soils of Oil Palm Plantations**

T SABRINA

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Jurnal internasional

## **Effect of soil conditioner enriched with biofertilizers to improve soil fertility and maize (*Zea mays* L.) growth on andisols Sinabung area**

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## **Respon Pertumbuhan Bibit Bud Chip Tebu (*Saccharum officinarum* L.) Terhadap Jarak Antar Pot Tray dan Pemangkasan Daun: Response of Growth Bud Chip Seeds Sugarcane (*Saccharum***

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**Analisis Peremajaan Kawasan Kumuh Kelurahan Kampung Aur Kecamatan Medan Maimun Kota Medan**

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**Earthworm Population and Diversity in Smallholder Oil Palm Plantations under Conventional and Semi-Organic Systems in Labuhan Batu Regency**

T SABRINA , MARIANI BR SEMBIRING

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**The Impact of Compost Dose and SP36 Fertilizer Application on Soil Chemical Properties and Growth of Corn Plants (*Zea mays* L.) in Ultisol Soils**

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**Tingkat Perkembangan Tanah Berdasarkan Pola Distribusi Mineral Liat Di Kecamatan Lumbanjulu Kabupaten Toba Samosir: The level of soil development based on the pattern of clay**

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**Rekayasa Horizon Spodik Tanah Spodosol Sub Group Typic Placorthod pada Budidaya Kelapa Sawit (*Elaeis guineensis* Jacq.) di Kabupaten Barito Timur Propinsi Kalimantan Tengah**

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**Population dynamics of Azotobacter sp., Azospirillum sp., Bacillus subtilis, Talaromyces pinophilus, Trichoderma asperellum, and Syncephalastrum racemosum in the medium with &#8230;**

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**Pemetaan C-Organik Di Lahan Sawah Daerah Irigasi Pantoan Kecamatan Siantar Kabupaten Simalungun: Mapping C-Organic in Paddy Land at Pantoan Irrigation Area Subdistrict of &#8230;**

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## **Effects of earthworms, arbuscular mycorrhizae, and phosphate rock on setaria grass (*Setaria Splendida*) and phosphorus availability in soil**

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## **Potensi bakteri azotobacter dan hijauan mucuna bracteata dalam meningkatkan hara nitrogen kompos tandan kosong kelapa sawit**

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## **MODEL KERAGAAN SAYUR DAN BUAH SEBELUM DAN SESUDAH ERUPSI GUNUNG SINABUNG DI KABUPATEN KARO SUMATERA UTARA**

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## **Perbaikan Sifat Kimia Tanah Inceptisol Serta Pertumbuhan Kedelai Akibat Pemberian Kompos Diperkaya Cangkang Telur Dan Zeolit: Improvement of Inceptisol Soil Chemistry and&#8230;**

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### **Pemanfaatan jamur pelarut fosfat dan mikoriza untuk meningkatkan ketersediaan dan serapan P tanaman jagung pada tanah alkalin**

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### **Soil Tillage and Application of Organic Materials on Oil Palm Plant Disc and Their Effects on Soil Properties**

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### **Soil macrofauna diversity in andisol after eight years of Mount Sinabung eruption in Sumatra, Indonesia**

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### **Assessment of aromatic plant resistance to cadmium heavymetal through analysis of growth and physiology**

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### **Effect of sound treatment on phosphate solubilizing microbial activity**

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### **Challenge in the Identification of Water Loss, Aromatic Sense, and Preference of Chili Paste During Ozone Water Controlled Handling**

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# **PENGARUH METODE KONSERVASI PADA TANAMAN KELAPA SAWIT (*Elaeis gueneensis* Jacq) TERHADAP STATUS UNSUR HARA N, P, K DAN C-ORGANIK TANAH**

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## **Chemical Characteristics and Plant Growth Regulators of Organic Waste as Liquid Organic Fertilizer**

