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BROCCOLI SEEDING DATE AND SEEDED CULTIVAR/BREEDING
LINE TRIALS - 1985

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A broccoli seeding date and seeded cultivar/breeding line trial was established at the Texas A&M University Agricultural Research and Extension Center at Overton in the spring of 1985. The seeding date study was designed to determine the earliest and latest dates that broccoli could be seeded for maximum production. Six cultivars and eight breeding lines obtained from three seed sources were included in the cultivar/breeding line trials.

METHODS AND MATERIALS

Both trial areas were disked and bedded on 40-in. centers on 23 January 1985. Fertilizer was applied at the rate of 900 lbs. per acre of 13-13-13 beneath the row. On 3 and 23 April, an additional 100 lbs. per acre of 34 percent NH_4NO_3 was applied as a sidedress. Water was applied by sprinkler irrigation as needed. Dipel 4L (Bacillus thurengensis) was used for looper control according to label directions.

Seeding date trial. Nine planting dates (Table 1) were placed in a randomized complete block design with 4 replications. The cultivar used was 'Southern Comet'. After emergence the plants were thinned to 8 in. apart in the row. Data were obtained on days to emergence, days to maturity, total number of harvests, head number, head size, and pounds per acre yield.

Seeded cultivar/breeding line trial. All plots were seeded on 11 February 1985. After emergence the plants were thinned to 12-in. apart in the row. Data were obtained on early yield (6, 9, 14 May harvest), total yield, and number of heads.

RESULTS AND DISCUSSION

Seeding date trial. Days to emergence decreased from 18 January to 18 February, then remained the same through 4 March (Table 1). Another decrease was noted from 11 March to 1 April. The 28 January planting took 14 more days to mature than the other plantings. The

number of harvests was increased by the 28 January and 11 February plantings. A decrease was observed from the 11 February to 4 March plantings. Due to high temperatures, bloom initiation occurred for all planting dates from 11 March to 1 April, therefore no marketable heads were produced and further data were not obtained.

There was a significant increase in head number for the 28 January planting over all other planting dates (Table 2). There was no significant difference between the 11 February and 18 February dates, however, these dates resulted in increases over the later dates. There was no difference detected between the 25 February and 4 March dates. No significant difference was found for head size between any of the planting dates. Yield was significantly increased by the 28 January seeding date. There was no difference between the dates of 11 February and 18 February, but all three were higher than the remaining seeding dates.

These data indicate that broccoli could be seeded in the East Texas area sometime between the middle of January and the middle of February in order to maximize yields. Even though weather conditions are not normally favorable at this time of year, it should be possible to find a favorable time for planting within this period.

Seeded cultivar/breeding line trial. Several cultivar/breeding lines showed high early yield (Table 3). The highest was FMX-50 followed by 'Packman'. These two, however, were not significantly higher than FMX-52, or FMX-43. Several cultivar/breeding lines produced total yields of 5,000 lbs. or more per acre. The highest yield was produced by 'Packman'. This cultivar also produced the largest number of heads.

In this trial, the overall data indicated that of the cultivars, 'Packman' and 'Southern Comet' have the potential for being very good varieties for spring production. Of the breeding lines, FMX-50 and FMX-52 also could be promising if and when they are released to the public as varieties.

Table 1. Effect of planting date on days to emergence, days to maturity, and number of harvests of spring seeded broccoli.

PLANTING DATE*	DAYS TO EMERGENCE	DAYS TO MATURITY	NUMBER OF HARVESTS
28 Jan	21	95	6
11 Feb	12	81	6
18 Feb	8	81	4
25 Feb	8	81	3
4 March	8	81	1
11 March	7	-	-
18 March	7	-	-
25 March	6	-	-
1 April	6	-	-

* Marketable heads were not produced after 4 March planting date.

Table 2. Effect of planting dates on number of heads, head size, and yield of spring seeded broccoli.

PLANTING DATE	NUMBER OF HEADS PER ACRE	HEAD SIZE (oz)	YIELD PER ACRE (lbs)
28 January	19166	7.5	9008
11 February	12196	8.8	6708
18 February	13939	7.0	6133
25 February	3269	11.5	2354
5 March	2452	9.7	1496
11 March	-	-	-
18 March	-	-	-
25 March	-	-	-
1 April	-	-	-
L.S.D. .05	3018	N.S.	1974

Table 3. Early yield, total yield, and head no. of spring seeded broccoli at Overton, Texas-1985.

CULTIVAR/ BREEDING LINE	SEED SOURCE ¹	EARLY YIELD lbs/ac ²	TOTAL YIELD lbs/ac	HEAD No./ac
Cape Queen	1	261	2875	5227
Packman	1	4530*	7057*	16553*
Packer	1	610	3398	6098
Green Comet	1	2352	3398	6098
FMX-43	2	3311*	4617	9583
FMX-44	2	2526	4356	8712
FMX-46	2	87	3398	6970
FMX-48	2	1394	5053	6098
FMX-49	2	2701	4879	6970
FMX-50	2	4617*	6273*	14810*
FMX-51	2	1830	3398	5227
FMX-52	2	3572*	6186*	14810*
Kwik-Green	3	1220	3572	6970
Southern Comet	3	2700	5924*	11326
L.S.D. .05		1876	1884	4792

¹Seed compliments: Peto Seed CO. (1), Ferry Morse Seed Co. (2), Abbott and Cobb Seed Co. (3).

²Yield from 6, 9, 14 May harvest.