

## FORAGE PRODUCTION FROM LEAF AND ROOT BRASSICAS

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Dr. G. A. Jung of the U.S. Regional Pasture Research Laboratory, University Park Pennsylvania writes "the forage Brassicas, in general, can be described as high yielding, high quality fast growing biennial crops. The above ground parts (stems/leaves) of rape and kale, the leafy Brassicas and all parts (roots/stems/leaves) of root Brassica crops, swedes and turnips, are utilized by livestock.

"Brassicas are high in dry matter digestibility at 85-95% which contrasts with the digestibility of good alfalfa, at 70%. This is significant because the digestible energy of most forage crops is too low for high gains in livestock animals." "Brassicas increase the availability of certain minerals and are high in protein; leaves contain 18-25% crude protein, while turnip and swede roots contain approximately 10% crude protein.

"Probably the most promising aspect of Brassica usage is for late summer or fall grazing. Brassicas retain their nutritional value well into freezing temperatures and can possibly be grazed as late as the end of December". "Rape and turnips reach their maximum yields between 90 and 100 days after planting. Spring sown rape should be grazed or green chopped in August. Swedes and kale require 150 to 180 days to realize maximum yields." Swedes and kale have a higher yield potential than rape and turnips.

During the 1982 season 27 different Brassica crops supplied by Dr. Jung were evaluated at the University of Massachusetts Agricultural Experiment Station farm in South Deerfield. Establishment was variable, mostly a result of the extremely wet conditions of last spring. Yields are presented in Table 1. The highest yielding of the Brassicas only produced 45% to 56% of normal dry matter yield that can be produced from corn for silage in this environment. Given a better year, results may have been more favorable. However, even these yields compare well with forage yields from many hay pasture fields. The Brassica crops probably won't be useful on dairy farms except for young stock but maybe of value in other livestock enterprises. They can be planted into conventionally tilled fields or using no-till planters into runout pasture. Dr. Jung has found no-till seeding to be a suitable method of establishment in areas of site limitation. A smaller number of the more promising Brassicas are being evaluated again in 1983.

Table 1. Brassica root and total green yields and dry matter yields 92 days after planting.

Brassica	Root Green Wt.	Total Green Wt. ton per acre	Total Dry Wt.
Macro Stubble Turnip	24.6	59.8	3.7
Kapai Turnip	19.8	49.8	3.5
Winfield Rape	-	40.6	3.2
N.Z. Green Globe Turnip	16.6	47.9	3.2
Sirius Turnip	19.4	49.9	3.2
York Globe Turnip	18.6	51.4	3.2
Green Top Yellow Turnip	9.1	44.5	3.1
Rangi Rape	-	42.3	3.0
Wairoa Rape	-	40.6	2.9
Tyfon Rape	16.1	50.1	2.9
Soma Rape	-	34.0	2.8
Silona Swede	1.0	40.2	2.8
Hercules Rape	-	35.1	2.7
Doone Major Swede	7.5	42.6	2.7
Emerald Rape	-	36.8	2.7
Pecko Rape	-	44.3	2.6
Dwarf Essex Rape	-	39.7	2.5
Moana Rape	1.7	36.9	2.5
Sensation Swede	11.7	33.4	2.5
Grunder Kale	-	28.1	2.5
Sipal Rape	-	37.6	2.4
Polaris Turnip	15.0	43.7	2.4
Fora Rape	-	36.5	2.3
N.Z. Calder Swede	1.8	30.0	2.3
Brink Rape	-	33.2	2.3
Wairangi Rape	-	29.4	2.0
Marrow Stem Kale	-	24.0	1.8

Swedes and kales may not have reached full yield potential at this harvest date.