

18. Beware of the wax-moth the worst enemy of the honey bee. To control it keep the colonies strong. Remove all superfluous combs and give just enough for the bees. Examine the joints and interspaces of the hive body for eggmasses of the wax-moth. Scrape away the eggmasses and if necessary change the hive-body once in 6 days. Examine the combs and floor-board of the hive for caterpillars. Store the old combs in an air-tight and insect-proof receptacle. Examine them frequently and if infested by the worms dry them in the sun and eliminate the caterpillars.

19. The black ant is another serious enemy; treat the ant holes with calcium cyanide. Provide ant pans or smear the legs with Tanglefoot.

20. The yellow banded wasp is also known to attack bees. Handnet the wasps. If possible destroy their nests.

Detailed information on the subject of bee-keeping is given in Bulletin No. 37 of the Madras Agricultural Department. For further information the Government Entomologist, Lawley Road P. O., Coimbatore. may be written to.

Research Notes.

The Relationship between the Mechanical Tissue Brown Factor and the Factor for Juiciness of Stalk in Sorghum.

In a previous paper¹ the occurrence, as a mutant, of a sorghum plant with brownish purple-lined internode, leaf-sheath, midrib, panicle branch, and glume top has been recorded. The pigment was not anthocyanic. This mutant behaved as a simple recessive to the common more economic green-internoded and white midribbed plant. A factor mt_b gives a mechanical tissue coloured brownish purple. Mt_B gives the ordinary green internode of the common sorghum.

In another paper² Mendelian di-hybrid segregations for the character pairs pithy and juicy stalks (D-d), and not sweet and sweet stalks (X-x) proving them independent in inheritance have been reported.

To determine the inter-relationship between the colouring of the mechanical tissue and such an important factor as juiciness in stalk, crosses were made between the following parents.

A. S. 545	A. S. 3641
Sweet Stalk (x)	Sweet stalk (x)
Juicy stalk (d)	Pithy stalk (D)
Mechanical tissue colourless (Mt_B)	Mechanical tissue brownish purple (mt_b)

The F_1 (A. S. CCXXII—a) was sweet stalked (xx), pithy stalked (Dd) and its mechanical tissue was colourless ($Mt_B - mt_b$). In the F_2 the following di-hybrid segregations were obtained.

Family No.	Pithy stalked (DD & Dd) (White midrib)		Juicy stalked (dd) (Dull midrib)	
	Mechanical tissue not coloured	Mechanical tissue brownish purple	Mechanical tissue not coloured	Mechanical tissue brownish purple
A. S. 4765	71	24	26	8

It will thus be seen that the pair of factors $Mt_B - mt_b$ determining the colourless-ness or brownish purple of the mechanical tissue are independent of the D-d factors determining pithiness or juiciness of stalks—(white or dull midrib in leaves). Juicy stalks with their mechanical tissue coloured brownish purple have been extracted and fixed as types.

References.

1. Inheritance of Characters in Sorghum.—The Great Millet, VIII. A Brownish Purple Mutant. *Ind. J. Agri. Sci.* VI (II), 1936. Pp. 481—483.
2. Mendelian Segregations for Juiciness and Sweetness in Sorghum Stalks. *Madras Agri. J.* XXIV (7), 1936. Pp. 247—248.

Millet Breeding Station,
Coimbatore,
April 7, 1937.

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Agricultural Fottings.

BY THE DEPARTMENT OF AGRICULTURE

Malting of cholam as a cottage Industry. Investigations of the Government Agricultural Chemist and his collaborators at Coimbatore have shown that it is possible to make excellent malt and malt foods out of cholam.

The Imperial Council of Agricultural Research sanctioned a scheme in 1935 with the triple object of finding more extended use for cholam, which occupies about 5,000,000 acres in our presidency, establishing cholam malting industry both on a small scale and large scale, and eventually to replace partially imported malted foods, on which a large amount of money is being spent.

Laboratory experiments have shown that foods of a great variety and a high solubility can be made out of cholam malt, but in this note the preparation of a simple kind of malt food from cholam is outlined. This can be tried in every home.

Cholam is soaked for a day in pure drinking water which has to be changed at least four times to allow proper aeration of the seed. The grain is allowed to sprout in a cool place in a room for three to four days until the rootlets are about $\frac{3}{4}$ " long. After drying in the sun, the husk and sprouts are carefully removed by pounding in a wooden mortar. The husked, unbroken grain is gently roasted in a roaster or frying pan till a characteristic aroma is given out. This treated grain is called malt which can be crushed and sieved to get fine flour. The coarse fraction can be crushed once again to get second grade malt flour.

Conjee prepared out of the cholam malt flour with milk and sugar added to taste, would make a beverage which has practically all the beneficial effects of any other malt. During the sprouting of cholam active substances like diastase are developed, which digest starch into malt-sugar and break down partly the