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## **Populasi Bakteri Tanah pada Piringan Tanaman Kelapa Sawit Akibat Pemberian Pupuk NPK Komplit: Population of Soil Bacterial in The Oil Palm's Weeded Circle Applied with NPK**

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## **Earthworms as a vector of aspergillus niger dispersal to enhance the decomposition of oil palm trunks**

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## **The contribution of oil palm plantations to prosperity and a circular economy in North Sumatra**

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## **Pengaruh Pemberian Mva (Mikoriza Vesicular Arbuskular) Terhadap Pertumbuhan Stump Karet Klon Pb 260 (*Hevea Brasiliensis* Muell Arg.) Dan Serapan Hara Pada Berbagai Kadar Air**

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## **The yield paddy of red rice and black rice on jajar legowo planting system with application of several nitrogen sources**

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## **Effect of mixed organic-inorganic fertilizer on growth and phosphorus uptake of setaria grass (*Setaria splendida*)**

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## **Study of Aromatic Plants on Cadmium Exposure Through Anatomical Structure, Shoot Root Ratio, Essential Oil and Heavy Metals**

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## **Pengaruh Mikoriza Arbuskular terhadap Pertumbuhan Tanaman *Mucuna pruriens* pada Tanah yang Dicemari Logam Berat Pb dan Cd**

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## **Effect of *Talaromyces pinophilus* and SP36 on phosphate available and potato (*Solanum tuberosum* L.) production on Andisol impacted by Mount Sinabung**

## **eruption, North Sumatera**

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### **Functional diversity of bacteria in various saline soil plant vegetations around Sialang Buah Coast, North Sumatra, Indonesia**

MARIANI BR SEMBIRING , T SABRINA , LUTHFI AZIZ MAHMUD SIREGAR

2015

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### **Peningkatan Ketersediaan Fosfat Dan Produksi Tanaman Kentang (Solanum Tuberosum L) Dengan Menggunakan Talaromyces Pinophilus Indigenous Dan Pupuk Sp36 Pada Andisol Terdampak**

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### **Tingkat Perkembangan Tanah Berdasarkan Pola Distribusi Mineral Liat Di Kecamatan Lumbanjulu Kabupaten Toba Samosir**

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### **ABSTRAK Perbanyakan tanaman tin umumnya dilakukan dengan stek batang atau cabang. Pertumbuhan stek dipengaruhi oleh faktor luar dan faktor dari dalam. Faktor luar diantaranya**

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### **Precocious 19th century soil carbon science**

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### **The effect of dispensing biochar of palm oil empty bunches and palm oil fronds on the population of soil organisms**

T SABRINA , BENNY HIDAYAT

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### **Peningkatan Kesuburan Tanah Inseptisol serta Pertumbuhan dan Produksi Kedelai Akibat Pemberian Kompos Diperkaya Cangkang Telur Ayam dan Mikroba Bermanfaat: Increased Inceptisol**

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### **APLIKASI SUPPORT VECTOR MACHINE PADA DETEKSI PENYAKIT BUSUK PANGKAL BATANG GANODERMA TANAMAN KELAPA SAWIT**

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### **Evaluasi Sifat Biologi Tanah Tanaman Kopi Arabika (Coffea arabica L.) pada Beberapa Kecamatan di Kabupaten Mandailing Natal**

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### **Growth and production response of mung bean (Vigna radiata L) by application of mycorrhiza and Penicillium sp in paddy lands**

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**PENINGKATAN KETERSEDIAAN FOSFAT DAN PRODUKSI TANAMAN KENTANG (Solanum tuberosum L) DENGAN MENGGUNAKAN TALAROMYCES PINOPHIL...**

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**A resistance test of oil palm varieties (elaeis guineensis jacq.) In the saline**

## **soil with an adduction of humic acid**

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### **Impacts of agrivoltaic systems on soil properties and pedogenesis: A review**

FRISA IRAWAN GINTING , DIAN FIANTIS , AFFAN CHAHYAHUSNA , DYAH RETNO PANUJU , BAMBANG HENDRO TRISASONGKO , T SABRINA , Rudiyanto , Budiman Minasny

