

EFFECT OF MULCHING AND SIZE OF SEED MATERIALS ON THE TUBER YIELD AND QUALITY OF COLOCASIA

[*COLOCASIA ESCULENTA* (L) SCHOTT]

Mulching is a common practice for colocasia in certain places. The present investigation was taken up with the object of determining the relative merits of mulching and different sizes of planting materials on the yield and quality of colocasia tubers. The experiment was conducted in the uplands of the Agricultural College Farm, Veliayani, Kerala during December-May, 1978-79 using the colocasia variety *Thamarakannan*. The split plot design was adopted with three mulching practices (no mulching, mulching once at planting and mulching twice, once at the time of planting and the next at the time of first earthing up) assigned to the main plots and four sizes of planting materials (small cormels weighing 15-25 g, medium cormels weighing 35-44 g, large cormels weighing 55-65 g and mother corms weighing 60-70 g) in the subplots. The soil of the experimental site was red loam with pH 5.4, total nitrogen 0.043 per cent, total P_2O_5 0.050 per cent, and total K_2O 0.050 per cent.

The data on the tuber yield, dry matter percentage, dry matter yield, starch content and starch yield are presented in Table 1.

Though there was no significant difference in yield due to mulching, the beneficial effects of this practice was indicated by the increased tuber yield. Mulching, in addition to conserving soil moisture and reducing temperature around the root zone might have improved the structure and physical condition of the soil. They would have facilitated better tuber development in the mulched plots. Onwueme (1978) reported that application of mulch soon after planting was sometimes beneficial in upland colocasia cultivation. The results obtained in the present investigation are also in conformity with the findings of Balakrishnan Rao (1957), Sale (1966) and Singh and Mandal (1970) who reported the beneficial effect of mulching on the final yield of tubers.

The sizes of planting material had a significant effect on the yield of colocasia. Plants from the small sized cormels had a poor growth and the yield from such plants was significantly lower than from plants raised from other seed materials of different sizes. The medium sized planting material contributed to the highest tuber yield of 128 q/ha.

The dry matter content of tubers differed significantly due to the effects of mulching. Mulching decreased the dry matter percentage. This revealed that the tubers in control plots had a lesser moisture content. Mulching might have helped in the absorption of more water. Increase in moisture content in tubers due to mulching was earlier reported by Azariah (1953), Army *et al.* (1961) and Koshi and Fryrear (1971).

The dry matter percentage did not differ significantly due to the effects of sizes of planting material. But the total dry matter yield was influenced by the size of cormels, medium sized cormels giving the maximum of 28.04 q/ha which in turn recorded the highest fresh tuber yield also.

Table 1
Tuber yield and tuber quality of colocasia as influenced by mulching and seed size

Treatments	Tuber yield (q/ha)	Dry matter (%)	Dry matter yield (q/ha)	Starch (%)	Starch yield (q/ha)
No mulching	111.5	22.16	23.65	62.24	14.15
Mulching at planting	115.2	21.04	24.64	61.36	15.39
Mulching at planting and first earthing up	115.8	20.32	24.24	59.54	14.92
CD	—	1.876	—	—	—
Small cormels	92.1	20.94	19.09	61.65	11.89
Medium cormels	128.0	21.85	28.04	61.77	17.17
Large cormels	119.7	21.80	26.04	60.08	15.77
Corms	117.0	20.10	23.54	60.68	14.44
CD	16.43	—	3.963	—	2.509

Starch yield was not influenced by the mulching practices. But the sizes of seed material had significant influence on the starch yield. The tuber yield and starch yield were the maximum in the medium sized planting material while the small sized cormels recorded the lowest value.

സംഗ്രഹം

കരവദേശത്ത് ചേമ്പ് കൃഷി ചെയ്യുമ്പോൾ തടങ്ങളിൽ കരിയില ഉപയോഗിച്ച് മണ്ണിൽ പുത (മൾച്ചിംഗ്) കൊടുക്കുന്നതുകൊണ്ടും നടാൻ ഉപയോഗിക്കുന്ന ചേമ്പിൻ വിത്തുകളുടെ വലുപ്പവ്യത്യാസം കൊണ്ടും ചേമ്പിൻ വിളവിലും മറ്റു ഗുണനിലവാരത്തിലും സംഭവിയ്ക്കുന്ന വ്യതിയാനങ്ങൾ 1968-79ൽ പഠിക്കുകയുണ്ടായി. മൾച്ചിംഗ് നടത്തുന്നതുമൂലം ചേമ്പിൻ മൊത്തം വിളവ് ഗണ്യമായി വർദ്ധിക്കുന്നില്ലെങ്കിലും ഈ സമ്പ്രദായം ഉൽപാദനം കൂട്ടുന്നതിന് സഹായകരമായി കണ്ടു. പല വലുപ്പത്തിലുള്ള ചേമ്പിൻ വിത്തുകളിൽ 35-45 ഗ്രാം തൂക്കമുള്ള ഇടത്തരം വിത്തുകളാണ് ഏറ്റവും കൂടിയ വിളവ് നൽകിയത്.

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