

Effects of *curcuma xanthorrhiza* on appetite, calorie intake, and body weight: a systematic literature review**Yanasta Yudo Pratama¹, Margono¹, Rofifah Miftahurrahmi²**¹Universitas Negeri Yogyakarta, Indonesia²Institut Studi al-Qur'an dan Ilmu Keislaman Sunan Pandanaran, Indonesia* Corresponding Author. E-mail: yanastayudoprata@uny.ac.id*Received: (09-02-2026); Revised: (03-03-2026); Accepted: (06-06-2026)*

Abstract: Curcuma xanthorrhiza, or Javanese ginger, is a medicinal plant widely used in traditional Indonesian medicine, particularly to increase appetite and support digestive health. Decreased appetite can lead to low calorie intake and weight changes, potentially leading to nutritional disorders. This study aims to systematically analyze the effects of Curcuma xanthorrhiza on appetite, calorie intake, and body weight based on published research. The method used was a Systematic Literature Review (SLR) with reference to the PRISMA guidelines. A literature search was conducted through Scopus, IEEE Xplore, and SpringerLink using relevant keywords, with the inclusion criteria being articles from the last ten years, written in Indonesian or English, and discussing the variables of appetite, calorie intake, and/or body weight. The results showed that most studies reported increased appetite after administering Curcuma xanthorrhiza, which contributed to increased calorie intake and, under certain conditions, weight gain. These effects are related to the bioactive compounds in Javanese ginger, which play a role in improving digestive function and nutrient absorption. However, variation in results between studies suggests the need for standardization of dosage, dosage form, and duration of intervention. It was concluded that Curcuma xanthorrhiza has potential as a herbal agent to support appetite and nutritional status improvement. However, further research with a more robust methodological design is needed to strengthen the scientific evidence.

Keywords: curcuma xanthorrhiza, appetite, calorie intake, body weight, systematic literature review.

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INTRODUCTION

Traditional Indonesian medicine is part of our cultural heritage and is still widely used by the community to maintain and improve health. The use of medicinal plants as the main ingredient in traditional medicine is not only based on empirical experience but is also increasingly supported by various scientific studies (Indrayani & Shakila, 2025). One widely used and studied medicinal plant is Javanese ginger (*Curcuma xanthorrhiza*), which is known to have various health benefits, particularly in supporting digestive function and nutritional status. Loss of appetite remains a common health issue across all age groups, including children, adults, and the elderly. This condition can result in low calorie intake, ultimately contributing to weight loss and impaired nutritional status. Loss of appetite is often associated with digestive system disorders, post-illness conditions, or other metabolic factors, requiring a supportive approach to improve overall body function (Wagner et al., 2022).

Javanese ginger (*Curcuma xanthorrhiza*) has traditionally been used as an herbal medicine to stimulate appetite and maintain digestive health (Permana et al., 2023). This plant contains various bioactive compounds, such as curcuminoids and xanthorrhizols, which are known to have pharmacological activities, including stimulating bile secretion, increasing digestive enzyme activity, and protecting liver function. These mechanisms have the potential to play a role in increasing appetite, improving caloric intake, and supporting weight loss, especially in individuals with nutritional disorders. As scientific research advances, various studies have been conducted to assess the effectiveness of

Curcuma xanthorrhiza on appetite, caloric intake, and body weight, both in human subjects and experimental animals (Rizqiyah & Rinata, 2024). However, these research results are still scattered with varying designs, doses, intervention durations, and measurement parameters. This situation necessitates an approach that can systematically integrate and synthesize these findings to obtain a more comprehensive, evidence-based picture.

Based on this background, a systematic literature review is needed to comprehensively examine the effects of *Curcuma xanthorrhiza* on appetite, calorie intake, and body weight. This study is expected to provide an integrated understanding of the potential of temulawak as an herbal agent in traditional Indonesian medicine, while also providing a scientific basis for the development of herbal preparations and their application in the context of vocational education and traditional medicine-based health services.

