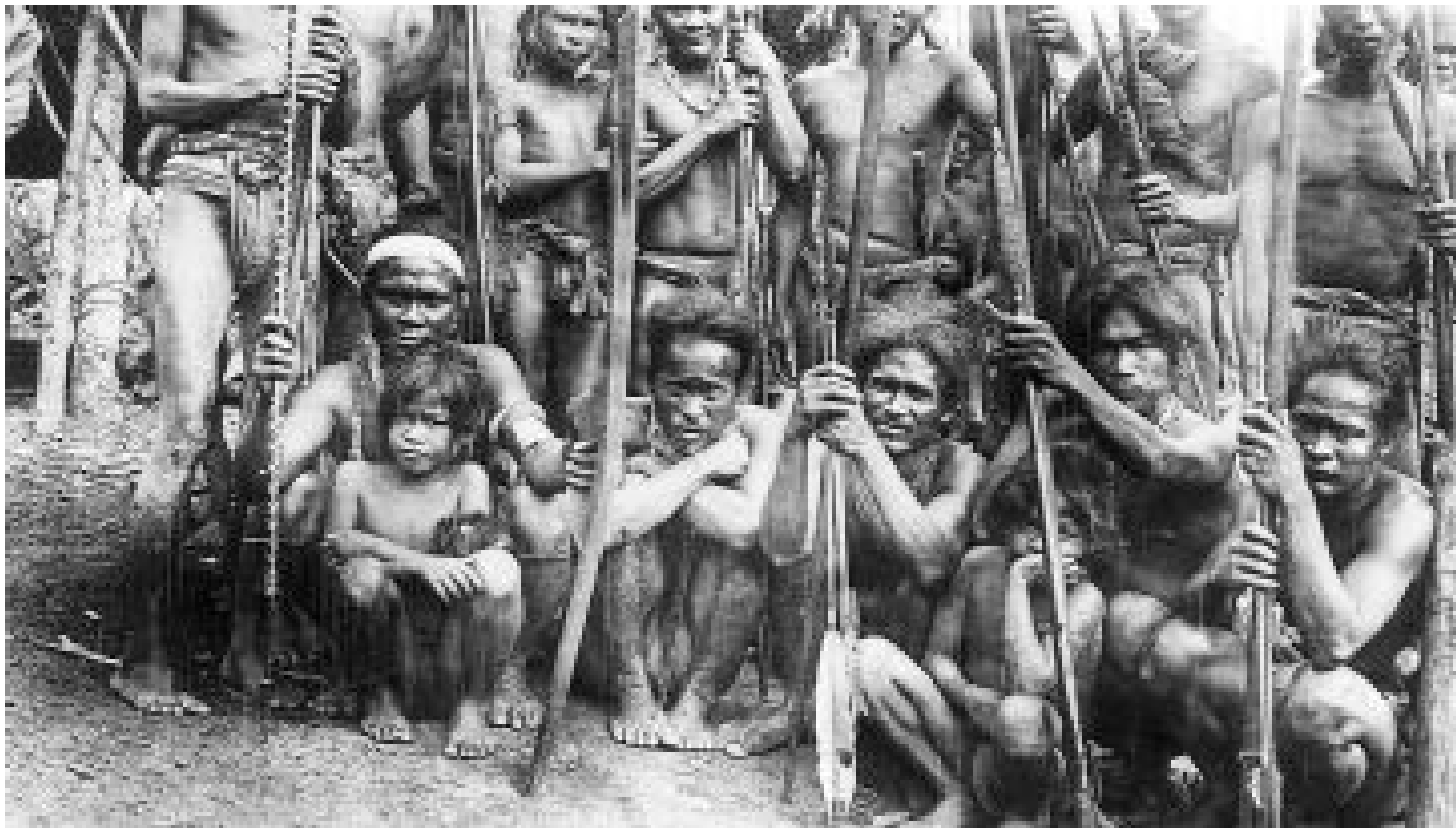


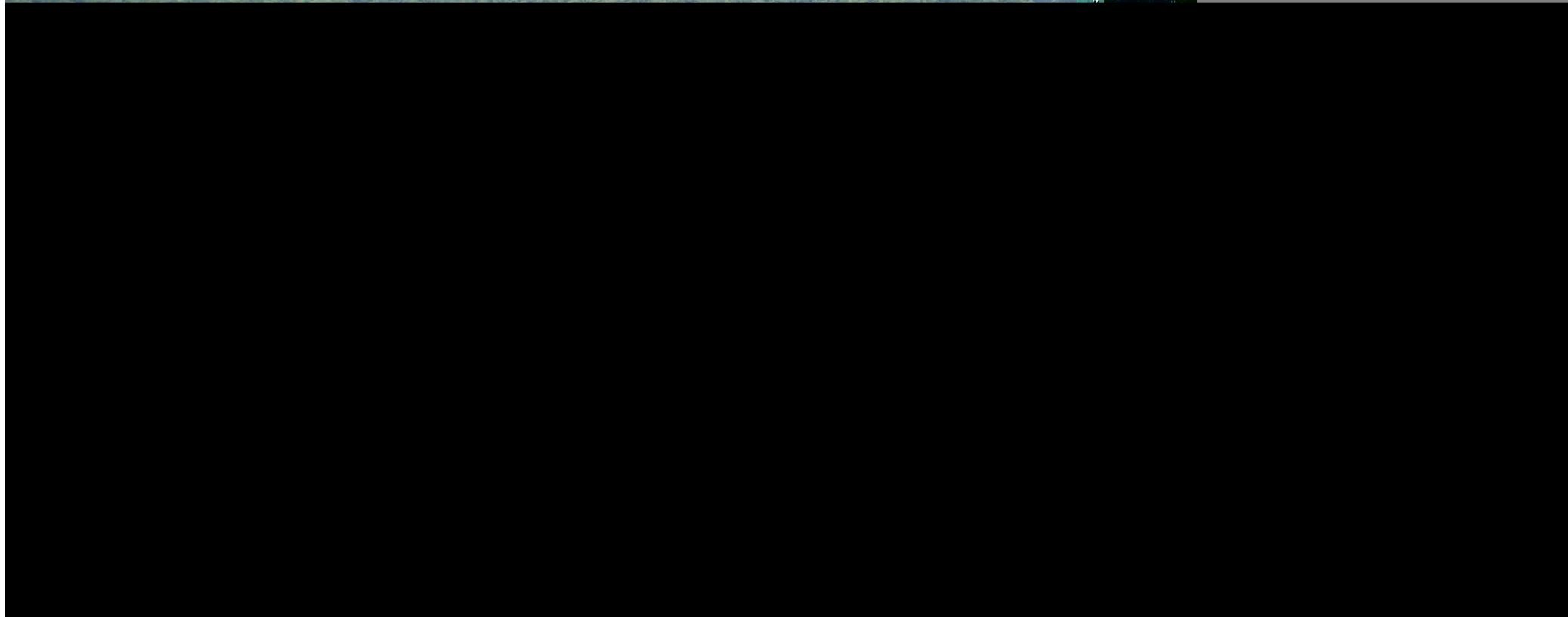
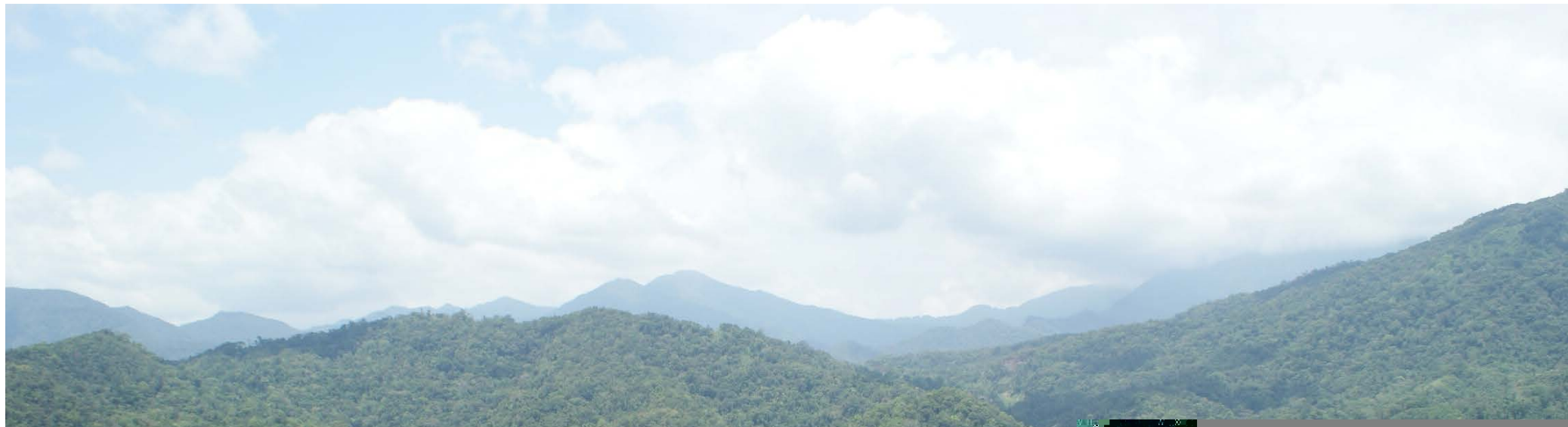
EFFECTS OF TILLAGE METHODS, FERTILIZER SOURCES, AND GENOTYPES ON THE YIELD AND YIELD COMPONENTS OF UPLAND RICE OF THE BUGKALOT PEOPLE OF QUIRINO PHILIPPINES

