

STRATEGIC COLLABORATION PROPOSAL

**ALAMI HERBS × ELVYRA × MALAYSIAN AGRICULTURAL
RESEARCH AND DEVELOPMENT INSTITUTE (MARDI)**



TABLE OF CONTENT

SECTION 1: STRATEGIC OVERVIEW

- 1.1: Proposal Intent & Strategic Direction
- 1.2: Collaboration Objective
- 1.3: Selected Formulations as Entry Point
- 1.4: Alignment with National Research Priorities

SECTION 2: SYSTEM FOUNDATION

- 2.1: Background of Alami Herbs (Foundational Platform)
- 2.2: Evolution Toward ELVYRA (Next-Generation System)
- 2.3: Existing Product Ecosystem (20+ Formulations)
- 2.4: Real-World Usage and Market Presence
- 2.5: Structural Link to Full Product Documentation

SECTION 3: NATIONAL & SCIENTIFIC RELEVANCE

- 3.1: Modern Dietary Patterns & Metabolic Burden
- 3.2: Increasing Demand for Botanical-Based Solutions
- 3.3: Role of Traditional Knowledge in Modern Context
- 3.4: Opportunity for Scientific Validation and Standardization
- 3.5: Relevance to Malaysian Agricultural and Health Priorities

SECTION 4: CORE FORMULATIONS FOR VALIDATION

4.1: Selection Rationale and Strategic Focus

4.2: Formulation A - Kapsul 100% Asam Gelugor Asli

- 4.2.1: A tradition of balance and control
- 4.2.2: Precision in simplicity
- 4.2.3: Supporting metabolic balance & daily control
- 4.2.4: Functional Wellness Benefits
- 4.2.5: Formulated with intent
- 4.2.6: Transparency & Future Direction
- 4.2.7: Real-world use

4.3: Formulation B - Kapsul GlucoHerbs

- 4.3.1: A targeted approach to glucose balance & metabolic control
- 4.3.2: Precision in synergy
- 4.3.3: Supporting glucose balance, insulin function & metabolic stability
- 4.3.4: Functional Wellness Benefits
- 4.3.5: Formulated with intent
- 4.3.6: Transparency & Future Direction
- 4.3.7: Real-world use

4.4: Functional Intent and Targeted Support Areas

4.5: Linkage to Full Scientific Product Dossiers

SECTION 5: COLLABORATION & DEVELOPMENT FRAMEWORK

5.1: Objective of Collaboration with MARDI

5.2: Scope of Scientific Evaluation (Laboratory & Analytical)

5.3: Validation Pathway (Safety, Efficacy, Standardization)

5.4: Co-Development and Formulation Optimization

5.5: Technology Transfer and Commercialization Pathway

5.6: Grant-Supported Research Structuring

SECTION 6: SCALABILITY & SYSTEM EXPANSION

- 6.1: Overview of Extended Product Portfolio
- 6.2: Replicable Botanical Formulation System
- 6.3: Expansion Potential Across Health Categories
- 6.4: Integration into ELVYRA Platform
- 6.5: Long-Term System Development Strategy

SECTION 7: STRATEGIC VALUE & COLLABORATION PATHWAY

- 7.1: Contribution to National Herbal Industry Development
- 7.2: Bridging Traditional Knowledge with Scientific Validation
- 7.3: Industry–Research Collaboration Potential
- 7.4: Public Health and Socioeconomic Impact
- 7.5: Proposed Next Steps for Collaboration

SECTION 1: STRATEGIC OVERVIEW

1.1: Proposal Intent & Strategic Direction

This proposal is developed to initiate a structured collaboration between Alami Herbs and the Malaysian Agricultural Research and Development Institute (MARDI), with the primary intent of advancing traditionally developed botanical formulations into scientifically evaluated and systematically validated products. Alami Herbs represents an established foundation of over twenty formulations derived from traditional knowledge and sustained real-world usage, forming a practical baseline for further scientific exploration. Building upon this foundation, ELVYRA is positioned as a next-generation platform designed to integrate scientific validation, formulation standardization, and scalable system development. The strategic direction of this proposal is therefore not limited to product validation alone, but extends toward the development of a cohesive botanical system where traditional formulations are refined, standardized, and aligned with contemporary scientific frameworks. This approach emphasizes continuity rather than replacement, ensuring that existing formulations are preserved in their functional intent while being elevated through structured research and institutional collaboration.

