

African birch (*Anogeissus leiocarpa*)

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Click on the "Nutritional aspects" tab for recommendations for ruminants, pigs, poultry, rabbits, horses, fish and crustaceans



Common names

African birch [English]; bouleau d'Afrique [French]; n'galama [Bambara]; ميشطة ملساء الثمرة [Arabic] ([Andary et al., 2005](#))

Species

Anogeissus leiocarpa (DC.) Guill. & Perr. [Combretaceae]

Synonyms

Anogeissus schimperi Hochst. ex Hutch. & Dalz. ([Andary et al., 2005](#)), *Conocarpus leiocarpus* DC. ([USDA, 2010](#)).

Feed categories

- Forage plants
- Forage trees

Related feed(s)

- Axlewood (*Anogeissus latifolia*)

Description

The African birch (*Anogeissus leiocarpa* (DC.) Guill. & Perr.) is a slow growing evergreen shrub or small to medium-sized tree, reaching up to 15-30 m in height. The bark is grey to mottled pale and dark brown, scaly, flaking off in rectangular patches, fibrous and exuding a dark gum. Leaves are alternate to nearly opposite, simple and entire, covered in dense silky hair when young. Flowers are pentamerous, pale yellow and fragrant. Fruits are rounded samaras, 4-10 mm × 6-11 mm × 2-2.5 mm, with 2 wings, and with a yellowish to reddish brown colour. They contain one seed, enclosed horizontally in a dense cone-like fructification ([Andary et al., 2005](#)).

The leaves are famous for their use as a yellow dye in ancestral Bogolan textile techniques in Mali and Burkina Faso. The wood makes an excellent fuel and yields good charcoal. The bark, leaves and roots have ethno-medicinal properties (antimicrobial and anthelmintic activity) and are usually taken as decoctions or aqueous extracts ([Andary et al., 2005](#); [Agaie et al., 2007](#)). Derivatives of ellagic acids ("anogelline") extracted from the bark have been shown to delay the degradation of collagen, and the tree is grown commercially since 2000 for the production of cosmetics in the Koro region of Burkina Faso ([Jansen et al., 2005](#)).

Anogeissus leiocarpa is a browse species in soudano-sahelian regions ([Tézenas du Montcel, 1994](#)).

Distribution

Anogeissus leiocarpa is found in a large range of ecosystems, from dry savannah to wet forest borders, in wooded grassland and bush land, and on riverbanks in Eritrea, Ethiopia, Sudan, Cameroon, Congo-Kinshasa, Benin, Côte d'Ivoire, Gambia, Ghana, Guinea, Mali, Niger, Nigeria and Senegal ([USDA, 2010](#); [Andary et al., 2005](#)).

Optimal growth conditions are 200-1200 mm annual rainfall, from sea level up to an altitude of 1900 m in fertile soils. It often grows gregariously on fertile soil in moist situations ([Andary et al., 2005](#)).

Environmental impact

Though very sensitive to fire, *Anogeissus leiocarpa* can be used for reforestation ([Andary et al., 2005](#)).

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Heuzé V., Tran G., Renaudeau D., Bastianelli D., 2016. *African birch (Anogeissus leiocarpa)*. Feedipedia, a programme by INRA, CIRAD, AFZ and FAO. <http://www.feedipedia.org/node/701> Last updated on March 15, 2016, 11:53

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Feed categories

All feeds

Forage plants

- ▶ Cereal and grass forages
- ▶ Legume forages
- ▶ Forage trees
- ▶ Aquatic plants
- ▶ Other forage plants

Plant products/by-products

- ▶ Cereal grains and by-products
- ▶ Legume seeds and by-products
- ▶ Oil plants and by-products
- ▶ Fruits and by-products
- ▶ Roots, tubers and by-products
- ▶ Sugar processing by-products
- ▶ Plant oils and fats
- ▶ Other plant by-products

Feeds of animal origin

- ▶ Animal by-products
- ▶ Dairy products/by-products
- ▶ Animal fats and oils
- ▶ Insects

Other feeds

- ▶ Minerals
- ▶ Other products

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Nutritional attributes

Anogeissus leiocarpa browse has a relatively low protein content of about 12-14% (Fall Touré, 1991; Yahaya et al., 2000; Kibon et al., 1993). Its leaf:stem ratio is also quite low (0.4) (Yahaya et al., 2000).

Potential constraints

The leaves of *Anogeissus leiocarpa* are rich in tannin: they contain ellagic, gallic and gentisic acids, derivatives of gallic and ellagic acid, and several flavonoids (derivatives of quercetin and kaempferol) that are very useful for dyeing (Andary et al., 2005) but that may have deleterious effects on nutritive value. However, no signs of toxicity were observed in growing goats fed African birch browse (Yahaya et al., 2000).