2017

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### **Perkembangan Cacing Pontoscolex corethrusus Pada Media Kultur Dengan Berbagai Jenis Tekstur Tanah dan Bahan Organik: Growth of Pontoscolex corethrusus on Culture Media With**

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### **Utilization of Oil Palm Empty Fruit Bunch (EFB) as Spodosol Soil Ameliorant for Increasing Oil Palm Root Growth**

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### **Diversity of non-symbiotic nitrogen-fixing bacteria and their potential in andisols affected by the eruption of mount sinabung, north sumatra, indonesia**

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### **Increased Inceptisol Soil Fertility as well as Growth and Production of Soybeans due to Compost Enriched Eggshells and Beneficial Microbes**

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### **Chemical characteristics of Bio-Vermigot (vermicompost and kasgot) fertilizer with the combination of Black Soldier Fly larvae and earthworm by using cow manure and banana stem**

NUR ULINA WARNISYAH SEBAYANG , T SABRINA

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### **Peningkatan Ketersediaan Fosfat Dan Produksi Tanaman Kentang (Solanum Tuberosum L) Dengan Menggunakan Talaromyces Pinophilus Indigenous Dan Pupuk Sp36 Pada Andisol Terdampak**

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### **Effects of earthworms, arbuscular mycorrhizae, and phosphate rock on setaria grass (&#39;Setaria splendida&#39;) and phosphorus availability in soil**

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### **Performance evaluation of potent phosphate solubilizing bacteria in potato rhizosphere.**

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## **INCREASING THE PRODUCTIVITY OF A FEW VARIETIES OF ONION (*ALLIUM ASCALONICUM* L.) WITH THE APPLICATION OF AMELIORANT**

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## **Using the Soil-Adjustment Vegetation Index from Landsat-8 Imagery for Estimating the Nutrient Content of Oil Palm Leaves for Optimized Fertilizer Application**

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## **Uji Potensi Beberapa Jenis Jamur Mikoriza Vesikular Arbuskular (MVA) terhadap Pertumbuhan Tanaman Jagung (*Zea mays* L.) di Tanah Inseptisol: The Potential Test of Vesicular**

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**History and interpretation of early soil and organic matter investigations in Deli, Sumatra, Indonesia**

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**Effect of *Talaromyces pinophilus* and SP36 on Phosphate Available and Potato (*Solanum tuberosum L*) Production on Andisol Impacted by Mount Sinabung**

## **Eruption, North Sumatera, Indonesia.**

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### **Uji Potensi Beberapa Jenis Jamur Mikoriza Vesikular Arbuskular (MVA) terhadap Pertumbuhan Tanaman Jagung (*Zea mays* L.) di Tanah Inseptisol: The Potential Test of Vesicular & #8230;**

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### **Diversity of potassium solvng microbes on andisol soil affected by the eruption of Mount Sinabung, North Sumatra, Indonesia**

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## **P status in Andisol and P content in arabica coffee seedling leaves due to the application of phosphate providing microorganisms and organic matters in Bener Meriah**

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## **Isolation and identification of phosphate solubilizing microbes in the rhizosphere of maize by sound exposure**

PROF DR IR AHMAD RAFIQI TANTAWI. MS , MARIANI BR SEMBIRING , T SABRINA , ASRITANARNI MUNAR

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## **Farmers' Behavior in Using Fertilizer and Its Effects on The Presence of Root Nodes and Soybean Production (Glycine max (L.) Merr.)**

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**PENGARUH PENGGUNAAN BIOCHAR BIOMASSA KELAPA SAWIT TERHADAP AKTIVITAS MIKROORGANISME PADA TANAH ULTISOL**

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**Pemanfaatan Mikroorganisme Penyedia Fosfat dan Bahan Organik untuk Meningkatkan Ketersediaan P-tanah Andisol dan Pertumbuhan Bibit Kopi Arabika di Kabupaten Bener Meriah**

