

Carefully read the description of the experiment below. Be prepared to answer the questions that follow the design description as a class quiz.

Cnidocolus acontifolus (Americana leaf) leaves are used as soup condiment in Nigeria either in the processed or unprocessed forms. This study aims at assessing the effect of some post-harvest processes on the nutrient and antioxidant potentials of the leafy vegetable.

Fresh *Cnidocolus acontifilous* leaves were subjected to a control and 4 conventional food processes. The processes were applied to a portion (100g) from randomly chosen leaves. One process (1) was soaking in water for 24 hours and another (2) was blanched in boiling water for 5 minutes. Additional 100g portions were mechanically squeezed either with 5.0g salt (3, AWS=Abrasion with salt) or without salt (4, AWOS). One last 100g portion (5) served as the control (unprocessed). Both the processed and unprocessed techniques were subsequently analyzed on three 100 g portions for each process.



Numerous components of nutrient composition (ash, fat, moisture and crude fiber) of the processed and unprocessed vegetables were determined along with the protein content. Numerous other components were also measured (Zn, Na, Mg, Fe, K, Mn and Ca, vitamin C, total phenols, etc), but for our purpose we will consider only protein content.

Three replicate portions of each of the 5 food process techniques were measured for protein content.

Table 1: Proximate composition of *Cnidocolus acontifolus* (Americana) leaves (% wet weight)

Sample	Moisture	Crude fibre	Ash	Protein	Fat
Unprocessed	83.4±0.2 ^b	2.4±0.2 ^b	2.3±0.1 ^b	7.8±0.2^a	1.6±0.1 ^b
Processed	86.5±0.4 ^a	2.9±0.4 ^a	1.4±0.2 ^c	6.9±0.3^b	1.8±0.3 ^b
Blanched	86.1±0.3 ^a	1.4±0.1 ^c	1.1±0.1 ^c	6.8±0.2^b	2.6±0.2 ^a
Soaked	81.1±0.2 ^c	2.9±0.3 ^a	1.0±0.1 ^c	5.2±0.3^c	2.7±0.4 ^a
AWOS	86.0±0.2 ^a	2.7±0.2 ^b	4.1±0.2 ^a	4.0±0.2^d	1.9±0.1 ^b

Values represent means of triplicate. Values with the same alphabet in the same column are not significantly different (P>0.05)

Answer choices:	(A) 100 gram portion	(B) protein content	(C) group
	(D) process	(E) leafy vegetable	(F) intake energy

Name _____ Quiz Number _____ Date _____ / _____ / 2012

Circle the appropriate letter for each question.

- 1) What is the experimental unit for this experiment? A B C D E F
- 2) What is the sampling unit for this experiment? A B C D E F
- 3) What is the dependent variable for this experiment? A B C D E F
- 4) What is the treatment variable for this experiment? A B C D E F
- 5) If the design is RBD, what are the blocks? A B C D E F NA
- 6) Does it seem more likely that the treatments are fixed or random? (A) fixed (B) random
- 7) What is the treatment arrangement for this experiment? (A) single factor (B) factorial (C) nested
- 8) What is the experimental design? (A) CRD (B) RBD (C) LSD (D) Split-plot (E) Repeated Measures
- 9) The treatment degrees of freedom are _____ .
- 10) The degrees of freedom for the error used for testing treatments are _____ .