

Croton sapiifolius Müll.Arg.: a new occurrence for the State of Espírito Santo, Brazil¹

Rafaela Freitas dos Santos^{2,5}, Ricarda Riina³ and Maria Beatriz Rossi Caruzo^{2,4}

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ABSTRACT - (*Croton sapiifolius* Müll.Arg.: a new occurrence for the State of Espírito Santo, Brazil). While studying *Croton* material collected in Espírito Santo, we found several specimens of *Croton sapiifolius*, a species previously restricted to the State of Bahia. The present paper updates our knowledge about the taxonomy, habitat and geographic distribution of *C. sapiifolius*. This finding increases the number of known *Croton* species occurring in Espírito Santo State to 20 and contributes to the knowledge of *Croton* of the Brazilian Atlantic Forest.

Keywords: Atlantic Forest, Crotonaceae, Flora, Restinga vegetation

RESUMO - (*Croton sapiifolius* Müll.Arg.: uma nova ocorrência para o Estado do Espírito Santo, Brasil). Durante visita aos herbários do Estado do Espírito Santo, foram encontrados espécimes de *C. sapiifolius* para este Estado, uma espécie conhecida até o momento apenas para o Estado da Bahia. Neste trabalho são apresentados dados atuais sobre a taxonomia e distribuição geográfica de *C. sapiifolius*. Essa nova ocorrência eleva para 20 o número de espécies conhecidas de *Croton* no Estado do Espírito Santo. O presente trabalho contribui para enriquecer o conhecimento sobre as espécies de *Croton* na Floresta Atlântica e no Brasil.

Palavras-chaves: Crotonaceae, Flora, Floresta Atlântica, Restinga

Introduction

Croton L., the second largest genus of Euphorbiaceae, comprises about 1.200 species distributed worldwide (Berry *et al.* 2005). Brazil has 316 species of the genus, which ranks *Croton* as the 4th largest Angiosperm genus in the country (BFG 2015). It occurs in almost all types of vegetation, but most species grow in dry and open vegetation, secondary forests and disturbed sites (van Ee *et al.* 2011, Gomes-Pompa 1971, Caruzo *et al.* 2011).

Croton sapiifolius was described by Müller Argoviensis (1865) as the only species of section *Quadrilobus* Müll.Arg. Webster (1993) mentioned that the species was poorly known because until then it was only known from the type collection. Riina *et al.* (2010) updated the description of *Croton sapiifolius*, designated a lectotype, and recorded new specimens, however, until that moment it was known to occur only in moist forests of southern Bahia.

During studies conducted on the genus *Croton* at the herbarium of the Universidade Federal do Espírito Santo (VIES; acronym following Thiers 2016), several collections of *C. sapiifolius* from the State of Espírito Santo were found. According to Dutra *et al.* (2015), there were 19 species of *Croton* in the State of Espírito Santo (ES). The present paper documents the first record of *Croton sapiifolius* for this State, increasing to 20 the number of *Croton* species known for Espírito Santo and extending the distribution of this species to southeastern Brazil.

Material and methods

This study was based on the analysis of collections deposited in the following herbaria: ALCB, CVRD, MBML, SP, VIES (acronyms according to Thiers 2016).

Morphological characters were observed using a stereomicroscope and the terms used in the description

1. Parte da Dissertação de Mestrado da primeira Autora
2. Universidade Federal de São Paulo, Campus Diadema, Departamento de Ciências Exatas e da Terra, Diadema, SP, Brazil
3. Real Jardín Botánico, RJB-CSIC, Plaza de Murillo 2, ES-28014, Madrid, Spain
4. Instituto de Botânica, Secretaria do Meio Ambiente, Cx. Postal 3005, 01061-970, São Paulo, SP, Brazil
5. Corresponding author: rafadbl@hotmail.com

are following Hickey (1973), Stearn (1992), and Webster *et al.* (1996).

Results and Discussion

Important characters for recognizing *Croton sapiifolius* are the following: trees up to 14 m tall, monoecious or apparently dioecious, glabrescent or covered by sparse indumentum of stellate, stellate-lepidote or stellate-porrect trichomes; leaves coriaceous, elliptic or oblong, margin entire to sinuous or dentate, with discoid glands in the sinuses; venation brochidodromous; acropetiole glands 2(-4), sessile and globose, visible from the adaxial side of the leaf. Staminate inflorescences axillary; staminate flowers shortly pedicellate, 4-merous, valvate, sepals ovate, petals oblong; stamens 10-15. Pistillate inflorescences terminal; pistillate flowers pedicellate; 4(-6)-merous, sepals triangulate, filiform petals sometimes present; ovary 2(-3)-locular; styles 3, with 6(-8) terminal arms. Capsules obovate to oblong; seeds obovoid, carunculate (see illustration in Riina *et al.* 2010).