1.2: Collaboration Objective

The core objective of this collaboration is to establish a co-development pathway that enables the scientific evaluation, validation, and potential optimization of selected Alami Herbs formulations within an institutional research environment. This includes laboratory-based analysis, phytochemical characterization, safety profiling, and the exploration of efficacy through appropriate scientific methodologies. The collaboration is designed to function within a framework of mutual contribution, where Alami Herbs provides existing formulations, real-world usage context, and a developed product ecosystem, while MARDI contributes its expertise in agricultural science, botanical research, and analytical validation. The intention is to create a synergistic model that facilitates knowledge integration and technology transfer, allowing for the transformation of traditionally derived products into scientifically supported formulations suitable for broader regulatory alignment and market scalability. This collaborative structure is further envisioned to be supported through appropriate grant mechanisms and research funding pathways, ensuring sustainability and alignment with national innovation initiatives.

1.3: Selected Formulations as Entry Point

In order to ensure clarity of scope and feasibility of implementation, this proposal adopts a focused entry strategy by selecting two formulations from the broader Alami Herbs portfolio as primary candidates for initial scientific evaluation. These formulations, namely Kapsul 100% Asam Gelugor Asli and Kapsul GlucoHerbs, are chosen based on their defined functional intent, ingredient clarity, and relevance to contemporary metabolic and dietary considerations. Kapsul 100% Asam Gelugor Asli represents a single-ingredient formulation derived from *Garcinia Atroviridis*, offering a simplified model for baseline analysis, standardization, and compositional profiling. In contrast, Kapsul GlucoHerbs embodies a multi-component botanical system combining *Peria Katak* (*Momordica Charantia*), *Hempedu Bumi* (*Andrographis Paniculata*), *Misai Kucing* (*Orthosiphon Stamineus*), *Halia Bara* (*Zingiber Officinale* Var. *Rubrum*), and *Kayu Manis* (*Cinnamomum Verum*), reflecting a structured approach to synergistic formulation design. Together, these two formulations provide complementary models for investigation, enabling both reductionist and integrative scientific approaches within the same research framework. Their selection serves as a strategic entry point, allowing for controlled evaluation while remaining directly anchored to the broader product documentation and formulation system established under Alami Herbs.

1.4: Alignment with National Research Priorities

This initiative is inherently aligned with national priorities related to agricultural innovation, herbal resource utilization, and the advancement of functional botanical products within Malaysia. The focus on locally recognized plant materials and traditionally informed formulations reflects a broader objective of enhancing the value of indigenous botanical resources through scientific validation and standardization. By bridging traditional knowledge with contemporary research methodologies, the proposed collaboration contributes to the strengthening of Malaysia's herbal industry ecosystem and supports ongoing efforts to position botanical products within a more structured and evidence-informed framework. Furthermore, the emphasis on metabolic and dietary-related applications corresponds with increasing public health interest in lifestyle-associated conditions, thereby reinforcing the relevance of this project within a national context. Through collaboration with MARDI, this initiative has the potential to contribute not only to product-level development, but also to the generation of scientific data, research outputs, and scalable models that support long-term agricultural and health-related innovation in Malaysia.

SECTION 2: SYSTEM FOUNDATION

2.1: Background of Alami Herbs (Foundational Platform)

Alami Herbs represents the foundational platform upon which this proposal is established, encompassing a portfolio of botanical formulations developed through the integration of traditional knowledge, ingredient familiarity, and iterative real-world application. The development approach underlying Alami Herbs is characterized by the use of single-ingredient and multi-component herbal systems derived from regionally recognized plant materials, formulated with the intention of supporting various aspects of physiological balance and general wellness. Over time, this platform has evolved through continuous informal validation via consumer usage, enabling the refinement of formulation concepts based on observed functional outcomes and user acceptance. While these formulations have not yet undergone formal laboratory or clinical validation, their sustained presence within a real-market environment provides a practical foundation for structured scientific investigation. As such, Alami Herbs serves not merely as a collection of products, but as an applied botanical system that is ready to be transitioned into a more rigorous, research-oriented framework through institutional collaboration.

2.2: Evolution Toward ELVYRA (Next-Generation System)

Building upon the foundational work established under Alami Herbs, ELVYRA is conceptualized as a next-generation system designed to formalize, structure, and scale botanical product development through the integration of scientific validation, data-driven formulation, and digital system architecture. The transition toward ELVYRA does not represent a replacement of the existing platform, but rather an evolution in which traditional formulations are preserved in their core functional intent while being enhanced through standardized processes and evidence-based methodologies. ELVYRA is envisioned as a comprehensive framework that supports not only product validation, but also formulation optimization, quality control standardization, and long-term scalability across multiple health-related categories. This includes the potential incorporation of analytical data, research findings, and systematic documentation into a unified platform capable of supporting both internal development and external collaboration. Within this context, ELVYRA functions as the future-facing extension of Alami Herbs, providing the structural and technological foundation necessary to translate traditionally developed products into scientifically aligned and institutionally recognized systems.

