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Research Paper

MORPHOLOGICAL DIVERSITY OF FRUITS AND SEEDS OF *Auxemma oncocalyx* (Allemão) Taub.- BORAGINACEAE, MOSSORÓ-RN, BRAZIL

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Abstract

Auxemmaoncocalyx (Allemão) Taub.-Boraginaceae is a small tree that occurs in the state of Ceará and Rio Grande do Norte, Brazil, endemic to the savanna. *A. oncocalix* has antioxidant activity, anti-inflammatory, antidematogênicaantinociceptive and anti-carcinogenic. In order to study the variability among fruits and seeds were selected 10 trees *A. oncocalix* with good phenotypic appearance located on the campus of UFERSA. 100 fruits were collected from each plant in August 2015. The characteristics were evaluated: weight, diameter and length of each fruit and each seed. There was a significant difference for the characteristics that were tested by Tukey at 5% probability. The plant 3 had the highest average length of fruit (46.15mm) and the largest fruit diameter (42.3mm). There was no significant difference in fruit weight. The plant 1 had the highest length (27.68mm), diameter (33mm) and seed weight (1.4g). As the diameter and length of the seed showed a significant Pearson correlation (positive 0.70). Plants 1 and 3 are excellent matrices for studying the propagation and production of fruit and better quality seeds.
Key words: *Auxemmaoncocalix,* morphology, correlations.

INTRODUCTION

Auxemmaoncocalyx (Allemão) Taub.-Boraginaceae, is a small tree that occurs in the state of Ceará and Rio Grande do Norte, Brazil, considered endemic to the caatinga [3]. The wood is very used in construction and carpentry, being heavy, good quality, resistant to fungi and termites. The tree, the beauty of its flowers, white and dense terminal panicles, is used in landscaping, in ornamental squares and avenues [1].

According to [2]*Auxemmaoncocalyx* has astringent skins baths used in the treatment of wounds and blows and second [3] can also be used in the treatment of ectoparasites in domestic animals (scabies lice and ticks). The flowers are rich in allantoin and can be used in ointments or as

dyeing and boiling for local treatment of ulcers and burn wounds. It has antioxidant properties, analgesic and antiinflamatória. The barks isolated significant amount of alantoína, substance with healing properties, anti-inflammatory and regenerative of necrotic tissue scientifically comprovadas. Thus, it is believed that the allantoin is the active ingredient of bark of this plant.
Biometrics fruit and seed is an instrument used to verify the genetic variability within populations of the same species and the relationship of this variation with environmental factors [4].
The description and biometric characterization of fruits and seeds can provide important information for the differentiation of the same genus, given that tropical tree species present great variability in fruit size, number of seeds per fruit and seed size [5] moreover, can contribute to the production technology of native species [6].
Biometrics seeds are also related to the dispersion characteristics and the seedling establishment, and is used to differentiate pioneer and non-pioneer species in tropical forests.
Despite the environmental and medicinal importance there is still little information about *Auxemmaoncocalyx*. Thus, this study aims to determine the main biometric characteristics of fruits and seeds.

MATERIALS AND METHODS

The work was carried out on Irrigation and Drainage Laboratory of the Department of Plant Sciences at the Federal Rural University of semiarid (UFERSA), located in the geographical coordinates of 5°11'31"south latitude and 37°20'40" longitude west of Greenwich, with an average altitude of 18 m. The climate in the Köppen classification, is the BSwhtype (hot and dry), with very irregular rainfall, annual average of 673.9 mm; temperature of 27 °C and relative humidity of the air average of 68.9% [7].

The fruits were collected from the plant in August 2014. Each plant were sampled 100 fruits. The characteristics evaluated were: weight, diameter and length of each fruit. The diameter was considered the middle region of fruit and length as large as possible.

RESULTS AND DISCUSSION

The plant 4 had the highest average length of fruit (50,15mm) and the largest fruit diameter (42,91mm). There was no significant difference in fruit weight. The plant 1 had the highest length (27,68mm), diameter (33mm) and seed mass (1.4g).

Table 1.Diameter, length and mass of the seeds and seed *Auxemmaoncocalix*. 2015.

Plant	Fruit diameter (mm)	Fruit lenght (mm)	Fruit mass (mg)	Seed diameter	Seed lenght (mm)	Seed mass (mg)
1	12.44	10.96	1.55	33.02	27.68	1.37
2	37.91	44.73	0.99	14.70	17.30	0.76
3	42.29	46.13	1.88	12.20	18.93	0.95
4	42.91	50.15	1.27	12.90	19.75	0.86
5	37.78	44.56	1.17	15.51	18.50	0.94
6	36.48	42.30	1.09	14.31	17.14	0.88
7	36.61	45.41	1.09	13.99	17.59	0.84
8	40.57	44.70	1.23	11.98	10.93	0.97
9	36.04	37.03	1.13	12.75	20.90	0.92
10	40.90	45.58	1.15	13.56	19.16	0.93
DMS	5.60	8.28	0.09	2.48	1.72	0.17

The size and weight of seeds has an influence on the property and dispersion of the species, alternative modes of dispersion, for example barocoria (spread the seed under the weight of the

fruit),zoochory (animals) anemochory (wind), among others [8] and also are related to competition predation and spatial distribution [9].
Furthermore, for some species can be considered an indication of their physiological quality, and in one lot lighter seed usually have a lower performance than the heaviest during germination, or even in the initial growth of plants, due to the amount of accumulated reserves and the formation of the embryo [10].
Large seeds have lower restrictions on germination under natural conditions, which may be advantageous in shade conditions [11] and related to late successional stages [12].
The diameter and length of the seed showed a significant Pearson correlation (positive 0.70), Studying fruit and seeds of *Butiacapitata* species [13] observed that the length and diameter were positively correlated with other characteristics (fresh fruit mass), fresh pulp mass, dry mass of pulp, fresh pyrene mass and number of seeds per fruit, indicating that the larger the fruit the greater its mass.

Table 2.Pearson's correlations between diameter, length and mass of the fruit and seed *Auxemmaoncocalyx*. 2015.

Characteristics	Fruit diameter	Fruit diameter	Fruit mass	Seed diameter	Seed lenght	Seed mass
Fruit diameter	1.0	0.34	- 0.19	- 0.34	- 0.20	- 0.17
Fruit diameter	-	1.0	- 0.13	- 0.34	- 0.24	- 0.12
Fruit mass	-	-	1.0	0.37	0.37	0.40
Seed diameter	-	-	-	1.0	0.70*	0.19
Seed lenght	-	-	-	-	1.0	0.14
Seed mass	-	-	-	-	-	1.0

In study with *Syagrusoleracea*Becc. [14] also found a positive correlation between the length to diameter and length/diameter ratio of mass and diameter and fruit mass indicating that increasing one measurement to another also increases. This information is useful because it can help in the indication or fruit classification with a view to better uniformity of the same in planting and selection of fruit for industrial processing.

CONCLUSION

Plants 1 and 3 are excellent matrices for studying the propagation and production of fruit and better quality seeds.

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