METHODS

This study employed a Systematic Literature Review (SLR) method, which aimed to systematically identify, evaluate, and synthesize previous research findings on the effects of *Curcuma xanthorrhiza* on appetite, calorie intake, and body weight. The systematic literature review approach was chosen because it provides a comprehensive, evidence-based overview of a specific topic through a critical analysis of various published research findings. The SLR process adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency, replicability, and methodological quality of the study.

A systematic literature search was conducted through several relevant scientific databases, including Scopus, IEEE Xplore, SpringerLink. These databases were selected based on their extensive coverage of international and national scientific articles in the fields of health, nutrition, and traditional medicine. The article search was conducted using a combination of keywords tailored to the research topic, including "Curcuma xanthorrhiza," "temulawak," "appetite," "nafsu makan," "calorie intake," and "body weight," combined using the Boolean operators AND and OR. To maintain data relevance and currency, selected articles were limited to publications from the last ten years and written in either Indonesian or English. All articles obtained from the initial search results were collected and managed to identify and remove duplicate articles. Next, a screening process was conducted by reviewing article titles and abstracts to assess their relevance to the research objectives. Articles that were irrelevant to the research variables, did not discuss *Curcuma xanthorrhiza*, or did not report results related to appetite, calorie intake, or body weight were excluded from the review. Articles that passed the screening stage were then thoroughly reviewed through full-text reading to ensure compliance with the established inclusion criteria.

Articles that met the inclusion criteria were then evaluated for methodological quality to minimize the risk of bias and increase the validity of the study results. Quality assessment was conducted by considering the study design, clarity of methods, subject characteristics, appropriateness of interventions, and consistency of outcome measurements. Articles with adequate methodological quality were then included in the final analysis. The article selection and evaluation process was conducted systematically and documented to ensure that the resulting studies were objective and scientifically sound. Data from the selected articles were then extracted in a structured manner, noting key information relevant to the study objectives. Collected data included author identity and year of publication, study design and location, study subject characteristics, the form and dosage of *Curcuma xanthorrhiza* used, intervention duration, and study findings related to changes in appetite, calorie intake, and body weight. The extracted data were then analyzed descriptively and synthesized narratively to identify patterns of findings, similarities, and differences between studies.

The results of the data synthesis are presented in a narrative description integrated with theoretical discussion to provide a comprehensive understanding of the mechanisms and effectiveness of *Curcuma xanthorrhiza*. The narrative analysis approach was chosen because of the variations in study design, subjects, and measurement methods across studies, which precluded quantitative analysis or meta-analysis. Thus, this systematic literature review is expected to provide a comprehensive overview of the role of *Curcuma xanthorrhiza* in increasing appetite, calorie intake, and body weight, as well as serve as a basis for further research and development of traditional medicine based on scientific evidence.

RESULT AND DISCUSSION

A total of 627 initial records were identified through a literature search in various reputable scientific databases, including Scopus, IEEE Xplore, ScienceDirect, SpringerLink, and Google Scholar. During the pre-screening stage, 68 records were eliminated: 32 duplicate articles, 27 records that did not meet the initial eligibility criteria, and 9 records excluded due to technical difficulties or data entry errors. Following this stage, 559 records proceeded to a title and abstract review process, with 321 records deemed irrelevant due to not meeting the inclusion criteria, primarily because they did not focus on studies of Curcuma xanthorrhiza and its effects on appetite, calorie intake, and body weight.

In the next stage, 238 articles were reviewed in full text for a more in-depth evaluation. However, 19 articles were inaccessible due to technical difficulties or paywalls, resulting in only 219 full-text articles being assessed for eligibility. Of these, 201 articles were excluded for various reasons: 63 articles were not relevant to the research topic, 57 articles were from non-indexed journals or had not undergone peer review, and 81 articles did not meet the methodological standards established in this study. Through these selection stages, 18 articles were ultimately found to meet all inclusion criteria and were subjected to comprehensive analysis, as shown in Figure 1.

