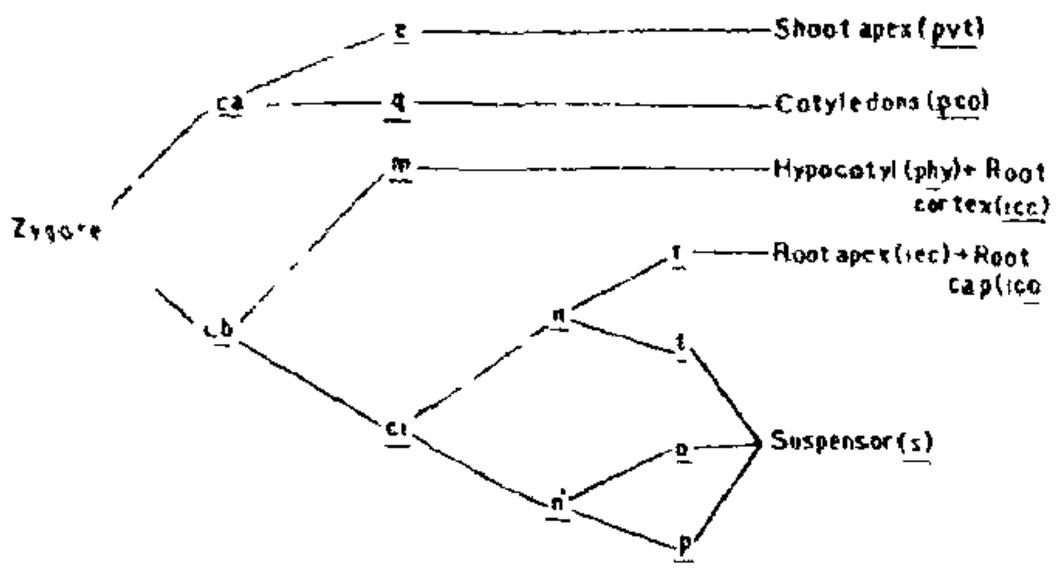

arvensis[2], whereas the present study of *Lycopsis orientalis* lucidly shows that the embryogeny agrees with PI, GII, MTII, B_2 series corresponding to the Geum variation of the Asterad type, which is recorded for the first time in this genus.

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A COMPARISON OF LIPID SYNTHESIZING CAPACITY IN ELONGATING FIBRES OF TWO COTTONS DIFFERING IN LINT LENGTHS

AMARJIT SINGH BASRA AND C. P. MALIK
Department of Botany, Punjab Agricultural University, Ludhiana 141 004, India.

LITERATURE on cell physiological mechanisms regulating the extent of cotton fibre growth is scanty. Cotton fibres measure 1000–3000 times longer than their diameter membrane lipids are synthesized in large quantities during fibre growth. Among genotypes of cultivated *Gossypium* species, variability exists in terms of mean fibre length. A relationship between lipid synthesizing capacity and the capacity for fibre production is possible. The presence of various types of lipids has been ascertained in developing fibres[1-6] In the present communication, a comparison of (1—^{14}C) acetate incorporation into lipids in elongating fibres of *Gossypium arboreum* L. *cv.* LD 133 (a short staple type) and *Gossypium hirsutum* L. *cv.* LH 372 (a long staple type) has been made.

Bolls from field-grown cotton plants were harvested at 10 and 20 days after synthesis (DAA). 10 g of fibres were placed in 3.0 ml of the incubation medium containing 3 μCi of (1—^{14}C) acetate (specific activity 46.15 mCi/m mole) and 0.15 mM chloramphenicol. The incubations were carried out under aerobic conditions with shaking at 30°C for 4 hr in the dark. Aseptic conditions were maintained. (1—^{14}C) acetate was purchased from the radioisotopic division of BARC, Trombay, India. At the end of the incubation period, the liquid medium was poured out and the fibres were given repeated washings with distilled water to remove adherent radioactivity. The cold extraction method of Folch *et al.*[7] was used for the extraction of total lipids. The solvent partition method of James and Morris[8] was used for the separation of polar and nonpolar lipids. Radioactivity in polar and non-polar lipids was measured using a dioxane based and a toluene based scintillation fluid respectively on Packard Tri-carb scintillation spectrometer Model 3330.

Rate of (1—^{14}C) acetate incorporation into lipids is greater in the fibres of the long staple cultivar than the short staple one (table 1). The incorporation of label in total lipids at 10 and 20 DAA is 47.8% and 12.7% higher in the long fibres as compared with the short fibres. Inspection of radioactivity incorporated in individual polar and nonpolar lipids again reveals greater incorporation in long fibres at the two stages. In both cultivars, the majority of the label is incorporated in polar lipids at the two stages. At day 10, the

TABLE 1

(1-^{14}C) -acetate incorporation in the fibers of a short staple(SS) and a long staple(LS) cotton

Fibre Age DPA	Cotton	Incorporation in lipids (cm min^{1}/g F wt.) Polar	Nonpolar	Total	Relative per cent incorporation Polar	Nonpolar	Polar/ nonpolar
10	SS	11206	3568	14774	75.8	24.2	3.13
	LS	20892	7452	28344	73.7	26.3	2.80
	SS	7325	2690	10015	73.1	26.9	2.71
20	LS	7758	3715	11473	67.6	32.4	2.06

Data are from one experiment but the pattern was reproducible in at least four different experiments.

augumented synthesis of polar and nonpolar lipids in the two fibres is commensurate with the laying down of new cell wall and membranes which are required for rapid extension growth. The decline in label incorporation at day 20 corresponds with the time when fibre elongation is nearly complete and the rate of growth is at its lowest ebb in the two cultivars[9]. Apparently a limited amount of lipid is synthesized during fibre growth whose major function is probably the synthesis of membranes and the maintenance of their biochemical integrity. At 10 DAA, the activity of glycolysis and pentose phosphate pathway which supplies acetate and reducing equivalents for lipid synthesis is also high and the activity slows down later at 20 DAA[10]. In this respect, long fibres have more efficient operation of these pathways than the short fibres. This may be a mechanism of differential lipid synthesis in the two cultivars which in turn may be involved in regulating the extent of fibre growth.

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INTERSPECIFIC TRANSFER OF RESISTANCE TO MUNGBEAN YELLOW MOSAIC VIRUS FROM *VIGNA MUNGO* TO *VIGNA RADIATA*

A. S. GILL*, M. M. VERMA, H. S. DHALIWAL* AND T. S. SANDHU
Department of Plant Breeding, Punjab Agricultural University, Ludhiana 141 004, India.
*Regional Research Station, Gurdaspur, India.

MUNGBEAN (*Vigna radiata*) is widely grown throughout the tropical countries of South East Asia and India. It is mainly grown as a *Kharif* (July October) crop in almost all the states of India. Its cultivation in the winter or *rabi* season (September-January) is restricted to the eastern and southern parts of the country. The crop is prone to Mungbean Yellow Mosaic Virus (MYMV) in all the states and particularly in the Northern and Central States of Punjab, Haryana, Rajasthan, Uttar Pradesh, Bihar, Madhya Pradesh and Orissa. The disease is transmitted by a whitefly (*Bemisia tabaci*). Recommended varieties, MI 5 and MI 131 have a fairly moderate degree of resistance. Further the recommended variety M I 1 of urdbean (*Vigna mungo*) has also a high degree of resistance to this disease. Suc-