

Review of Vikasi Karma of Kodrava with Special Reference to *Paspalum scrobiculatum*

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DOI: <https://doi.org/10.51244/IJRSI.2026.13010147>

Received: 22 January 2026; Accepted: 28 January 2026; Published: 10 February 2026

ABSTRACT

Ayurveda, the ancient Indian system of medicine, classifies food and medicinal substances according to their inherent properties, tastes, potency, post-digestive effect, and specific actions. One such specific action is **Vikasi Karma**, which refers to the property causing laxity, looseness, or dilatation in bodily tissues, particularly the muscles, tendons & intestines. **Kodrava** (*Paspalum scrobiculatum* Linn.), a minor millet recognized in Ayurvedic texts, is attributed with certain Vikasi properties influencing musculoskeletal system, gastrointestinal motility and digestive health. This review compiles classical Ayurvedic literature, pharmacological insights, and modern perspective, especially the toxicological relevance of ergot contamination to understand the Vikasi Karma of Kodrava. ^[1-6]

Keywords: *Kodrava*, *Vikasi Karma*, musculoskeletal system, *Ayurvedic* pharmacology.

INTRODUCTION

In *Ayurveda*, **Karma** denotes the specific physiological or therapeutic action of a substance (*dravya*) on the human body.

Vikasi Karma is defined as an action that induces expansion, flaccidity, or reduction in compactness of bodily tissues, particularly within the musculoskeletal system and the gastrointestinal tract.

Substances possessing this action are often linked with loosening bowel movements, facilitating the movement of *Vata dosha*, and sometimes depleting *Kapha* or *Medas*.

Kodrava, is listed amongst **Shukadhanya Varga** in classical texts like *Charaka Samhita* and *Bhavaprakasha*. It has been traditionally consumed in many parts of India, especially during fasting or as a staple in semi-arid regions. ^[2,3]

In *Ayurveda*, the actions of a *dravya* are understood through *Rasa*, *Guna*, *Veerya*, *Vipaka*, and *Karma*.

PROPERTIES OF KODRAVA

The following table shows the correlation between the Ayurvedic properties and the modern nutritional interpretations derived from Indian food composition studies ^[8, 9, 10] and polyphenol analyses of millets. ^[11]

Parameter	Ayurvedic Perspective	Modern Correlation
Name	<i>Kodrava (Paspalum scrobiculatum)</i>	Kodo millet

Rasa	<i>Kashaya , Tikta</i>	Astringent taste due to polyphenols; bitterness from certain alkaloids
Guna	<i>Laghu , Ruksha</i>	Low fat content, high fiber, low moisture content
Veerya	<i>Sheeta</i>	Cooling effect on metabolism; slow glucose release
Vipaka	<i>Katu</i>	Mildly stimulating on digestive enzymes
Dosha Effect	Pacifies <i>Kapha & Pitta</i> ; aggravates <i>Vata</i> if excess	Reduces sluggish digestion , but can cause gas
Primary Karma	<i>Grahi, Lekhana, mild Vikāśī</i>	Fiber aids in intestinal peristalsis and clearing channels
Vikasi Effect	Loosens compacted stool; enhances <i>Vata</i> movement if excessive	High insoluble fiber improves bowel motility; may cause bloating if overconsumed
Therapeutic Uses	<i>Kapha</i> -related digestive issues, obesity, detox regimens	Weight management, blood sugar regulation, mild laxative effect
Cautions	Avoid in <i>Vata</i> disorders, debility, chronic diarrhea	Avoid in IBS-D , severe underweight, excessive dryness
Adjuvants	Ghee, sesame oil, moistening soups to balance dryness	Combining with healthy fats improves nutrient absorption & reduces dryness

Kodo millet:



(1)



(2)



(3)



(4)

Ergot Infestation on Kodo millet



Kodrava is highly susceptible to **Paspalum ergot**, caused by *Claviceps paspali*, which replaces the grain with sclerotia containing ergot alkaloids. [13–15]

VIKASI KARMA OF KODRAVA

The classical reference states:

“संधिबन्धि धिधिलाधि करोधि धिकासी िि ।
धिधिलश्च्य ओजस्य ििभ्यो या क्रमूक कोद्रिः ॥”

— *Śharangadhara Samhita* [12]

Kodrava's *Laghu* and *Ruksha* qualities produce mild loosening effects on tissues. It alleviates compacted stool in *Kapha*-related constipation and supports *Srotoshodhana*. However, excessive use can cause *Udavarta*, flatulence, and dryness due to *Vata* aggravation. [1, 3, 7]

Vikasi Karma of *Kodrava* can be Correlated with Ergotism as per Modern Texts.

ERGOTISM IN HUMANS

It is a condition caused by ingesting grains like Kodo millet infected with the ergot fungus. This fungus turns grains into dark, hard structures called **ergots** which contain poisonous alkaloids namely Ergocristine, Ergotamine, Ergovaline which affects human body respectively as Ergotamine is primarily used to treat migraine due to its ability to constrict the blood vessels but can also cause side effects like nausea, vomiting, dizziness, chest pains, and myocardial infarction [17,18]. Ergotism manifests in two main forms, gangrenous & convulsive. With symptoms ranging from coldness & tingling in extremities to hallucinations & muscle spasms.

Based on current food safety regulations and guidelines, the safe levels of Ergot in human food is generally considered to be 0.05% or less by weight for unprocessed cereals such as wheat, barley, oats, kodo millet.

Side-effects of each Alkaloids separately are as follows:

Ergotamine: causes vasoconstriction, nausea, and cardiac complications ^[14, 16]

Ergocristine - having ability to inhibit ovulation and implantation.

Ergovaline – causing symptoms like reduces milk production, heat intolerance and reproductive issues. It's also known to cause vasoconstriction, potentially impacting blood flow and body temperature regulation

Historical outbreaks such as the “Dancing Plague” have been linked to ergot poisoning. ^[19] Ergotism in humans and cattle are caused by several species of *Claviceps* that infect rye and other cereal grains. Symptoms in humans vary greatly and are generally classified as convulsive, gangrenous, or gastrointestinal (enteric). The prevalence of ergotism has decreased as knowledge of the fungus has increased, mainly through implementation of regulations and advances in milling procedures. However, outbreaks in humans have recently occurred in lower socioeconomic populations of Ethiopia (1977 and 2001) and India (1975) with devastating results.

DISCUSSION

Classical *Ayurvedic* texts identify *Kodrava* as a *Vikasi dravya*. Pure *Kodrava* displays mild *Vikasi* action, mainly due to its *Laghu* and *Ruksha* attributes. However, ergot-infested *Kodrava* may cause severe neuromuscular and vascular toxicity analogous to extreme pathological *Vikasi* effects. Though *Ayurveda* has not mentioned about the ergot infestation in *Kodrava* separately, it seems they were aware of the changes in the Kodo millet after the ergot infestation and the symptoms arising out of the consumption of such infested grains, the condition we now know as Ergotism. Integrating *Ayurvedic* and modern perspectives is essential for safe and rational use of such millets as a food supplement.

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