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**Phosphate-Solubilizing Fungi: Impact on Growth and Development of Economically Important Plants.**

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**Peningkatan Ketersediaan Fosfat Dan Produksi Tanaman Kentang (Solanum Tuberosum L) Dengan Menggunakan Talaromyces Pinophilus Indigenous Dan Pupuk Sp36 Pada Andisol Terdampak**

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**A role of formate dehydrogenase in the oxalate metabolism in the wood-destroying basidiomycete Ceriporiopsis subvermispora**

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## **dan Pertumbuhan Tanaman Jagung di Inceptisol**

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### **MENGUBAH SAMPAH MENJADI PELUANG: MENDAUR ULANG PLASTIK DAN MENGOLAH SAMPAH RUMAH TANGGA**

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### **Farmers' Behavior in Using Fertilizer and Its Effects on The Presence of Root Nodes and Soybean Production (Glycine max (L.) Merr.)**

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2017

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### **Respon Pertumbuhan Tanaman Tembakau (Nicotiana tabaccum L.) Terhadap Perlakuan Perbandingan Media Tanam Top Soil, Abu Vulkanik, dan Tandan Kosong Kelapa Sawit (TKKS): The**

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2023

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### **Application of Vermicompost, Kasgot (BSF Compost), and Vermigot for growth and production of Pakchoy ( Brassica rapa L.) in Ultisol**

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### **Effect of giving triple super phosphate and dolomite fertilizer on mushroom media (baglog) on production of white oyster mushroom (Pleurotus ostreatus)**

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### **The evaluation of soil chemistry and soil physic on understudied of camphor trees (Dryobalanops aromatica Colebr)**

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### **Optimization of Leaf Nutrient Mapping in Oil Palm A Geospatial Comparison for Site-Specific Managemen**

T SABRINA , ZULKIFLI , DHIMAS WIRATMOKO , Budiman Minasny

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Prosiding seminar internasional

### **Analysis of Vegetation Index of Oil Palm Plants infected with Ganoderma Disease**

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Book chapter internasional

### **The contribution of oil palm plantations to prosperity and a circular economy in North Sumatera**

T SABRINA , HOTNIDA SINAGA

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# Hubungan Sifat Kimia Tanah (C, N, C/N dan K) dan Produksi Bawang Merah (*Alliumascalonicum* L.) di Daerah Tangkapan Air Danau Toba

T SABRINA

2016

Jurnal nasional

## Populasi Bakteri Tanah pada Piringan Tanaman Kelapa Sawit Akibat Pemberian Pupuk NPK Komplit: Population of Soil Bacterial in The Oil Palm's Weeded Circle Applied with NPK

T SABRINA

2018

Prosiding seminar internasional

## The influence of the composition of biodiversal fertilizers plant vegetative soybean plant (*Glycine max* (L.) Merrill) in inceptisol

T SABRINA

2011

Jurnal internasional bereputasi

## Evaluation of Nutrients Released from Phosphorus-Enriched Empty Oil Palm Fruit Bunches As Growing Media Using *Setaria splendida*

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2019

Prosiding seminar internasional

## The growth and yield of sweet corn (*Zea mays saccharata* Sturt.) with anorganic and organo-bio fertilizer

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Jurnal internasional bereputasi

## Using the Soil-Adjustment Vegetation Index from Landsat-8 Imagery for Estimating the Nutrient Content of Oil Palm Leaves for Optimized Fertilizer Application

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Prosiding seminar internasional

## THE GROWTH OF OIL PALM VARIETIES (*ELAEIS GUINEENSIS* JACQ.) ON SUBSOIL MEDIA TREATED WITH SEVERAL DOSAGES OF NITROGEN FERTILIZER

T SABRINA

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## Precocious 19th century soil carbon science

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## Isolation, Purification and Potential Test of Actinomycetes in Increasing Phosphate Availability