2.3: Existing Product Ecosystem (20+ Formulations)

The current Alami Herbs portfolio consists of more than twenty distinct formulations encompassing both single-herb and multi-herb compositions, each developed with specific functional intentions aligned with different aspects of physiological support. This ecosystem includes single-ingredient products such as formulations based on *Garcinia atroviridis*, *Allium sativum*, *Zingiber officinale* variants, and *Lignosus rhinocerotis*, as well as multi-component systems combining botanicals traditionally associated with metabolic balance, circulatory support, musculoskeletal function, and general vitality. The diversity of this portfolio reflects a modular formulation strategy in which individual botanical components can be studied independently while also contributing to more complex synergistic systems. Importantly, this breadth of formulations demonstrates not only product variety, but also the existence of an underlying formulation logic that can be systematically analyzed, standardized, and expanded upon through scientific research. The presence of this established ecosystem provides a scalable base from which selected formulations can be prioritized for validation while maintaining a broader pipeline for future development.

2.4: Real-World Usage and Market Presence

The Alami Herbs product ecosystem has been actively distributed and utilized within a real-market context over an extended period, providing a layer of practical insight into consumer acceptance, usage patterns, and perceived functional outcomes. This real-world presence, although not formally documented within a clinical or experimental framework, offers valuable preliminary context that can inform future research design and prioritization. The continued demand and repeat usage observed across various formulations suggest a level of user engagement and acceptance that supports further investigation into their underlying mechanisms and potential benefits. From a development perspective, this market exposure indicates that the formulations are not purely theoretical constructs, but rather applied products that have undergone informal iterative refinement through actual consumer interaction. This aspect strengthens the case for scientific evaluation, as it provides a starting point grounded in real usage rather than hypothetical design, thereby enhancing the relevance and potential impact of subsequent research efforts.

2.5: Structural Link to Full Product Documentation

This proposal is directly supported by a comprehensive product documentation framework developed for the entire Alami Herbs portfolio, which serves as a foundational reference for all formulations described herein. The full product documentation includes detailed descriptions of ingredient composition, formulation rationale, functional intent, and contextual background for each product, providing a structured repository of information that can be utilized for scientific evaluation and collaborative research. Within the context of this proposal, selected formulations are presented as entry points for focused investigation, while the complete documentation remains available as an extended reference to illustrate the broader system architecture and development potential. This structural linkage ensures that the proposal is not an isolated presentation, but rather an integrated component of a larger, organized knowledge base. It also enables scalability, allowing additional formulations to be systematically introduced into the research pipeline as the collaboration progresses, thereby reinforcing the long-term viability and expansion potential of the overall system.

SECTION 3: NATIONAL & SCIENTIFIC RELEVANCE

3.1: Modern Dietary Patterns & Metabolic Burden

Contemporary dietary patterns are increasingly characterized by high intake of refined carbohydrates, sugars, and processed foods, combined with reduced physical activity, leading to a growing prevalence of metabolic imbalance within the general population. These shifts in lifestyle have contributed to heightened interest in supportive approaches that address physiological regulation, particularly in relation to glucose metabolism, lipid balance, and digestive function. Within this context, the formulations developed under Alami Herbs are aligned with functional domains that correspond to these emerging challenges, reflecting an applied response to real-world consumption behaviors. Although originally developed outside of a formal scientific framework, these formulations provide a relevant starting point for investigating how botanical systems may interact with metabolic processes, thereby positioning them as suitable candidates for structured research in addressing contemporary health concerns.

3.2: Increasing Demand for Botanical-Based Solutions

There is a noticeable and sustained increase in demand for plant-based and naturally derived products, driven by consumer preference for alternatives that are perceived as more aligned with long-term wellness and holistic health practices. This trend is evident across both domestic and global markets, where botanical formulations are gaining recognition not only for their traditional relevance but also for their potential integration into modern health strategies. The Alami Herbs product ecosystem reflects this demand through its focus on herbal compositions that utilize familiar and regionally accessible plant materials. However, despite the growing market interest, there remains a critical need for these products to be supported by structured scientific evaluation to ensure consistency, safety, and reliability. This gap between demand and validated supply underscores the importance of initiatives that aim to elevate botanical products through research and standardization, thereby enhancing their credibility and broader acceptance.

3.3: Role of Traditional Knowledge in Modern Context

Traditional knowledge systems have long served as the foundation for the use of botanical materials in supporting various aspects of human health, offering insights derived from

generational observation and empirical practice. Within the Alami Herbs framework, this knowledge is reflected in the selection of ingredients and the formulation logic applied across the product portfolio. In a modern context, however, the value of traditional knowledge is increasingly recognized as a starting point rather than a standalone endpoint, requiring integration with contemporary scientific methodologies to ensure its continued relevance and applicability. By translating traditional formulation concepts into structured research inquiries, it becomes possible to retain the essence of these systems while enhancing their interpretability within current scientific paradigms. This integration allows for a more comprehensive understanding of botanical functionality, bridging cultural heritage with evidence-based approaches.