Ruminants

In semi-arid regions of Nigeria, growing goats (12.4 ± 0.9 kg LW) fed *Anogeissus leiocarpa* browse had the lowest DM intake (530-540 g/day) and the lowest daily gain (42-155 g/day) when compared to goats fed other native browses (*Ziziphus spina-christi*, *Faidherbia albida* and *Sterculia setigera*) (Yahaya et al., 2000; Kibon et al., 1993). Dry matter digestibility (61-64 %) was lower than for the other browse species (Yahaya et al., 2000; Kibon et al., 1993).

African birch browse could be used either as a supplement or as a basal diet when availability of other herbaceous forage is limiting the production potential of goats and possibly other ruminants (Yahaya et al., 2000).

Pigs

No information found (2013).

Poultry

No information found (2013).

Rabbits

No information found (2013).

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Tables of chemical composition and nutritional value

- African birch (*Anogeissus leiocarpa*), leaves, fresh

Avg: average or predicted value; SD: standard deviation; Min: minimum value; Max: maximum value; Nb: number of values (samples) used

African birch (*Anogeissus leiocarpa*), leaves, fresh



Main analysis	Unit	Avg	SD	Min	Max	Nb
Dry matter	% as fed	45.9	7.4	40.0	54.2	3
Crude protein	% DM	12.2	2.9	7.9	19.6	11
Crude fibre	% DM	16.1	1.9	13.3	19.0	8
NDF	% DM	40.1	10.9	28.2	56.0	7
ADF	% DM	29.5	8.1	19.5	40.2	7
Lignin	% DM	10.8	4.8	5.5	15.7	5
Ether extract	% DM	3.9	2.5	1.9	9.2	7
Ash	% DM	8.3	1.6	6.3	11.2	9
Gross energy	MJ/kg DM	18.0				*

Minerals	Unit	Avg	SD	Min	Max	Nb
Calcium	g/kg DM	14.5	7.5	1.3	26.5	8
Phosphorus	g/kg DM	1.5	0.6	0.7	2.4	8
Potassium	g/kg DM	6.8	1.7	4.8	8.1	5
Sodium	g/kg DM	1.2				1
Magnesium	g/kg DM	2.9	0.7	1.8	3.7	5
Manganese	mg/kg DM	24				1
Zinc	mg/kg DM	19				1
Copper	mg/kg DM	13				1

Secondary metabolites	Unit	Avg	SD	Min	Max	Nb
Tannins (eq. tannic acid)	g/kg DM	34.1		23.7	44.5	2
Tannins, condensed (eq. catechin)	g/kg DM	0.0				1

Ruminant nutritive values	Unit	Avg	SD	Min	Max	Nb
Nitrogen digestibility, ruminants	%	66.0				1

The asterisk * indicates that the average value was obtained by an equation.

References

CIRAD, 1991; Kibont et al., 1993; Yahaya et al., 2000

Last updated on 24/10/2012 00:43:37

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Agaie, B. M. ; Onyeyili P. A., 2007. Anthelmintic activity of the crude aqueous leaf extracts of *Anogeissus leiocarpus* in sheep. *Afr. J. Biotech.*, 6 (13): 1511-1515 

Andary, C. ; Doumbia, B. ; Sauvan, N. ; Olivier, M. ; Garcia, M., 2005. *Anogeissus leiocarpa* (DC.) Guill. & Perr.. Record from Protabase. Jansen, P.C.M. & Cardon, D. (Editors). PROTA (Plant Resources of Tropical Africa / Ressources végétales de l'Afrique tropicale), Wageningen, Netherlands 


Fall Touré, S., 1991. *In vitro* digestibility and degradability *in situ* in the rumen of woody forage available on natural grasslands in Senegal. First results. *Rev. Elev. Méd. Vét. Pays Trop.*, 44: 345-354 


Jansen, P. C. M. ; Cardon, D., 2005. Dyes and tannins. PROTA 


Kibon, A.; Ørskov, E. R., 1993. The use of degradation characteristics of browse plants to predict intake and digestibility by goats. *Anim. Prod.*, 57 (2):247-251 

Ørskov, E. R. ; Nakashima, Y. ; Abreu, J. M. F. ; Kibon, A. ; Tuah, A. K., 1992. Data on DM degradability of feedstuffs. Studies at and in association with the Rowett Research Organization, Bucksburn, Aberdeen, UK. Personal Communication

Tezenas du Montcel, L., 1994. Les ressources fourragères et l'alimentation des ruminants domestiques en zone sud-sahélienne (Burkina Faso, Yatenga). Effets des pratiques de conduite. Thèse présentée pour l'obtention du Grade de Docteur. Université Paris XI Orsay

USDA, 2010. GRIN - Germplasm Resources Information Network. National Germplasm Resources Laboratory, Beltsville, Maryland 

Yahaya, M. S. ; Takahashi, J. ; Matsuoka, S. ; Kibon, A. ; Dibal, D. B., 2000. Evaluation of arid region browse species from north eastern Nigeria using pen fed goats. *Small Rumin. Res.*, 38: 83-86 

Zampaligré, N.; Dossa, L. H.; Schlecht, E., 2013. Contribution of browse to ruminant nutrition across three agro-ecological zones of Burkina Faso. *J. Arid Env.*, 95: 55-64 

10 references found





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