

# Nutritional analysis of Agroecological and Conventional Practice Rice varieties of White Phka Rumdoul, Red Phka Rumdoul, and Kroches in Preah Vihear Province

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## INTRODUCTION

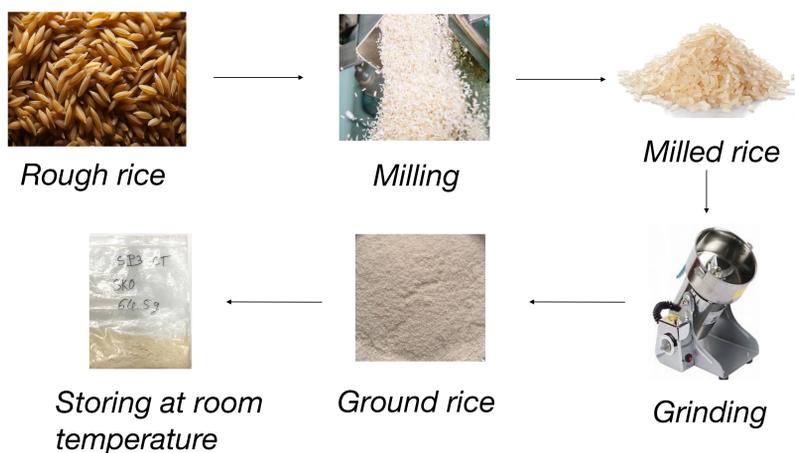
Rice supplies more than 21% of human energy demands and up to 76% of Southeast Asian energy intake, feeding around half of the world's population. Conventional farming rely on chemical fertilizers and pesticides have an impact on soil fertility. Sustainable agriculture is becoming a popular world for productive, cost-effective, environmentally friendly, and socially desired agricultural. Green manures represent a promising approach to maintaining sustainable nutrients for crop growth.



## OBJECTIVES

This study aims to evaluate and compare the nutritional composition of rice cultivated using agroecological and conventional practices in Preah Vihear province. Three traditional rice varieties including White Phka Rumdoul, Red Phka Rumdoul, and Kroches were selected for analysis. Key nutritional parameters assessed include moisture, ash, fiber, fat, protein, carbohydrates, and reducing sugar content.

## RESEARCH METHODOLOGY



## RESEARCH RESULTS

The table indicates the nutritional value of agroecological (GM) and conventional practice rice (CT) of White Phka Rumdoul (WPR), Red Phka Rumdoul (RPR), and Kroches (KC) in Preah Vihear Province.

Varieties	%M	%A	%F	%Fa	%P	%C	%S
WPR CT	10.30±1.36	0.74±0.45	0.66±0.24	1.74±0.42	6.77±0.89	80.57±1.33	4.95±0.25
WPR GM	9.56±0.69	0.60±0.39	0.59±0.42	1.85±0.63	6.66±0.73	81.16±1.16	4.94±0.17
RPR CT	10.01±1.79	0.90±0.39	0.59±0.31	2.11±0.29	6.86±0.52	80.09±1.73	4.95±0.13
RPR GM	8.94±0.38	1.03±0.49	0.89±0.25	2.53±0.29	6.27±0.87	81.20±0.94	4.91±0.19
KC CT	9.63±0.50	0.54±0.28	0.55±0.18	2.26±0.42	5.98±0.75	81.57±1.35	4.98±0.17
KC GM	9.30±0.50	1.66±1.62	0.78±0.24	2.11±0.16	7.11±0.20	79.48±2.41	4.90±0.21

### White phka rumdoul

White Phka Rumdoul rice from conventional cultivate (CT) has 10.30±1.36% moisture, 0.74±0.45% ash, 0.66±0.24% fiber, 1.74±0.42% fat, 6.77±0.89% protein, 80.57±1.33% carbohydrate, and 4.95±0.25 reducing sugar. Meanwhile, the agroecological rice has 9.56±0.69% moisture, 0.60±0.39% ash, 0.59±0.42% fiber, 1.85±0.63% fat, 6.66±0.73% protein, 81.16±1.16% carbohydrate, and 4.94±0.17% reducing sugar. In comparison, (CT) rice is higher than (GM) rice in moisture, ash, fiber, and fat however, carbohydrate and reducing sugar show no significant difference.

### Red Phka Rumdoul

Red Phka Rumdoul rice from (CT) has 10.01±1.79% moisture, 0.90±0.39% ash, 0.59±0.31% fiber, 2.11±0.29% fat, 6.86±0.52% protein, 80.09±1.73% carbohydrate, and 4.95±0.13% reducing sugar. In contrast, the agroecological rice has 8.94±0.38% moisture, 1.03±0.49% ash, 0.89±0.25% fiber, 2.53±0.29% fat, 6.27±0.87% protein, 81.20±0.94% carbohydrate, and 4.91±0.19% reducing sugar. In comparison, (GM) rice is higher than (CT) rice in moisture, ash, fiber, fat and carbohydrate.

### Kroches

Kroches rice from (CT) has 9.63±0.50% moisture, 0.54±0.28% ash, 0.55±0.18% fiber, 2.26±0.42% fat, 5.98±0.75% protein, 81.57±1.35% carbohydrate, and 4.98±0.17% reducing sugar. However, agroecological rice obtains 9.30±0.50% moisture, 1.66±1.62% ash, 0.78±0.24% fiber, 2.11±0.16% fat, 7.11±0.20% protein, 79.48±2.41% carbohydrate, and 4.90±0.21% reducing sugar. In comparison, (GM) rice is higher than (CT) rice in, ash, fiber, and protein.

## CONCLUSION

Agroecological rice slightly contained higher nutritional value such as ash, fiber, and fat, in some varieties, while moisture content generally lower. Overall, Agroecological practice may enhance specific nutrients in rice from Preah Vihear province.