



KARYOTYPIC ANALYSIS OF PIGEONPEA (*CAJANUS CAJAN L.*)

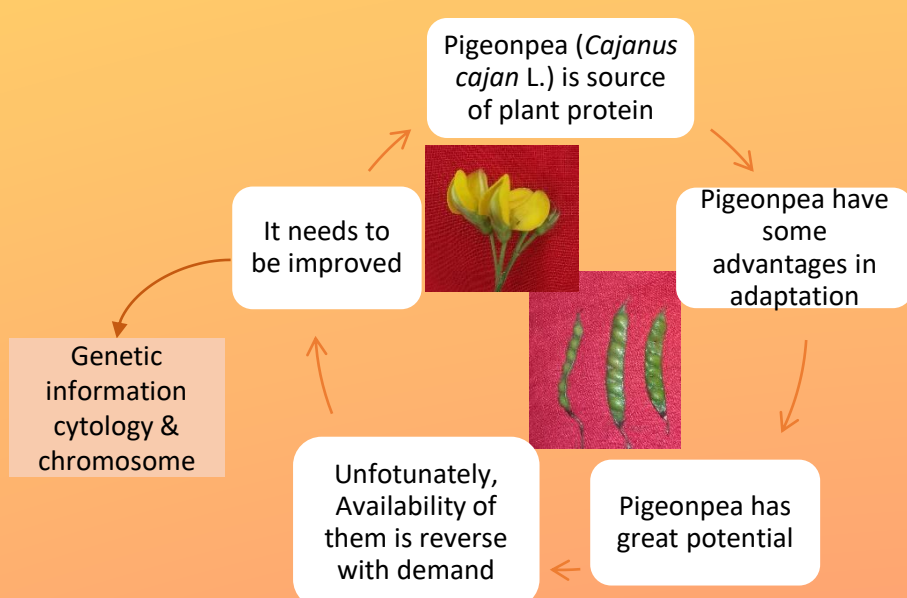


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INTRODUCTION



MATERIAL AND METHODS

This research was conducted at Plant Physiology and Biotechnology Laboratory, Faculty of Agriculture, Sebelas Maret University and Plant Breeding Laboratory, Faculty of Agriculture, Gadjah Mada University. The research used descriptive methods based on chromosome observation that obtained squashing methods.

RESULT AND DISCUSSION

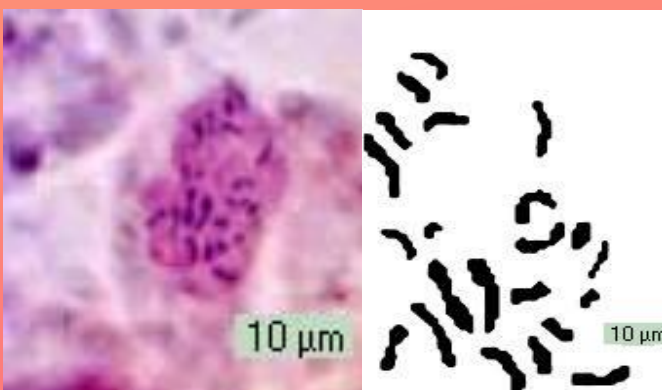


Figure 1. Chromosome of pigeonpea (*Cajanus cajan L.*)

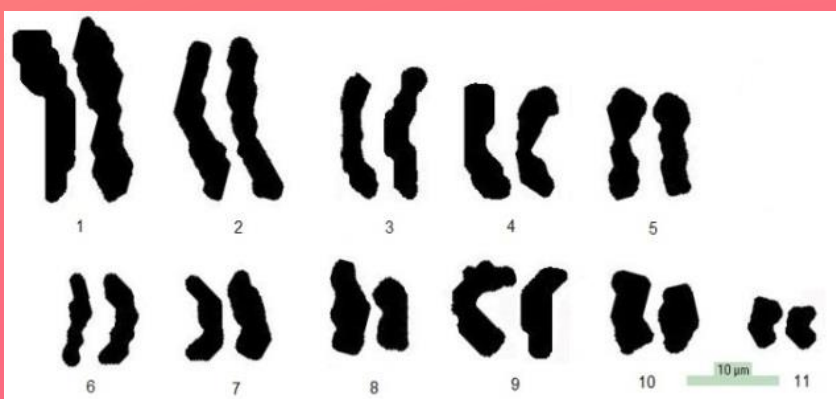


Figure 2. Karyotype of pigeonpea (*Cajanus cajan L.*)