3.4: Opportunity for Scientific Validation and Standardization

The current state of the Alami Herbs product ecosystem presents a significant opportunity for systematic scientific validation and standardization, particularly given the existing diversity and defined functional intent of its formulations. While the products have been developed and utilized within a real-world context, their transition into a scientifically recognized framework requires the establishment of reproducible analytical data, safety profiles, and standardized composition parameters. This process involves the identification of key bioactive compounds, the development of consistent processing methodologies, and the generation of evidence that supports their functional roles. The collaboration with an institution such as MARDI enables the application of established research techniques to achieve these objectives, transforming informal knowledge into structured and verifiable data. This not only enhances the reliability of individual formulations but also contributes to the development of broader standards that can be applied across the botanical product category.

3.5: Relevance to Malaysian Agricultural and Health Priorities

The proposed initiative is closely aligned with Malaysia's strategic priorities in both agricultural development and public health advancement, particularly in relation to the utilization and value enhancement of indigenous plant resources. By focusing on botanicals that are regionally recognized and potentially cultivable within the local agricultural landscape, the project supports efforts to strengthen the integration between primary production and downstream product development. In addition, the emphasis on metabolic and lifestyle-related functional domains corresponds with national interests in promoting preventive health approaches and improving overall population well-being. Collaboration with Malaysian Agricultural Research and Development Institute provides a platform through which these objectives can be pursued in a

coordinated and scientifically grounded manner, ensuring that the development of botanical products contributes not only to commercial outcomes but also to broader national goals related to innovation, sustainability, and health resilience.

SECTION 4: CORE FORMULATIONS FOR VALIDATION

4.1: Selection Rationale and Strategic Focus

The selection of core formulations for this proposal is guided by a strategic balance between scientific feasibility, formulation clarity, and relevance to contemporary health considerations. From the broader Alami Herbs product ecosystem, two formulations have been identified as optimal entry points for structured evaluation based on their complementary characteristics and defined functional intent. This approach enables a dual-pathway investigation framework, wherein both single-ingredient and multi-component botanical systems can be examined within a controlled research scope. The rationale emphasizes the importance of starting with formulations that allow for clear analytical profiling, reproducibility, and targeted hypothesis development, while still reflecting the broader formulation philosophy embedded within the Alami Herbs platform. By narrowing the focus to two representative models, the proposal ensures depth of investigation without compromising scalability, thereby creating a foundation for subsequent expansion into additional formulations within the existing portfolio.

4.2: Formulation A - Kapsul 100% Asam Gelugor Asli

Kapsul 100% Asam Gelugor Asli is a single-ingredient formulation derived exclusively from *Garcinia Atroviridis*, a botanical widely recognized within regional contexts for its traditional association with digestive and metabolic support. The use of a mono-component system provides a simplified and controlled model for scientific evaluation, allowing for precise phytochemical characterization, standardization of active constituents, and reproducible analysis across different research phases. This formulation is particularly suitable for baseline investigations involving compositional profiling, bioactive compound identification, and preliminary functional assessments, as it minimizes confounding variables commonly associated with multi-herb combinations. Within the context of this proposal, it serves as a foundational reference point through which methodologies for extraction, standardization, and analytical validation can be established. The clarity of its composition also facilitates regulatory alignment and provides a straightforward pathway for subsequent clinical investigation, making it an ideal candidate for initial collaboration.

4.2.1: A Tradition of Balance and Control

For generations, Asam Gelugor has been valued in traditional practices for its perceived role in supporting appetite awareness, digestive balance, and body regulation. Its naturally sour profile reflects the presence of organic acids associated with metabolic function.

4.2.2: Precision in Simplicity

- Single-Ingredient Integrity: 100% Asam Gelugor. No fillers. No dilution. No compromise.
- Naturally Occurring Organic Acids: Contains hydroxycitric acid (HCA) and related compounds associated with metabolic activity.
- Botanical Support for Appetite Awareness: Traditionally linked to helping maintain balanced eating patterns.
- Minimal Processing Approach: Prepared to preserve its natural composition and bioactive properties.

4.2.3: Supporting Metabolic Balance & Daily Control

Maintaining balance between energy intake and metabolic function is essential for overall wellness. This formulation is designed to complement these processes—supporting appetite awareness, metabolic activity, and internal balance in daily life.

