

formula to calculate% composting

To prepare an organic fertilizer, we must mix materials rich in nitrogen, with other materials rich in carbon. There is a mathematical formula that allows calculating how many parts by weight of the carbon rich material ($C / N > 30$), must enter for each part of material rich in nitrogen ($C / N < 30$), for the balanced composition of a good fertilizer organic.

Considering that the ideal relationship for prepare a good fertilizer is the one of $C / N = 30/1$, then the formula would be the following:

X = Quantity in weight of the material rich in carbon, for each part of nitrogen

N_n =% nitrogen, in the material rich in N. (see table)

C_n =% carbon, in the material rich in N. (see table)

N_c =% nitrogen, in the material rich in C. (see table)

C_c =% carbon, in the material rich in C. (see table)

Example of the calculation of a credit:

You want to prepare a subscription using:

one) Gallinaza + cane bagasse or

two) Gallinaza + coffee cisco or

three) Gallinaza + cane bagasse + coffee cisco.

Questions :

How many parts they must be mixed in weight, of each carbon-rich material for one part by weight of chicken manure rich in nitrogen?

Answer :

In the table of the composition of the different materials, we obtain the following information:

Gallinaza: N = 2.76%. C = 29.01%. C / N = 11/1

Bagasse cane: N = 1.07%. C = 39.59%. C / N = 37/1

Cisco of coffee: N = 0.62%. C = 51.73%. C / N = 83/1

Conclusions:

one) 7.18 parts by weight of cane bagasse should be mixed or 1.62 parts by weight of cisco coffee, for each part in weight of chicken.

Two) For that matter, in which they want use the two types of carbon rich materials, you must mix 2 parts in weight of chicken manure + 7,18 parts by weight of cane bagasse

+ 1.62 parts by weight of coffee cisco.

AVERAGE COMPOSITION OF RICH MATERIALS IN NITROGEN

MATERIALS	MO%	C%	N%	C / N	P ₂ O ₅ %	K ₂ O%
COTTON SEEDS	95.62	54.96	4.58	12/1	1.42	2.37
SAWDUST GREEN	30.68	16.32	0.96	17/1	0.08	0.19
	86.08	45.24	3.77	12/1	1.07	NE
	88.89	49.02	2.58	19/1	0.19	NE
CAFÉ AFRECHO	90.46	50.60	2.30	22/1	0.42	1.26
CACAO CAPSULA	91,10	51,84	3.24	16/1	1.45	3.74
CAFÉ SEEDS	92.83	52.32	3.27	16/1	0.39	1.69
CUASIA RAMOS	93.61	52.35	3.40	15/1	1.08	2.98
CROTALARIA JUNCEA	91.42	50.70	1.95	26/1	0.40	1.81
BAGAZO BARLEY	95.07	51.30	5,13	10/1	1.30	0.15
POWDER LEATHER	92.02	43.75	8.74	5/1	0.22	0.44
PIG STYLE	53.10	29.50	1.86	16/1	1.06	2,23
BIRD STRETCH	52.21	29.01	2.76	11/1	2.07	1.67
HORSE STORE	96,19	25.50	1.67	18/1	1.00	1.19
FRUIT CANABALIA	88.54	48.45	2.55	19/1	0.50	2.41
GUANDUL PAJAS	55.90	52,49	1.81	29/1	0.59	1,14
GUANDUL SEEDS	96.72	54.60	3.64	15/1	0.82	1,89
WE LEAVE LEAVES	90.69	50.64	2.11	24/1	0.19	0.33
LAB LAB	88.46	50,16	4.56	11/1	2.08	NE
MUCUNA NEGRA RAMAS	90.68	49.28	2.24	22/1	0.58	2.79
MATERIALS	MO%	C%	N%	C / N	P ₂ O ₅ %	K ₂ O%
BAGAZO ORANGE	22.58	12.78	0.71	18/1	0.12	0.41
FEATHERS	88.20	54.20	13.55	4/1	0.50	0.30
RAMIO WASTE	60.64	35.26	3.20	11/1	3.68	4.02
BEER WASTE	95.80	53.04	4.42	12/1	0.57	0.10
BLOOD SECA	84.96	47.20	11.80	4/1	1.20	0.70
RESIDUAL TOBACCO	70.92	39.06	2.17	18/1	0,51	2.78
COTTON CAKE	92.40	51.12	5.68	9/1	2.11	1.33
CAKE OF MANI	95.24	53.55	7.65	7/1	1.71	1.21
OILCAKE	94.85	50,94	5.66	9/1	1.72	1.38
HIGUERILLA CAKE	92.20	54.40	5,44	10/1	1.91	1.54
CAKE OF SOYA	78.40	45.92	6.56	7/1	0.54	1.54
YUCA: BRANCHES AND LEAVES	91.64	52.20	4.35	12/1	0.72	NE