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## Uji Potensi Beberapa Jenis Jamur Mikoriza Vesikular Arbuskular (MVA) terhadap Pertumbuhan Tanaman Jagung (*Zea mays* L.) di Tanah Inseptisol

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## Macrofauna diversity in andisol soil after eight years affected by the eruption of Mount Sinabung, North Sumatra, Indonesia

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**Soil Macrofauna as Bioindicator on Aek Loba Palm Oil Plantation Land**

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**Purification and characterization of NAD-dependent formate dehydrogenase from the white-rot fungus *Ceriporiopsis subvermispora* and a possible role of the enzyme in oxalate**

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**Respon Sifat Kimia, Bio-Kimia Tanah Sawah, Serapan Hara dan Produksi Tanaman Padi (*Oryza Sativa*, L) terhadap Pemberian Jerami pada Sistem Tanam Budidaya Lokal dan Pengelolaan**

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Buku referensi

**J., Rusman, B., & Wawan.(2016)**

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**Potential of phosphate solubilizing microbes from Andisol in qualitatively dissolving P at various pH**

T SABRINA

2018

Prosiding seminar internasional

**Population dynamics of *Azotobacter* sp., *Azospirillum* sp., *Bacillus subtilis*, *Talaromyces pinophilus*, *Trichoderma asperellum*, and *Syncephalastrum racemosum* in the medium with**

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**The nutrient content of N, P, K in Andisols and Arabica coffee leaves in Bener Meriah Regency, Indonesia**

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**Effect *Burkholderia cepacia* and SP36 on Available Phosphate and Potato (*Solanum tuberosum* L.) production on andisol impacted by Mount Sinabung eruption, North Sumatera, Indonesia**

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2019

Prosiding seminar internasional

**Soil fauna diversity on the area with several treatments on the oil palm trunk**

2013

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**Effects of earthworms, arbuscular mycorrhizae, and phosphate rock on setaria grass ('Setaria splendida') and phosphorus availability in soil**

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Prosiding seminar internasional

**The role of rhizosphere microbes as phosphate solubilizing bio fertilizers in shallot: a review**

ABDUL RAUF , T SABRINA

2026

Book chapter internasional

**Advances in Agronomy**

T SABRINA , DIAN FIANTIS , FRISA IRAWAN GINTING , Budiman Minasny

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Jurnal nasional terakreditasi

**Description of Macrofaunal Communities at Different Thickness of Sinabung Volcanic Ash on Andisol Soil in Karo Regency**

T SABRINA

2015

Jurnal nasional terakreditasi

**PENGARUH PEMBERIAN MVA (MIKORIZA VESICULAR ARBUSKULAR) TERHADAP PERTUMBUHAN STUMP KARET KLON PB 260 (Hevea Brasiliensis Muell Ar...**

T SABRINA

2026

Jurnal internasional

**The soil macrofauna diversity in Negeri Lama; Oil palm plantation area, Indonesia**

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## Researches

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**Eksplorasi Mikroba Penambat Nitrogen dan penghasil hormone tumbuh yang bersumber dari Andisol terdampak Erupsi Gunung Sinabung.**

MARIANI BR SEMBIRING , T SABRINA

2020

Penelitian Unggulan Perguruan Tinggi

**Pengukuran potensi mikroba pelarut fosfat yang bersumber dari Andisol terdampak Erupsi Gunung Sinabung sebagai pupuk hayati**

MARIANI BR SEMBIRING , T SABRINA

2021

Penelitian Dosen Pemula

**Kajian Kualitas Pupuk Hayati Bio-Vermigot (Vermikompos dan Kasgot)**

NINI RAHMAWATI , NUR ULINA WARNISYAH SEBAYANG , T SABRINA

2020

Penelitian Kompetensi

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## **Pengukuran potensi mikroba pelarut fosfat yang bersumber dari Andisol terdampak Erupsi Gunung Sinabung sebagai pupuk hayati**