4.2.4: Functional Wellness Benefits

- Supports metabolic balance and body regulation
- Helps maintain healthy appetite awareness
- Complements digestive function and internal balance
- Supports lifestyle-focused body management
- Promotes overall physiological stability

4.2.5: Formulated with Intent

At Alami Herbs, formulation is driven by purpose, not complexity. By preserving Asam Gelugor in its pure, unblended form, this product reflects a commitment to authenticity, simplicity, and botanical integrity. Each capsule is designed for consistency and ease of use, allowing seamless integration into your daily wellness routine.

4.2.6: Transparency & Future Direction

This product is developed based on traditional knowledge and supported by scientific interest in organic acids such as HCA. Ongoing evaluation and future clinical validation remain part of our

long-term commitment to advancing botanical science. This product is not intended to diagnose, treat, cure, or prevent any disease.

4.2.7: Real-world Use

Chosen by individuals who prioritize metabolic balance, mindful eating, and lifestyle-based wellness as part of a disciplined routine. Outcomes may vary depending on individual condition and consistency of use.

4.3: Formulation B - Kapsul GlucoHerbs

Kapsul GlucoHerbs represents a multi-component botanical formulation designed around the concept of synergistic interaction among selected plant materials traditionally associated with metabolic regulation. The formulation integrates Peria Katak (*Momordica Charantia*), Hempedu Bumi (*Andrographis Paniculata*), Misai Kucing (*Orthosiphon Stamineus*), Halia Bara (*Zingiber Officinale* Var. *Rubrum*), and Kayu Manis (*Cinnamomum Verum*), each of which has been historically utilized in various traditional contexts for their functional roles related to glucose metabolism, circulatory support, and internal balance. Unlike the single-ingredient model, this formulation embodies a systems-based approach, where the combined interaction of multiple bioactive compounds is expected to contribute to its overall functional profile. From a scientific perspective, this introduces a more complex but highly relevant model for investigation, requiring multi-layered analysis including phytochemical interaction studies, pathway-based evaluation, and potential synergistic effects. The inclusion of this formulation within the proposal enables the exploration of integrative botanical systems, reflecting real-world formulation practices while providing an opportunity to develop methodologies for evaluating multi-component interactions in a structured and reproducible manner.

4.3.1: A Targeted Approach to Glucose Balance & Metabolic Control

For generations, these botanicals have been valued in traditional practices for their roles in regulating sugar metabolism, supporting pancreatic function, and enhancing internal detoxification. Their combination reflects a holistic approach—addressing glucose balance, insulin sensitivity, and metabolic stability.

4.3.2: Precision in Synergy

- **Multi-Ingredient Functional System:** A strategic combination of 5 botanicals working across metabolic, hepatic, and renal pathways.

- **Glucose Regulation Compounds:** Naturally occurring plant elements associated with blood sugar balance and insulin responsiveness.
- **Metabolic & Detox Support:** Botanical components linked to supporting liver function, pancreatic activity, and sugar metabolism.
- **Minimal Processing Approach:** Prepared to preserve natural bioactive composition and synergistic integrity.

4.3.3: Supporting Glucose Balance, Insulin Function & Metabolic Stability

Maintaining stable blood glucose levels is essential for long-term metabolic health. This formulation is designed to complement these processes—supporting insulin efficiency, glucose utilization, and internal balance in daily life.

4.3.4: Functional Wellness Benefits

- Supports healthy blood glucose balance
- Helps maintain insulin sensitivity and metabolic efficiency
- Supports liver and pancreatic function
- Complements kidney function and natural elimination processes
- Supports circulation and nutrient absorption
- Provides antioxidant and anti-inflammatory support

4.3.5: Formulated with Intent

At Alami Herbs, formulation is driven by purpose, not complexity. By combining botanicals known for their roles in glucose regulation and metabolic balance, this product reflects a commitment to stability, function, and long-term wellness support. Each capsule is designed for consistency and ease of use, allowing seamless integration into your daily routine.

4.3.6: Transparency & Future Direction

This product is developed based on traditional knowledge and supported by scientific interest in botanicals related to glucose metabolism and insulin function. Ongoing evaluation and future clinical validation remain part of our long-term commitment to advancing botanical science. This product is not intended to diagnose, treat, cure, or prevent any disease.

4.3.7: Real-world Use

Chosen by individuals who prioritize blood sugar control, metabolic balance, and long-term wellness as part of a disciplined lifestyle. Outcomes may vary depending on individual condition and consistency of use.

4.4: Functional Intent and Targeted Support Areas

Both selected formulations are anchored in clearly defined functional intents that align with contemporary interest in metabolic and digestive health, particularly within the context of modern dietary patterns. Kapsul 100% Asam Gelugor Asli is positioned to support digestive regulation and metabolic balance through its traditional association with gastrointestinal function, while Kapsul GlucoHerbs is designed to complement glucose metabolism and broader metabolic stability through a synergistic botanical approach. These targeted support areas are not framed as therapeutic claims, but rather as functional domains that can be systematically explored through scientific investigation. The clarity of these functional intents enables the formulation of focused research questions, facilitates the design of appropriate experimental models, and supports the identification of measurable biological endpoints. Collectively, these formulations provide a coherent framework for examining how botanical systems may contribute to maintaining physiological balance within the context of lifestyle-associated metabolic challenges.