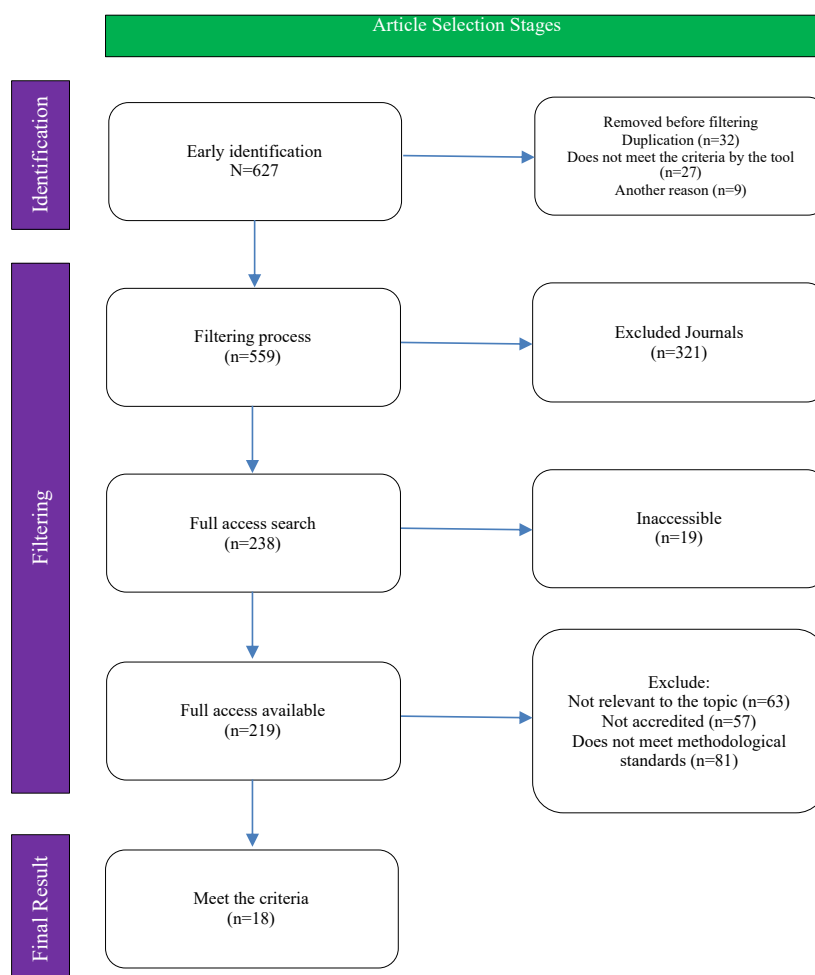


Figure 1. Article Selection Stages

Of the 18 articles that passed the inclusion stage, 10 were selected for presentation in Table 1 as a representation of the most relevant research findings. These articles were chosen because they reflect the diversity of research designs, subjects, and approaches regarding the effects of Curcuma

xanthorrhiza on appetite, calorie intake, and body weight, thus providing a comprehensive overview of the topics covered in this systematic literature review.