MARIANI BR SEMBIRING , T SABRINA

2022

Penelitian Kompetensi

## **PENGUKURAN POTENSI PUPUK ORGANIK YANG DIPERKAYA MIKROBA UNGGUL PELARUT P, PELARUT KALIUM, PENAMBAT N NON SIMBIOTIK UNTUK MENINGKATKAN KUALITAS TANAH DAN PRODUKSI TANAMAN**

BENNY HIDAYAT , MARIANI BR SEMBIRING , T SABRINA

2023

Penelitian Unggulan Perguruan Tinggi

## **Potensi limbah pabrik teh sebagai pengganti topsoil untuk media pertumbuhan bibit sawit**

MARIANI BR SEMBIRING , T SABRINA

## **Community Services**

2019

Ipteks Bagi Masyarakat

## **PENINGKATAN DAYA DUKUNG LAHAN JAGUNG MELALUI APLIKASI TEKNOLOGI TERPADU**

LUTHFI AZIZ MAHMUD SIREGAR , MARIANI BR SEMBIRING , LISA MAWARNI , T SABRINA

2024

## **Edukasi Penerapan Sistem Sertifikasi Halal Pada Usaha Mikro Kecil dan Menengah (UMKM) Menuju Usaha Yang Berkelanjutan dan Kompetitif**

T SABRINA

2022

Ipteks Bagi Masyarakat

## **PEMBERDAYAAN IPTEK DAN PEMANFAATAN JAMUR *Syncephalastrum racemosum* ASAL ISOLAT BATANG SAWIT SEBAGAI CHITOSANES UNTUK MENINGKATKAN TANAMAN BUAH PADA DESA SEI. KOPAS KISARAN**

T SABRINA , RINI HARDIYANTI , HARRY AGUSNAR

2013

## **DEMPLLOT TEKNIK BUDIDAYA MENTIMUN DAN APLIKASI PUPUK ORGANIK PENINGKATAN KESUBURAN TANAH**

LUTHFI AZIZ MAHMUD SIREGAR , BENNY HIDAYAT , LISA MAWARNI , T SABRINA

## **Intellectual Property Rights**

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## **penelitian dan pengabdian**

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## **Sistem Informasi Pemupukan**

Budiman Minasny , RETNADI HERU JATMIKO , T SABRINA , RADEN IBNU ROSYADI , DHIMAS WIRATMOKO

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## **proses perolehan actinomycetes terbaik yang mampu melarutkan fosfat sebagai pupuk hayati untuk meningkatkan kualitas tanah andisol**

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Hasil penelitian/pemikiran yang tidak dipublikasikan

**Respon Sifat Kimia, Bio-Kimia Tanah Sawah, Serapan Hara dan Produksi Tanaman Padi (*Oryza Sativa*, L) terhadap Pemberian Jerami pada Sistem Tanam Budidaya Lokal dan Pengelolaan**

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2026

Paten nasional

**TEKNOLOGI UNTUK MENINGKATKAN KESUBURAN TANAH ANDISOL DENGAN MEMANFAATKAN BAKTERI DAN JAMUR PELARUT FOSFAT.**

T SABRINA , MARIANI BR SEMBIRING

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2026

Hasil penelitian/pemikiran yang tidak dipublikasikan

**Rekayasa Horizon Spodik Tanah Spodosol Sub Group Typic Placorthod pada Budidaya Kelapa Sawit (*Elaeis guineensis* Jacq.) di Kabupaten Barito Timur Propinsi...**

T SABRINA

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2026

Hasil penelitian/pemikiran yang tidak dipublikasikan

**Klorofil Daun Angsana dan Mahoni Sebagai Bioindikator Pencemaran Sulfur Dioksida dan Nitrogen Dioksida di Kota Medan**

T SABRINA

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Paten nasional

**Burkholderia cepacia SEBAGAI PUPUK HAYATI PELARUT FOSFAT SPESIFIK LINGKUNGAN PADA TANAH ANDISOL**

MARIANI BR SEMBIRING , T SABRINA

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