4.5: Linkage to Full Scientific Product Dossiers

The presentation of these core formulations within this proposal is directly supported by comprehensive product dossiers developed as part of the Alami Herbs official product documentation. These dossiers contain detailed information on ingredient composition, formulation rationale, traditional context, and functional positioning, serving as an integrated knowledge base for both internal development and external collaboration. Within the scope of this proposal, the selected formulations are extracted from this broader documentation as representative models, while maintaining full traceability to their original source material. This linkage ensures that all aspects of the formulations are transparent, structured, and readily accessible for further analysis, thereby facilitating efficient collaboration and reducing redundancy in information exchange. It also provides a scalable framework through which additional formulations can be incorporated into future phases of research, reinforcing the continuity and extensibility of the overall system.

SECTION 5: COLLABORATION & DEVELOPMENT FRAMEWORK

5.1: Objective of Collaboration with MARDI

The objective of this collaboration is to establish a structured and mutually beneficial partnership between Alami Herbs, ELVYRA, and the Malaysian Agricultural Research and Development Institute (MARDI) for the purpose of advancing selected botanical formulations into scientifically validated and development-ready products. This collaboration is intended to bridge the gap between traditionally derived formulations and contemporary scientific standards by leveraging MARDI's expertise in agricultural research, plant-based analysis, and applied innovation. Within this framework, Alami Herbs contributes an established formulation base and real-world application context, while ELVYRA provides the system architecture for future scalability and integration. The collaboration is therefore positioned as a co-development initiative, where both parties engage in a coordinated effort to generate scientific evidence, refine formulation quality, and establish a pathway toward broader institutional and commercial recognition.

5.2: Scope of Scientific Evaluation (Laboratory & Analytical)

The scope of scientific evaluation under this collaboration encompasses a comprehensive series of laboratory-based and analytical investigations designed to characterize, standardize, and understand the selected formulations at a molecular and functional level. This includes phytochemical profiling to identify and quantify key bioactive compounds, assessment of compositional consistency across batches, and evaluation of physicochemical properties relevant to formulation stability. Analytical methodologies may involve chromatographic techniques, spectrometric analysis, and other established laboratory procedures appropriate for botanical research. In addition to compositional analysis, the scope extends to preliminary biological assessments aimed at exploring functional properties within defined experimental models. This structured evaluation framework is intended to generate reliable and reproducible data that can support both internal development decisions and external validation requirements, forming a critical foundation for subsequent stages of research and product advancement.

5.3: Validation Pathway (Safety, Efficacy, Standardization)

The validation pathway proposed within this collaboration is designed to follow a systematic progression encompassing safety assessment, efficacy exploration, and formulation standardization. Safety evaluation forms a primary component, involving toxicity screening and the establishment of acceptable usage parameters based on recognized scientific protocols. Efficacy exploration is approached through targeted studies aligned with the functional intent of each formulation, focusing on measurable biological indicators that reflect their intended support roles. Concurrently, standardization efforts aim to ensure consistency in composition and quality, including the identification of marker compounds and the development of reproducible processing parameters. This integrated pathway is structured to generate a cohesive body of evidence that supports the reliability, functionality, and safety of the formulations, thereby facilitating alignment with regulatory expectations and enhancing their credibility within both scientific and commercial contexts.

5.4: Co-Development and Formulation Optimization

A key component of the collaboration framework is the co-development process, which allows for the iterative refinement and optimization of formulations based on emerging scientific data and analytical findings. This process is not limited to validation of existing compositions, but extends to the potential enhancement of formulation performance through adjustments in ingredient ratios, processing techniques, and delivery formats where appropriate. The co-development approach is conducted within a controlled and evidence-informed environment, ensuring that any modifications are guided by scientific rationale while preserving the original functional intent derived from traditional knowledge. This collaborative refinement process enables the development of optimized formulations that are both scientifically grounded and practically viable, supporting long-term scalability and adaptability across different applications.

5.5: Technology Transfer and Commercialization Pathway

The collaboration framework incorporates a forward-looking perspective on technology transfer and commercialization, recognizing the importance of translating research outcomes into viable products within the market. This includes the potential development of standardized processing methods, quality control protocols, and formulation specifications that can be adopted for scaled production. Technology transfer mechanisms may involve the documentation and dissemination of validated methodologies, enabling consistent replication of product quality beyond the research environment. In parallel, the commercialization pathway considers the alignment of validated formulations with regulatory requirements, market positioning, and distribution strategies. The

integration of these elements ensures that the outcomes of the collaboration extend beyond academic research, contributing to the development of products that are both scientifically substantiated and commercially sustainable.

