ALLSCHOOLABS
SCIENTIFIC
Fastest & Most Credible

104 Western Ave, Yaba, Lagos.
Offices in Lagos, Ogun & Ibadan
Info@allschoolabs.com
www.allschoolabs.com
+234 9017705105
+234 8163383206
RC 3108753

Table 1: Component analysis Bamboo sample

S/N	PARAMETER	UNIT	CWR	WRP	SWR	SMR
1	HEMICELLULOSE	%	28.58	25.32	21.83	26.64
2	LIGNIN	%	32.23	29.19	33.20	34.96
3	CELLULOSE	%	39.19	45.49	44.97	38.4
4	HOLOCELLULOSE	%	67.77	70.81	66.8	65.04

METHODS

Lignin content

About 1 g (exactly weighed) of the sample was put in a 100 ml beaker and then treated with 20ml of 72% sulfuric acid, added to the sample drop by drop with constant stirring by a small glass rod. After complete disintegration, the reaction is allowed to stand and the beaker is covered with a watch glass and left over night at room temperature. It was then transferred quantitatively to a 1 liter round bottom flask, diluted with 3% sulfuric acid, and boiled for four hours under reflux. The lignin is filtered on an ashless filter paper and washed with hot distilled water till neutrality, then gravimetrically estimated and ignited at 850°C for 45 minutes. The weight of ash is subtracted to give the ash free lignin per cent.

Hemicellulose: 1 g of extracted dried sample was transferred into a 250 mL Erlenmeyer flask. 150 ml of 20 g/l NaOH was added. The mixture was boiled for 3.5 h with distilled water. It was filtered after cooling through vacuum filtration and washed until neutral pH. The residue was dried to a constant weight at 105 oC in a convection oven. The difference between the sample weight before and after this treatment is the hemicellulose content (%w/w) of dry biomass

Cellulose

This is calculated as:

Cellulose = 100% - (Hemicellulose + lignin)

Holocellulose estimation

Holocellulose is the total carbohydrate fraction (cellulose and hemicellulose) of the raw material.