**Progress and Prospects of CMS based Hybrids in Pigeonpea: Redefining plant architecture, resistance, and yield attributes.**

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Pigeonpea is an important pulse crop serving as food and livelihood for about 1.6 billion people across Africa and Asia. The average productivity of the crop has ranged from 0.7 to 2.0 tonnes/ha for the past 6 decades. The advent of hybrid technology is seen as a prospect in breaking the yield plateau. Hybrids show 20-56% yield superiority over the checks. The prioritized breeding on short duration hybrids maturing in 150 days with well characterized maintenance and restorer programs strengthens the breeding scheme. Stable CMS for maintainers and high pollen reproducibility for restorers are prime focus. Whereas open flower type, photo-insensitivity, annuality, non-shriveling seeds, increased pod clusters, 4-6 seeds per pod, multiple resistance for biotic and abiotic stresses are the key traits characterized for hybrid breeding. A2 and A4 are the two CMS systems aiding in hybrid development. Fertility percentage based heterotic pooling at ICRISAT resulted in more restorers at A4 system. Redesigning the plant architecture in hybrid pigeonpea has a potential to increase yield by 25 to 33%. ICPH 2671, ICPH 2740, IPH 15-03 IPH 09-5 are the released hybrids. Whereas IPH 21-06, ICPH 2222, ICPH 2211 are the short duration hybrids depicting the superiority of 35 to 56% over the ruling checks in testing pipelines. Pigeonpea hybrids with novel plant architecture, higher yields and multiple resistance are envisioned to break yield barriers adopting in multi-cropping system and increasing the global production.

Key words- Hybrid, pigeonpea, Restorer, Heterosis