5.6: Grant-Supported Research Structuring

The execution of this collaboration is intended to be supported through structured access to relevant grant mechanisms and research funding programs aligned with national innovation priorities. This approach recognizes the importance of financial sustainability in enabling comprehensive scientific evaluation and development activities. The project is therefore positioned to leverage available funding frameworks, facilitating the allocation of resources toward laboratory analysis, validation studies, and formulation optimization processes. The grant-supported structure also enables the collaboration to align with broader governmental and institutional initiatives aimed at advancing agricultural and botanical research. By situating the project within these funding ecosystems, the collaboration can be conducted in a manner that is both resource-efficient and strategically aligned with national development objectives, thereby enhancing its feasibility and long-term impact.

SECTION 6: SCALABILITY & SYSTEM EXPANSION

6.1: Overview of Extended Product Portfolio

Beyond the two core formulations identified for initial validation, the Alami Herbs platform encompasses an extended portfolio of more than twenty botanical products developed through a consistent formulation philosophy rooted in traditional knowledge and functional intent. This portfolio includes both single-ingredient and multi-component formulations, each designed to address distinct physiological domains such as metabolic balance, circulatory support, respiratory function, musculoskeletal stability, and general vitality. The breadth of this ecosystem reflects a deliberate and iterative development process in which individual botanical components are utilized both independently and in synergistic combinations, allowing for flexibility in formulation design and application. The existence of this extended portfolio provides a substantial foundation for scalability, as it offers a ready pipeline of formulations that can be systematically evaluated, refined, and integrated into future research phases. Importantly, the portfolio is not a collection of isolated products, but rather a structured system that demonstrates internal consistency in ingredient selection, formulation rationale, and functional positioning.

6.2: Replicable Botanical Formulation System

A defining characteristic of the Alami Herbs platform is the presence of an underlying formulation system that is inherently replicable and adaptable across different product categories. This system is based on the strategic combination of botanicals with complementary functional roles, guided by traditional usage patterns and refined through practical application. The modular nature of this approach allows individual components to be analyzed independently while also contributing to more complex synergistic systems, thereby supporting both reductionist and integrative research methodologies. From a scientific perspective, this replicability enables the development of standardized frameworks for formulation design, where principles established through the validation of initial products can be applied to subsequent formulations. This includes the potential identification of recurring phytochemical patterns, interaction profiles, and functional pathways that can inform future product development. As such, the formulation system extends beyond individual products, representing a scalable methodology for the structured development of botanical solutions.

6.3: Expansion Potential Across Health Categories

The versatility of the existing formulation system allows for expansion across multiple health-related categories, reflecting the diverse functional roles associated with the botanical components utilized within the Alami Herbs portfolio. These categories include metabolic support, digestive regulation, cardiovascular function, immune modulation, respiratory health, and musculoskeletal maintenance, among others. The ability to address a wide range of physiological domains is not derived from isolated product development, but from the adaptable nature of the underlying formulation strategy, which can be tailored to specific functional objectives while maintaining consistency in design principles. This expansion potential is further supported by the availability of a broad range of botanicals that are locally recognized and accessible, enabling the development of regionally relevant products aligned with both consumer needs and agricultural resources. Within the context of this proposal, the selected core formulations serve as initial entry points, while the broader portfolio provides a clear pathway for future diversification and category expansion.

6.4: Integration into ELVYRA Platform

The transition from Alami Herbs to ELVYRA represents a critical step in the formalization and scalability of the entire system, enabling the integration of product development, scientific validation, and data management within a unified platform. ELVYRA is envisioned as a structured environment where validated formulations are systematically organized, documented, and continuously refined based on emerging research data. This integration facilitates the consolidation of analytical findings, formulation parameters, and functional insights into a centralized system that supports both internal development and external collaboration. In addition, the platform is designed to accommodate digital components, including data tracking, user interaction, and knowledge dissemination, thereby extending its functionality beyond traditional product development. By integrating validated formulations into ELVYRA, the system evolves from a collection of products into a dynamic and scalable framework capable of supporting long-term innovation, continuous improvement, and broader ecosystem development.

