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A stakeless yard long bean cultivar derived from an interspecific cross between cowpea *Vigna unguiculata* L. (Walp) and yard long bean *Vigna sesquipedalis* L. (Verdc.)

"Yard long bean" is an important vegetable in the Thai diet, particularly in Northeast Thailand. However, growing "yard long beans" requires stakes for supporting the twining stems and keeping the pod from touching the ground. Staking costs money, takes time and needs labour. An ideal cultivar would be a "yard long bean" with erect plant type and under 80 cm in height that produces typical long bean pods and allows convenient picking during the harvest time. An attempt to breed such a cultivar was made by crossing cowpea *Vigna unguiculata* L. (Walp.) with "yard long bean" *Vigna sesquipedalis* L. (Verdc.) in 1984. This resulted in a new cultivar "KKU 25". This cultivar, having erect plant type, requires no staking for supporting the stem and produces long fresh pods with acceptable taste which can be harvested within 43 days. The average pod length is 48 cm, and pod diameter 1.43 cm. In a preliminary yield trial, an average fresh pod yield of 16 t/ha was obtained.

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Studies on chemical and physical mutagens' induced polygenic variability in mungbean (*Vigna radiata* (L.) Wilczek)

Pulses used to be and still are cultivated on marginal lands under poor management conditions which result in low production. Genotypes which could respond to better management have been eliminated by past selection. It is, therefore, difficult and challenging to breed high yielding varieties in pulse crops with the limited genetic variability available. Induced mutations could supplement this variability. Extensive studies on genotype-mutagen interaction were undertaken with six varieties of mungbean having contrasting seed characteristics, morphological traits and genetic backgrounds. Each variety was treated with 300 Gy and 600 Gy of gamma rays, 0.1 and 0.5% of EMS, and 0.1 and 0.05 of SA. Dry seeds, water soaked and phosphate buffer soaked seeds served as controls. The following observations were made: differential response of varieties to mutagen treatments - irrespective of the variety or the characters; gamma-rays proved to be more effective than chemical mutagens; mutagenic treatments resulted in development of early maturing mutants that can fit well in multiple cropping systems particularly in raising a mung crop after the wheat harvest. The fact that some mutants were detected in M₄ with significant increase in yield and marginal improvement in protein content generation suggests the possibility of improving both characters provided a large population is screened.

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Soybean breeding with EMS mutagenesis

"Yudou No. 2" is a good soybean variety grown in the Honan Province. EMS was applied to seeds and valuable mutants were selected among the descendants. In a short period, several genetically stable strains were obtained. In the M₂ population, the early-maturing mutants were the most frequent, followed by short culm mutants. Other mutations altered leaf shape, grain size, habit of pod bearing, number of pods etc.. One of the best strains is "86-180". It is highly disease-resistant and ripens 19 days earlier than the original "Yudou No. 2". It bears more pods,



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