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OCCURRENCE OF ABORTIVE SPIKES IN PEPPER
(*PIPER NIGRUM* LINN)

Pepper vine, a scandent plant, produces flowers in the leaf axils of lateral or flowering branches (plageotropes) growing at right angles from the main climbing stem. The inflorescence is a spike, the length of which varies from variety to variety. Minute unisexual or bisexual flowers are arranged in the spikes in an acropetal manner. In Kerala, the normal flowering season of pepper coincides with the onset of South West Monsoon in May-June. The first Monsoon showers received after a long dry spell induces new flushes in the plant. Spikes are produced in the axils of the fresh leaves. Off season flowering, too, is observed to take place in many plants. Irrespective of the time of flowering, spike production is invariably associated with the formation of fresh leaves on the plant, and hence, factors which induce flushing, induce flowering also. It has been observed that the vines could be induced to flower at any time of the year by providing conducive circumstances. The number of spikes on a lateral or flowering branch, has long been identified as one of the major factors contributing towards the productivity of a vine. Though there is a potentiality of producing a spike in the axil of every fresh leaf, all the new leaf axils are not observed to be producing a fruiting inflorescence. Some of the cultivated varieties are known to be superior in this aspect, which is recognised as a varietal character. Detailed observations on the morphological characters of some pepper varieties in the germplasm collection at Pepper Research Station, Panniyur recorded during 1977-'78 revealed that a spike is actually produced in the axil of every fresh leaf, in a fruiting branch, though all of them do not develop as normal spikes. This was observed to be a common phenomenon for all the varieties and at all times. But, some of the spikes are retained on the plant only for a very short period and are then shed, leaving a scar in the axil. These abortive spikes, were observed to be mostly microscopic in size, but may attain a maximum length of 2.7 cm. (including the peduncle) in rare cases. They remain on the plant for only five or six days, at the most. As usual, these spikes too emerge covered in a sheath. In many cases, they are shed even before the sheaths open. Those spikes which manage to come out of the sheath, have all the appearances of a normal spike, excepting that they are miniature in size and are erect. Due to their small size and very short life span, the existence of these abortive spikes were hitherto unnoticed. A detailed study of this phenomenon was conducted on 39 varieties of pepper. At the onset of the South West Monsoon, 25 fruiting branches in each of the 39 varieties were marked. The number of fresh leaves produced on these branches and the number of abortive and

Table 1 Leaf spike production in pepper varieties (observations from 25 fruiting branches of each variety)

Name of variety	No. of new leaf' pro-	No. of normal spikes	No. of abortive spikes	Percentage of		Mean length of abortive spikes (mm)
				normal spikes	Abortive spikes	
Paniyur—1	68	44	24	67.7	32.3	2.20
Karimunda	96	69	36	62.5	37.5	1.70
Arakulam Munda	79	76	16	82.6	17.4	1.50
Sullia	127	25	102	19.7	80.3	2.50
Cheriyakaniakadan	157	85	72	54.1	45.9	1.60
Balankotta	87	29	58	33.1	66.6	2.70
Kalluvally	97	61	36	62.8	37.2	1.80
Narayakodi	88	44	45	49.4	50.6	1.30
Kaniakadan	112	47	65	41.9	58.1	1.10
Arikottanadan	139	51	88	36.6	63.4	1.30
Kuthiravaly	122	78	44	63.9	36.1	2.30
Kottanadan	119	55	64	46.2	53.8	1.70
Karivilanchy	93	46	47	49.4	50.6	1.30
Arissinimorata	72	10	62	13.8	86.2	1.60
Doddiga	80	13	67	16.2	83.8	1.80
Ceylon	90	13	77	14.4	85.6	1.40

normal spikes formed, were observed and recorded. The data from a representative group of plants is presented in Table 1.

It can be seen from the Table that some of the varieties (eg. *Arakulam Munda*) produced more than one spike in a leaf axil. In such varieties, a few of the leaf axils yielded two spikes, of which, usually, one was abortive and the other one normal. Both the spikes were either abortive or normal in rare cases. Invariably, the percentage of abortive spikes formed, was less in varieties which gave normal to high yield. Poor yielders had a predominance of abortive spikes on their fruiting branches. This is only natural, as the number of developed spikes in unit area is one of the major factors determining the yield. The sexuality of the flowers in the abortive spikes could not be determined, as they were shed before the flowers developed.

സംഗ്രഹം

കുരുമുളകു ചെടികളുടെ പൂവണിയൽ സിബന്ധിച്ചു ഇതുവരെ അറിയപ്പെടാതിരുന്ന ഒരു പ്രതിഭാസം കണ്ടെത്തുകയുണ്ടായി. ഏതു കാലത്തായാലും എല്ലായിനം കുരുമുളകു വള്ളികളിലും കണ്ണിതല (lateral branch)കളിൽ ഉണ്ടാകുന്ന ഓരോ പുതിയ ഇലയോടും ഒപ്പം പത്രകക്ഷത്തിൽ ഒന്നോ ചുരുക്കംചിലപ്പോൾ രണ്ടൊതിരികൾ(പൂങ്കലകൾ) ഉണ്ടാകുന്നുണ്ട്. എന്നാൽ, ഇവയിൽ ഒരുഭാഗം അഞ്ചോ ആറോ ദിവസങ്ങൾക്കുള്ളിൽ തന്നെ കൊഴിഞ്ഞു പോകുന്നതിനാൽ ശ്രദ്ധിക്കപ്പെടുന്നില്ല. ആകൃതിയിലും പ്രകൃതിയിലും ഈ തിരികൾക്ക് സാധാരണ തിരികളുമായി സാമ്യമുണ്ടെങ്കിലും ഇവക്ക് വലിപ്പം തീരെകുറവാണ്. സാധാരണ തിരികളുടെ കൊച്ചുപതിപ്പുകളായ ഈ അല്ലായ്പ്പുകൾ കായ്ഫലം കുറഞ്ഞവള്ളികളിൽ ധാരാളമായും ഉല്പാദനക്ഷമതയുള്ള കൊടികളിൽ കുറവായും കാണപ്പെടുന്നു. കൊടികളുടെ ഉല്പാദനക്ഷമതയുമായി ബന്ധപ്പെട്ടിരിക്കാൻ ഈ പ്രതിഭാസത്തെപ്പറ്റി വിശദപഠനങ്ങൾ പുരോഗമിച്ചു കൊണ്ടിരിക്കുന്നു.

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