Dr. Arnold D. Pitpitunge and Dr. Filomena K. Reyes
Philippines Science High School-Central Luzon Campus
Pampanga State Agricultural University









R.

V




Traditional upland rice productions of the Bugkalot people of Quirino Province, Philippines are usually in new *slash-and-burn* farms under zero tillage without fertilizer input. Decrease in yield indicates the need to clear another area of the forest for rice production.





This study evaluated the effects of tillage methods, fertilizer sources and genotypes on the yield and yield components of upland rice of the Bugkalot people

- **This study used split-split plot Randomized Complete Block Design (RCBD) that included tillage method (main plot), fertilizer source (sub-plot), and genotype (sub-sub-plot).**



Block: 752.5 m²
main plot: 376.25m².
sub-plots: 80 m².
sub-sub plots: 20 m².



T_1 (Tillage method 1) single pass
of disc plow.

T_2 (Tillage method 2) single pass
of disc plow plus spade and hoe
cultivation

F_1 –zero fertilizer (Control),

F_2 - inorganic fertilizer,

F_3 - organic fertilizer, and

**F_4 - 50% inorganic and 50%
organic fertilizers**



LEP-O



KUITAY



PINILISA



NSIC RC23

YIELD COMPONENTS

PLANT HEIGHT AT MATURITY

NUMBER OF TILLERS PER HILL

NUMBER OF PANICLES PER SQUARE METER

NUMBER OF FILLED GRAINS PER PANICLE

NUMBER OF UNFILLED GRAINS PER PANICLE

1000-GRAIN WEIGHT IN GRAMS

HARVEST INDEX

GRAIN YIELD

RESULT

- **Tillage method 1 (single pass of disc plow) produced lower number of unfilled grain per panicle and higher 1000-grain weight than tillage method 2 (single pass of disc plow with spade and hoe cultivation).**

Table 1: The yield and yield components of upland rice as affected by tillage method	T1 (Tillage Method 1)	T2 (Tillage Method 2)
Number of unfilled grains per panicle	50.42 b	53.48 a
1000-grain weight (grams)	23.40a	24.86b

Fertilizer sources have no influence on upland rice yield. Genotype affect all the yield parameters of upland rice.

Table 2: The yield and yield components of upland rice as affected by genotype

	Plant height (cm) at maturity	Number of tillers per hill	Number of panicles per m ²	Number of filled grains per panicle	Number of unfilled grains per panicle	1000-grain weight (grams)	Harvest index (%)	Grain yield
G1 (Lep-O)	132.97 b	12.65 b	107.75 bc	96.65 c	28.32 c	27.26 a	26.11bc	0.96c
G2 (Kuitay)	134.73 b	11.53 c	102.04 c	79.18 c	52.38 b	28.01 a	23.59c	1.81b
G3 (Pinilisa)	140.86 a	13.04 b	115.75 b	141.47 a	71.63 a	17.92 c	30.65b	2.69a
G4 (NSIC RC23)	108.86 c	15.08 a	139.83 a	116.53 b	55.48 b	23.31 b	36.35a	3.01a

* Means with the same letter are not significantly different

1000-grain weight

- **Tillage methods x the combination of organic and inorganic fertilizers**
- **Tillage methods x Kuitay**

GRAIN YIELD

- **Tillage methods x NSIC RC23 x Fertilizer sources**
- **Zero fertilizer and organic fertilizer produce higher grain yield of NSIC RC23 under tillage methods 1 and 2.**

CONCLUSION

Yield is affected by genotype and the yield components are influenced by genotypes and tillage method but not by fertilizer sources. 1000-grain weight and grain yield are influenced by the interactions of of the different treatments

THANK YOU FOR LISTENING