Table 1. Articles that Passed Selection

No	Author (Year)	Design and Subject	Intervention	Outcome	Relevant Findings
1	Rizqiyah & Rinata (2004)	Experimental, Toddler	Curcuma acupressure	+ Weight	Combination of interventions increases toddler weight
2	Mardiana et al. (2024)	Quasi-experimental, children 1–5 years	Curcuma porridge	Appetite	There was a significant increase in appetite
3	Sakti & Maulina (2025)	Quasi-experimental, Children 3–5 years	Vitamin Curcuma	Appetite	Giving Curcuma increases toddlers' appetite
4	Saputri et al. (2023)	Experimental, Toddler	Curcuma extract	Appetite	Curcuma extract increases appetite
5	Novikasari & Setiawati (2022)	Experimental, malnourished children	Curcuma honey	+ Weight	Effective combination to increase weight
6	Nissa et al. (2025)	Experimental, teenager	Curcuma drink	Diet-Pattern & Weight	Influence on consumption patterns and body weight
7	Lim et al. (2024)	Experimental, livestock	Curcuma xanthorrhiza	Food intake	Increase post-transport feed intake
8	Permana et al. (2023)	Experimental, mice	Curcuma emulsion (amara)	Appetite	The amara effect increases the feeding response
9	Ilmawati et al. (2025)	Product formulation and testing	Javanese turmeric herbal medicine	Appetite	Effective formulation as an appetite stimulant
10	Avika & Abdullah (2025)	Systematic review	Curcuma	Digestive health	Supports appetite-enhancing mechanisms

Characteristics of the Reviewed Studies

The articles analyzed in this systematic literature review encompassed a variety of research designs, predominantly experimental and quasi-experimental, involving both human subjects and experimental animals. Most human studies used a pretest–posttest design with an intervention group, particularly in toddlers and early childhood, as reported by Mardiana et al. (2024), Sakti and Maulina (2025), Saputri et al. (2023), and Novikasari and Setiawati (2022). Furthermore, studies based on systematic reviews and narrative literature discussed the pharmacological mechanisms and health benefits of Curcuma xanthorrhiza (Adawiyah et al., 2025; Avika & Abdullah, 2025).

The subjects in the reviewed studies varied, including toddlers and children aged 1–5 years, adolescents, and experimental animals such as mice, rats, and livestock. Research on toddlers generally focuses on changes in appetite and body weight after administration of temulawak in various dosage forms (Rizqiyah & Rinata, 2004; Mardiana et al., 2024; Sakti & Maulina, 2025). In adolescents and livestock, studies assess dietary or feed intake and body weight changes as indicators of nutritional response (Nissa et al., 2025; Lim et al., 2024). Meanwhile, experimental studies in experimental animals have been used to evaluate the biological mechanisms of temulawak, particularly its effects on appetite and physiological digestive responses (Permana et al., 2023).

The dosage forms of *Curcuma xanthorrhiza* used in research are quite diverse, including rhizome extract, temulawak porridge, vitamins or liquid preparations, powdered drinks, and instant dry herbal medicine formulations. Variations in dosage and duration of intervention are applied according to the characteristics of the research subjects and the study objectives (Ilmawati et al., 2025). The main variables observed in the study included appetite, food or calorie intake, and changes in body weight, which are generally used as indicators of the effectiveness of *Curcuma xanthorrhiza* in improving nutritional status.

The Effect of *Curcuma xanthorrhiza* on Appetite

Based on a systematic review of articles meeting the inclusion criteria, most studies showed that administering *Curcuma xanthorrhiza* had a positive effect on increasing appetite (Rizqiyah & Rinata, 2024). This finding was consistent across both human and animal studies, with varying study designs, dosages, and intervention durations. The consistency of results across these studies suggests that Javanese turmeric has significant biological potential in influencing appetite regulation, making it worthy of consideration as a supportive herbal agent for conditions of decreased appetite (Adawiyah et al., 2025).

The increase in appetite observed in various studies is demonstrated through several indicators, such as increased meal frequency, increased food intake, and increased response to food stimuli (Mardiana et al., 2024). In animal studies, this increase is generally measured by higher daily food consumption after administering *Curcuma xanthorrhiza*. Meanwhile, in human studies, appetite improvement is characterized by an improvement in subjective appetite, reduced food aversion, and an increased desire to eat regularly. Physiologically, the appetite-boosting effect of *Curcuma xanthorrhiza* is closely related to its bioactive compounds, particularly curcuminoids and xanthorrhizol (Simamora et al., 2022). These compounds are known to stimulate bile secretion and increase the production of digestive enzymes, such as amylase, lipase, and protease. This activation of the digestive system contributes to a more efficient digestive process, thus sending stronger and more consistent hunger signals.

