RESEARCH ON RAPESEED (BRASSICA NAPUS L.) AND FODDER RAPE AT UYOLE, TANZANIA

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INTRODUCTION

Uyole Agricultural Centre carries on research and training in the Southern Highlands of Tanzania at altitude 1,800m latitude $8^{o}55'$ S. longitude $33^{o}32'$ E. The rainfall is 860 mm unimodal November to May, maximum temperature 21-27°C in September and October and minimum 4-12°C in June and July. The soil is of volcanic origin, pH 6.5, low in available nitrogen, phosphorus, copper and boron.

In the years 1972-75, five field experiments were carried out on rapeseed (B. napus L.) fodder rape and Marrowstem Kale production to test planting time and the performance of different cultivars. The results are reported in this paper.

MATERIALS AND METHODS

In experiment 108/72 cultivars:Veteran, Tema, Maris Kestrel, Grune Ange Leiter and Fora were planted late in January, in randomized blocks, four replicates, 2 x 15m plot size, at 50 cm between rows with 80 kg N/ha, 100 kg P_2O_5/ha and 75 kg K_2O/ha. The seed rate was 8 kg/ha. Thiodan at 1 litre/ha was sprayed two weeks after emergence for pest control.

Experiment 109/72 tested cultivars: Silona, Fora, Emerald, Sv.01160 and Cullens Eng Giant, under treatment similar to 108/72 and planted late in January.

In experiment 118/74 cultivars: Veteran, Grune Ange Leiter, Maris Kestrel, Midas, SV.01264, Silona, SV.01160, Cullens Eng Giant, SV.01141, Emerald and Fora were studied in randomized blocks, two replicates. The seed rate was 10 kg/ha, 80 kg N/ha, 44 kg P_2O_5/ha and 62 kg K_2O/ha were applied. It was planted late in January.

Experiments 41/75 and 47/75 studied the planting time and response to trace elements respectively on the cultivar Zephyr. 47/75 was planted in mid January.

RESULTS

In experiment 108/72 seedlings emerged eight days after planting, grew well for two months and thereafter became very pale probably due to waterlogging following heavy rainfall. It was cancelled.

The results of experiment 109/72 are shown in Table 1.

TABLE 1

CULTIVAR TRIAL WITH FODDER-RAPE FOR BIOMASS

Cultivar	Fresh Wt kg/ha	% Dry Matter	DM kg/ha	DM a = 100
Silona	25673	13.2	3398	100
Fora	27962	14.2	3975	117
Emerald	33654	15.9	5352	158
Sv.01160	33942	14.3	4839	142
Cullens Eng.Giant	30193	14.0	4230	124

The results of 118/74 are shown in Table 2.

TABLE 2

BIOMASS YIELD OF 11 CULTIVARS

Cultivar	DM yield Kg/ha	Remarks
Veteran	6390	Marrow-stem
Grune Ange Leiter	5940	Kale
Maris Kestrel	5750	
Midas	6220	
Silona	6470	
Fora	5930	
Emerald	9040	
Sv.01160	6120	Fodder-rape
Cullens Eng.Giant	7400	
Sv.01141	6960	
Sv.01264	4780	

The results of 41/75 are shown in Table 3.

TABLE 3

INFLUENCE OF PLANTING TIME ON YIELD SEED QUALITY AND FLOWERING TIME OF ZEPHYR RAPESEED

Planting date (date/month)	Yield Kg/ha	1000-kernel wt, gm	Bulk wt. Kg/Hl	Date of 50 % flowering (date/month)	Days from planting to 50 % flowering
15/1	2050	3.60	65	18/3	62
31/1	1860	3.65	64	8/4	67
14/2	1970	4.30	64	25/4	70
3/3	410	4.10	61	13/5	71
17/3	330	4.10	61	26/5	70
2/4	0	-	-	16/6	75

LSD: 580 Kg/ha, P = 05 CV = 26 %

The results of 47/75 are summarized in Table 4.

TABLE 4

INFLUENCE OF MICRONUTRIENTS CU, B, ON YIELD AND SEED QUALITY OF ZEPHYR RAPESEED

Treatment	Yield Kg/ha	1000-kernel wt, gm	Bulk-weight Kg/HL
No B or Cu	1950	3.5	65
Borax, 20 kg/ha	2030	3.6	64
Blitox 2 kg/ha*	2070	3.8	64
Borax, 20 kg/ha & Blitox, 2 kg/ha	2400	3.6	63

* Blitox = Copper oxichloride LSD NS at P = 05, CV = 13.4 %

DISCUSSION

Experiment 108/72 was discontinued due to water logging which is detrimental to the crop (4). Table 1 shows biomass yield lower than those generally obtained in Scandinavia from fodder rape (1), but satisfactory for a single cut in a season at Uyole. The data in Table 2 show that

Marrow-stem Kale and fodder rape can be grown at Uyole with satisfactory results provided the cabbage saw-fly (Athalia sjodteli), the cabbage aphid (Brevicoryne brassicae L.) and the cutworm (Agrotis orthogonia Morr.) are controlled.

The data in Table 3 show that Zephyr rapeseed should be planted not later than mid-February at Uyole. The yield is comparable to that obtained in Western Canada (4, pg 234 Table 7). From Table 4, application of copper and boron showed no significant effect on the amount of seed produced but the yield attained a satisfactory quantity of 2,000 kg/ha.

CONCLUSION

Marrow-stem Kale, fodder rape and Zephyr rapeseed can be grown at Uyole provided water-logging is avoided and pests are effectively controlled.

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