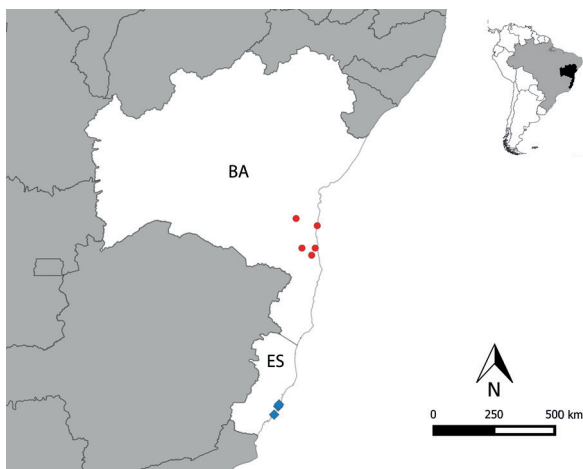


Figure 1. Geographic distribution of *Croton sapiifolius* (Guarapari, Vila Velha, Vitória: Espírito Santo, Brazil; Uruçuca, Itagibá, Jussari, Uruçuca, Una: Bahia, Brazil). Map showing previously known localities (circles) and new locality records (diamonds). BA: Bahia. ES: Espírito Santo.

Croton sapiifolius is endemic to the Atlantic Forest (figure 1), where is found in 'restinga' forests of Espírito Santo State and in moist forests of southern Bahia, from 100 to 200 m elevation (Riina *et al.* 2010). Flowering from August to October and fruiting in May, October and November.

Selected material examined: BRAZIL. ESPÍRITO SANTO: Guarapari, Setiba, 27-IX-1982, *O.J. Pereira et al.* 195 (VIES, SP); Vila Velha, Interlagos, 1-VI-1995, *O.J. Pereira et al.* 5459 (VIES, SP); *ibid.*, 8-VIII-1995, *O. Zambom & F.S. Sá* 1522 (VIES, SP); Vitória, Reserva Ecológica de Camburi, 28-XI-1997, *A.M. Assis & I. Weiler Júnior* 298 (VIES, SP); *ibid.*, 1-X-1998, *A.M. Assis* 638 (VIES, SP). BAHIA: Itagibá, Mata da Botinha, 6-I-2009, *M.L. Guedes et al.* 16508 (ALCB); *ibid.*, 10-VII-2009, *M.L. Guedes et al.* (ALCB).

Specimens of *Croton sapiifolius* from Espírito Santo provide new data and additional morphological variation for the species. For this reason, the current description (Riina *et al.* 2010) should be complemented with the following features: occurrence of monoecious individuals; presence of stellate-porrect trichomes in other parts of the plant besides the pistillate flowers; presence of reduced petals in the pistillate flowers; styles bifid, with terminal tips sometimes divided once more.

Specimens of *Croton sapiifolius* were erroneously identified at VIES as *C. polyandrus* Spreng. Although both species occur sympatrically in 'restinga' forests of the State of Espírito Santo, they can be easily distinguished by their habit (arborescent in *C. sapiifolius* vs shrubby in *C. polyandrus*), foliar margin (sinuous or entire in *C. sapiifolius* vs crenate in *C. polyandrus*), number of carpels (usually two in *C. sapiifolius* vs three in *C. polyandrus*) and inflorescence sexuality (unisexual in *C. sapiifolius* vs bisexual in *C. polyandrus*). Another species found in 'restinga' forests of the State of Espírito Santo is *Croton sphaerogynus* Baill., which differs from *Croton sapiifolius* in several morphological features (see table 1).

Table 1. Main characters distinguishing *Croton sapiifolius*, *C. polyandrus* and *C. sphaerogynus*.

Character/Species	<i>Croton sapiifolius</i>	<i>Croton polyandrus</i>	<i>Croton sphaerogynus</i>
Habit	tree	shrub	shrub
Leaf margin	sinuous	crenate	serrate
Number of carpels	2	3	3
Inflorescence sexuality	unisexual	bisexual	bisexual
Pistillate flower	campanulate	subcampanulate	flask-shaped
Styles	6(-8) terminal arms	6 terminal arms	12 terminal arms

The present paper increases the number of known species of *Croton* in the State of Espírito Santo to 20 and contributes to the knowledge of *Croton* species in Brazil.

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