In addition to increasing bile and digestive enzyme secretion, *Curcuma xanthorrhiza* also plays a role in improving overall gastrointestinal health (Simamora et al., 2024). Several studies report that administering Javanese turmeric can reduce gastrointestinal complaints, such as fullness, bloating, nausea, and mild indigestion (Talentia & Yunita, 2024). This improvement in conditions creates a sense of comfort while eating, which indirectly contributes to an increased appetite, especially in individuals with functional digestive disorders. The results of this study align with empirical practice in traditional Indonesian medicine, where temulawak has long been used as an appetite-enhancing herbal medicine (Adawiyah et al., 2025). This use is commonly applied to children with poor appetite, individuals recovering from illness, and people with digestive disorders. This alignment between scientific evidence and traditional practice strengthens *Curcuma xanthorrhiza*'s position as a medicinal plant with a scientific basis for increasing appetite, and is also relevant for development in the context of traditional medicine-based healthcare.

Effect of *Curcuma xanthorrhiza* on Calorie Intake

Based on the results of a systematic review of peer-reviewed articles, the increased appetite triggered by the administration of *Curcuma xanthorrhiza* indirectly impacts calorie intake (Sakti & Maulina, 2025). Several studies report an increase in the amount of food consumed and an increase in total daily energy after curcuma intervention. These findings indicate that the effects of curcuma extend beyond the subjective aspect of increased appetite, leading to a quantitatively measurable increase in energy intake (Saputri et al., 2023). This increase in calorie intake is thought to be closely related to improved digestive system function induced by the active compounds in *Curcuma xanthorrhiza* (Permana et al., 2023). Stimulation of bile secretion and digestive enzymes plays a role in enhancing the breakdown and absorption of nutrients, enabling the body to utilize food more optimally (Kemit et al., 2024).

This increase in calorie intake is likely due not only to greater food intake but also to improved nutrient absorption efficiency. Furthermore, several studies have reported that administering Javanese turmeric can reduce gastrointestinal complaints, such as bloating, nausea, and stomach discomfort,

which often inhibit food consumption (Marlina, 2025). This reduction in complaints allows subjects to consume more adequate portions and more regularly. Thus, *Curcuma xanthorrhiza* not only plays a role in increasing calorie intake by stimulating appetite but also by creating a more conducive digestive tract environment for food consumption (Lim et al., 2024). Although most studies show a trend toward increased calorie intake, the magnitude of the effect varies across studies. This variation is likely influenced by differences in the dose of Javanese turmeric, the dosage form used, the duration of the intervention, and the characteristics of the study subjects, such as age, baseline health conditions, and nutritional status. Therefore, the results of this study indicate that the increase in calorie intake due to the administration of Javanese turmeric *xanthorrhiza* is contextual and requires further standardization to obtain more consistent results (Avika & Abdullah, 2025).

Effects of *Curcuma xanthorrhiza* on Body Weight

A literature review indicates that increased appetite and calorie intake following *Curcuma xanthorrhiza* administration contributed to weight changes in study subjects (Sakti & Maulina, 2025). This effect was particularly evident in subjects with low baseline body weight, nutritional disorders, or weight loss due to certain diseases. These findings indicate that Javanese turmeric has the potential to act as a supportive agent in efforts to improve nutritional status by increasing energy consumption and utilization.

Research by Rosidi et al. (2024) reported significant weight gain following *Curcuma xanthorrhiza* intervention, particularly in studies with relatively long administration durations. This suggests that the effects of Javanese turmeric on weight are cumulative and require a certain amount of time before significant changes can be measured (Nissa et al., 2025). The duration of the intervention is a crucial factor, as weight gain depends not only on short-term increases in energy intake but also on the body's metabolic adaptations. In addition to duration, the magnitude of weight gain is also influenced by the dosage and dosage form of *Curcuma xanthorrhiza* used in each study. Studies with more standardized doses and dosage forms with better bioavailability tend to show more consistent results. This indicates that the effectiveness of turmeric on weight loss depends heavily on how the intervention is administered, necessitating standardization in its use (Novikasari & Setiawati, 2022).