6.5: Long-Term System Development Strategy

The long-term development strategy underpinning this proposal is centered on the progressive expansion of a scientifically validated botanical system that integrates traditional knowledge,

empirical application, and modern research methodologies. This strategy involves a phased approach in which initial formulations are rigorously evaluated and standardized, followed by the systematic inclusion of additional products from the existing portfolio into the validation pipeline. Over time, this process is expected to generate a comprehensive body of scientific data that supports the reliability, functionality, and scalability of the entire system. The strategy also emphasizes adaptability, allowing for the incorporation of new botanical materials, emerging research insights, and evolving technological capabilities. Through sustained collaboration with MARDI and alignment with national research initiatives, the system is positioned to contribute to the advancement of Malaysia's herbal industry while establishing a model for integrated botanical development. Ultimately, the objective is to create a self-reinforcing ecosystem in which validated knowledge continuously informs product innovation, ensuring long-term relevance, scalability, and impact.

SECTION 7: STRATEGIC VALUE & COLLABORATION PATHWAY

7.1: Contribution to National Herbal Industry Development

This proposed collaboration presents a structured opportunity to contribute meaningfully to the advancement of Malaysia's herbal industry by transforming an existing portfolio of traditionally developed formulations into scientifically validated and standardized products. By leveraging locally recognized botanical resources and aligning them with formal research methodologies, the initiative supports the broader objective of enhancing the value chain of indigenous plant-based materials. The Alami Herbs platform, with its established ecosystem of formulations, provides a practical base for demonstrating how traditional knowledge can be systematically developed into research-informed outputs. Through collaboration with the Malaysian Agricultural Research and Development Institute, the project is positioned to contribute to the strengthening of national capabilities in botanical research, product standardization, and applied innovation. This, in turn, supports the development of a more structured and competitive herbal industry that is capable of meeting both domestic and international expectations.

7.2: Bridging Traditional Knowledge with Scientific Validation

A central value of this initiative lies in its ability to bridge the longstanding gap between traditional botanical knowledge and contemporary scientific validation. The formulations developed under Alami Herbs are grounded in historical usage patterns and empirical understanding of plant-based functions, yet they have not been formally integrated into a structured scientific framework. This collaboration creates a pathway through which these formulations can be examined using modern analytical techniques, enabling the identification of bioactive compounds, the assessment of functional properties, and the establishment of reproducible standards. By maintaining the original formulation intent while subjecting it to rigorous evaluation, the project preserves the cultural and practical relevance of traditional knowledge while enhancing its credibility and applicability within a modern context. This bridging process is essential for ensuring that traditional systems are not only retained, but also elevated through evidence-based validation and systematic documentation.

7.3: Industry–Research Collaboration Potential

The collaboration model proposed in this document reflects a broader opportunity to strengthen the interface between industry-driven formulation development and institutional research expertise. Alami Herbs represents a practical example of grassroots product development, characterized by iterative refinement and real-world application, while MARDI provides the scientific infrastructure necessary for validation, analysis, and innovation. The integration of these two domains creates a synergistic environment in which practical knowledge and scientific rigor can inform and enhance one another. This model has the potential to serve as a reference for future collaborations, demonstrating how industry-generated formulations can be systematically advanced through research partnerships. In addition, the involvement of ELVYRA as a structured platform for future integration further extends this potential, enabling the consolidation of research outputs into a scalable system that supports ongoing development, knowledge sharing, and technological advancement.

7.4: Public Health and Socioeconomic Impact

The broader implications of this initiative extend beyond product development, encompassing potential contributions to public health awareness and socioeconomic growth. The selected formulations, as well as the extended product portfolio, are aligned with functional domains related to metabolic balance, digestive regulation, and general wellness, which are increasingly relevant in the context of modern lifestyle patterns. By advancing these formulations through scientific validation, the project supports the availability of more reliable and standardized botanical options that can complement existing approaches to maintaining physiological balance. From a socioeconomic perspective, the development of validated herbal products has the potential to stimulate value creation across multiple sectors, including agriculture, processing, research, and distribution. The emphasis on locally sourced botanicals further reinforces the potential for supporting domestic agricultural activities and enhancing the utilization of indigenous plant resources. Collectively, these factors contribute to a broader impact that aligns with national interests in health promotion, economic development, and resource optimization.

7.5: Proposed Next Steps for Collaboration

The progression of this collaboration is envisioned as a structured and phased engagement beginning with formal discussions to align expectations, define scope, and identify suitable research pathways. Initial steps may include the submission and review of detailed product dossiers, followed by the establishment of a collaborative framework outlining roles, responsibilities, and resource allocation. Subsequent phases would involve the initiation of

laboratory-based analyses and validation studies for the selected formulations, supported by appropriate funding mechanisms and research grants. As data is generated and evaluated, opportunities for formulation refinement, standardization, and potential expansion into additional products can be systematically explored. The process is intended to remain adaptive, allowing for continuous alignment with emerging findings and institutional priorities. Through this phased approach, the collaboration can evolve in a controlled and sustainable manner, ensuring that each stage contributes meaningfully to the overall objective of developing a scientifically validated and scalable botanical system.