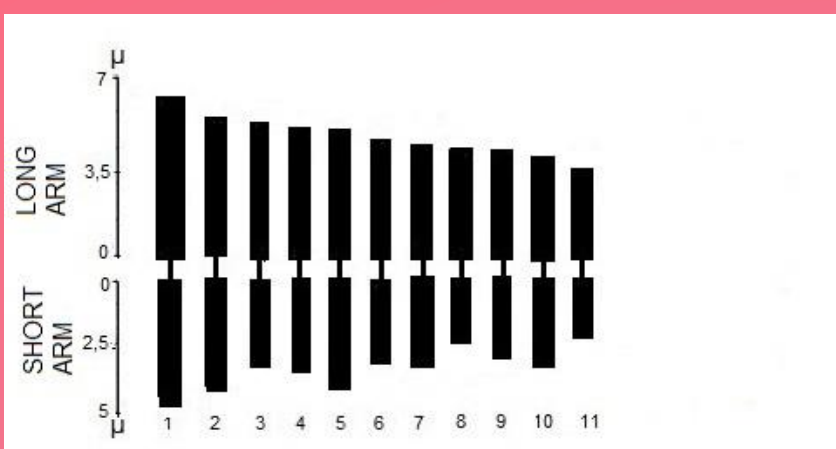


Figure 3. Idiogram of pigeonpea (*Cajanus cajan L.*)

Table 1. Chromosome shape based on long arm and short arm ratio

Chromosome shape	Arm ratio ($r=q/p$) μm
Metacentric (m)	$1,0 < r \leq 1,7$
Submetacentric (sm)	$1,7 < r \leq 3,0$
Akrocentric (t)	$3,0 < r \leq 7,0$
Telocentric (T)	$> 7,0$

Table 2. The average of chromosome arm ratio of pigeonpea

Chromosome Pair	Chromosome Length ($\bar{x} \pm SD$) μm			Ratio $r=q/p$ ($\bar{x} \pm SD$)	Chromosome Shape
	Total (q+p)	Long Arm (q)	Short Arm (p)		
1	10.92 \pm 2.69	6.22 \pm 1.05	4.70 \pm 1.65	1.40 \pm 0.34	Metacentric
2	9.85 \pm 2.77	5.80 \pm 1.66	4.05 \pm 1.14	1.43 \pm 0.10	Metacentric
3	8.65 \pm 4.99	5.55 \pm 3.21	3.10 \pm 1.82	1.85 \pm 0.39	Submetacentric
4	9.30 \pm 5.04	5.28 \pm 2.75	4.02 \pm 2.31	1.34 \pm 0.12	Metacentric
5	8.77 \pm 6.87	5.10 \pm 3.90	3.67 \pm 2.98	1.42 \pm 0.26	Metacentric
6	7.57 \pm 3.12	4.55 \pm 1.82	3.02 \pm 1.35	1.53 \pm 0.21	Metacentric
7	7.03 \pm 1.97	4.20 \pm 1.06	2.83 \pm 0.91	1.50 \pm 0.11	Metacentric
8	6.82 \pm 2.03	4.40 \pm 1.61	2.42 \pm 0.53	1.82 \pm 0.48	Submetacentric
9	7.47 \pm 4.62	4.07 \pm 2.41	3.40 \pm 2.21	1.22 \pm 0.10	Metacentric
10	7.43 \pm 3.16	4.03 \pm 1.68	3.40 \pm 1.48	1.20 \pm 0.04	Metacentric
11	5.73 \pm 1.15	3.37 \pm 0.83	2.37 \pm 0.43	1.42 \pm 0.26	Metacentric

CONCLUSION

Chromosome number of pigeonpea (*Cajanus cajan L.*) was $2n=2x=22$ with chromosome length between $5.70 \pm 2.35 \mu m$ until $11.16 \pm 3.16 \mu m$ and has 18 metacentric chromosome and 4 submetacentric chromosome.

REFERENCES

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