On the other hand, several studies found no significant changes in weight despite increased appetite and calorie intake. These findings suggest that weight loss is influenced not only by energy intake but also by other factors such as basal metabolic rate, physical activity level, and the subject's overall health (Oshakbayev et al., 2025). Furthermore, age, body composition, and the presence of comorbidities can also influence the weight response to turmeric intervention. Overall, the results of this systematic literature review indicate that *Curcuma xanthorrhiza* has the potential to support weight gain, particularly in certain conditions accompanied by appetite disorders and poor nutritional status (Ilmawati et al., 2025). However, the variation in results between studies underscores the need for further research with more robust designs, adequate intervention duration, and more comprehensive measurement parameters to ensure the consistent effectiveness of turmeric on weight change.

Overall, the results of this systematic literature review indicate that *Curcuma xanthorrhiza* has potential as a herbal agent that plays a role in increasing appetite and calorie intake. Improvements in both of these variables, under certain conditions, can contribute to weight change, particularly in individuals with appetite disorders or low nutritional status. The relationship between improved digestive function, energy intake, and weight change suggests that the effects of temulawak are multidimensional and interrelated. The findings of this study reinforce the concept of traditional Indonesian medicine, which places temulawak as an important medicinal plant in maintaining digestive health and supporting improved nutritional status. The empirical use of temulawak as an appetite-enhancing herbal medicine has a scientific basis that can be explained through physiological mechanisms, such as stimulation of bile secretion and increased nutrient absorption efficiency. This alignment between traditional practices and scientific evidence demonstrates the relevance of temulawak in traditional medicine-based healthcare systems.

From a vocational education perspective, the results of this systematic literature review have practical implications for the development and utilization of safe, effective, and evidence-based herbal preparations. Temulawak has the potential to be developed into a phytopharmaceutical product or a standardized traditional preparation that can be used to support nutritional therapy. This aligns with the

role of vocational education graduates in applying knowledge in a practical and contextual manner in society. Although most studies show positive results, the variation in findings between studies underscores the need for standardization of dosage, dosage form, and duration of *Curcuma xanthorrhiza* interventions. Furthermore, further research with more robust methodological designs, particularly human clinical trials, is needed to strengthen the scientific evidence regarding the effectiveness of Javanese turmeric. These efforts are crucial to ensure that the use of *Curcuma xanthorrhiza* can be carried out optimally, safely, and scientifically justified.

CONCLUSION

Based on the results of a systematic literature review, it can be concluded that *Curcuma xanthorrhiza* has potential as a herbal agent that plays a role in increasing appetite. This increased appetite is related to Javanese turmeric's ability to improve digestive system function by stimulating bile secretion and digestive enzymes, thus creating conditions that support more optimal food consumption. The increased appetite induced by *Curcuma xanthorrhiza* subsequently contributes to increased calorie intake. This effect indicates that Javanese turmeric not only affects the subjective aspect of appetite but also impacts the amount of energy consumed and utilized by the body. Thus, Javanese turmeric has the potential to support improved nutritional status, particularly in individuals with inadequate energy intake. This study also showed that increased appetite and calorie intake due to the administration of *Curcuma xanthorrhiza* can impact weight changes, particularly in subjects with initial low body weight or nutritional disorders. However, these weight changes are influenced by various factors, such as intervention duration, dosage, dosage form, and subject characteristics, resulting in varying results across studies. Overall, *Curcuma xanthorrhiza* has the potential to be used as a supporting herbal agent to improve appetite and nutritional status in the context of traditional Indonesian medicine. However, further research with a more robust methodological design, particularly human clinical trials, as well as standardization of dosages and preparations, is needed to strengthen the scientific evidence and support the safe and effective use of temulawak.

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