SOURCE: Paschoal, AD (1994)

NE = not found; MO = Organic matter; C = Carbon; N = Nitrogen;

C / N = Carbon / Nitrogen ratio.

P₂O₅ = Phosphorus content; K₂O = Potassium content of the dry mass material.

AVERAGE COMPOSITION OF RICH CARBON MATERIALS

MATERIALS	MO%	C%	N%	C / N	P ₂ O ₅ %	K ₂ O%
BLACK ACASIA	86.99	53.20	1.40	38/1	0.10	NE
WOOD SAW	93.45	51.90	0.06	865/1	0.01	0.01
RICE CASCARILLA	54.55	30.42	0.78	39/1	0.58	0.49
RICE STRAW	54.34	30.42	0.78	39/1	0.58	0.41
AVENUE CASCARILLA	85.00	47.25	0.75	63/1	0.15	0.53
AVENA PAJAS	85.00	47.52	0.66	72/1	0.33	0.91
COTTON CASCARILLA	96,14	53.00	1.06	50/1	0.23	0.83
BANANAS: SIZES	85.28	46.97	0.77	61/1	0.15	7.36
BAGAZO DE CAÑA	96,14	39.59	1.07	37/1	0.25	0.94
CACAO: CAPSULA	85.28	48.64	1.28	38/1	0.41	2.54
COFFEE: PULP	71.44	30.04	0.86	53/1	0.17	2.07
COFFEE: CISCO	88.68	51,73	0.62	83/1	0.26	1.96
CASTAÑA CASCARA	89.48	54.76	0.74	74/1	0.24	0.64
CENTENO CASCARILLA	96.24	46.92	0.68	69/1	0.66	0.61
CENTENO PAJAS	98.04	47.00	0.47	100/1	0.29	1.01
BARLEY CASCARILLA	85.00	47.60	0.56	85/1	0.28	1.09
BARLEY BARS	85.00	47.25	0.75	63/1	0.22	1.26
SHEEP	82,94	46.08	1.44	32/1	0.74	1.65
CATTLE BOYS	96,19	53.44	1.67	32/1	0.68	2.11
FRIJOL PAJAS	94.68	52,16	1,63	32/1	0.29	1.94
MATERIALS	MO%	C%	N%	C / N	P ₂ O ₅ %	K ₂ O%
MARRANEAN FERN	95.90	53.41	0.49	109/1	0.04	0.19
HIGUERILLA CAPSULAS	94.60	62.64	1.18	53/1	0.30	1.81
CORN: STRAWS	96.75	53.76	0.48	112/1	0.38	1.64

CORN: OLOTES	45.20	52.52	0,52	101/1	0.19	0.90
PASTO GORDURA	82.20	51.03	0.63	81/1	0.17	NE
PASTO GUINEA	93,13	49.17	1.49	33/1	0.34	NE
PASTO JARAGUA	92.38	50.56	0.79	64/1	0.27	NE
PASTO CIDRÓN	88.75	58.84	0.82	62/1	0.27	NE
PASTO MILLÓN	90.51	50,40	1.40	36/1	0.32	NE
MIMOSO PASTO	91.52	52,14	0.66	79/1	0.26	NE
PASTOAL PASTO	91,60	47.97	1,17	41/1	0,51	NE
PINEAPPLE: FIBERS	71.41	39.60	0.90	44/1	NE	0.46
WHEAT: CASCARILLA	85.00	47.60	0.85	56/1	0.47	0.99
WHEAT: STRAWS	92.40	51.10	0.73	70/1	0.07	1.28
YUCCA: ESTATE	58.94	32.64	0.34	96/1	0.30	0.44
YUCCA: RAMAS	95.26	52.40	1.31	40/1	0.35	NE
YUCA: SHELLS	96.07	53.50	0.50	107/1	0.26	1,27

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