

CONN

S

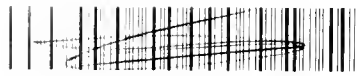
43

.E22

no.845

Please  
handle this volume  
with care.

The University of Connecticut  
Libraries, Storrs



3 9153 01143725 0

7-Ag 845-845

*The  
Connecticut  
Agricultural  
Experiment  
Station,  
New Haven*

**Broccoli  
and Cauliflower  
Trials — 1986**

BY DAVID E. HILL

CONN  
S  
43  
.E22  
No. 845

*Bulletin 845  
March 1987*



GOVERNMENT PUBLICATIONS  
RECEIVED  
AUG 21 1987  
UNIVERSITY LIBRARY  
STATE OF CONNECTICUT

Digitized by the Internet Archive  
in 2011 with funding from  
LYRASIS members and Sloan Foundation

<http://www.archive.org/details/broccolicauliflo845hill>

# Broccoli and Cauliflower

## Trials — 1986

BY DAVID E. HILL

Broccoli and cauliflower have increased in popularity during the past decade as consumers have heeded reports by nutritionists and the American Medical Association that eating members of the genus *Brassica* is beneficial. Compared to most vegetables, broccoli is rich in vitamins A, B, and C, minerals and fiber. Cauliflower is similar nutritionally except in vitamin A (Anon. 1971).

This increased popularity is seen in recent statistics (Anon. 1985). Since 1974, the acreage of both crops has more than doubled in the United States. Production of broccoli for the fresh market increased from 79,500 tons in 1974 to 337,850 tons in 1984, a four-fold increase. Production of broccoli for processing increased from 100,250 tons in 1974 to 177,090 tons in 1984, a 75% increase. The national average yield is 4.0 tons/acre.

Production of cauliflower for the fresh market increased from 77,650 tons in 1974 to 235,600 tons in 1984, a three-fold increase. Production for processing increased from 74,000 tons in 1974 to 93,560 tons in 1984, a 26% increase. The national average yield is 5.4 tons/acre.

The increased demand prompted two supermarket chains to become keenly interested in Connecticut-grown broccoli, which fostered the "Broccoli Project" in 1985. In 1985, the Connecticut Department of Agriculture enlisted five growers, who grew a fall crop on 8 acres. In 1986, 13 growers raised 61 acres.

The Connecticut Agricultural Experiment Station's role in the Project was testing cultivars (cultivated varieties) from domestic

seed companies to determine those best suited to Connecticut's soil and climate. In 1985, I tested 28 named and four experimental broccoli cultivars and found seven in the spring and five in the fall that consistently produced good quality heads (Hill 1986).

In 1986, I retested 13 promising broccoli cultivars and added six new cultivars and seven experimental varieties from California for a total of 26. Because discussions began this year about a companion "Cauliflower Project" in 1987, I also began testing cauliflower cultivars. I tested 10 named cultivars in the spring of 1986 and added seven more, including two experimentals, in the fall.

In this bulletin I report yields, quality, and maturity of 26 broccoli cultivars and 10 to 17 cauliflower cultivars grown at Mt. Carmel and Windsor in the spring and fall of 1986.

### SITES AND MANAGEMENT

The broccoli and cauliflower trials were conducted at the Valley Laboratory, Windsor on Merrimac sandy loam, a sandy terrace soil with somewhat limited moisture holding capacity; and at Lockwood Farm, Mt. Carmel on Cheshire fine sandy loam, a loamy upland soil with a moderate moisture holding capacity.

The seed for the spring crop was planted in a greenhouse with vents opened at 70 F and heated when the temperature fell below 50 F. The seedlings were moved to a cold frame for hardening 2 weeks before they were transplanted in the field. Seed for the fall crop was planted outdoors and seedlings were transplanted when

they were 4" high. For the fall crop, second and third plantings were made of Dandy Early, Emperor, Packman, Valiant, and XPH 5004. Seeds were started at 3-week intervals and seedlings transplanted at 2-week intervals following the seeding and transplanting of the first crop. At Mt. Carmel, the fall crop was planted in the same field as the spring crop.

The seedlings were grown in Promix BX in standard plastic pots measuring 2-5/8 by 2-1/4 by 2-5/16" and held in packs of 36. Water soluble 20-20-20 fertilizer was added to the seedlings about 3 to 4 weeks after germination. The seedlings were transplanted in rows 36" apart with spacing 18" within rows to provide 9680 plants/A. Each planting consisted of five randomized blocks with six plants per cultivar in each replication. Transplanted seedlings that

died the first week were replaced. In the spring, leaves of all cauliflower cultivars were tied around the newly developing heads, called curds, when they reached about 2" diameter. In the fall, leaves of several cultivars were not tied because they were of the "self-blanching" type in which inner leaves remain tightly furled preventing the curd from turning yellow and also because the sun's intensity had waned.

Mature heads of broccoli and cauliflower were harvested at 3-day intervals. Yields of broccoli were weighed and the quality was judged for color, evenness and compactness of head, excessive stalkiness, and leaves protruding from the head. The quality of cauliflower was judged for size, color, smoothness of curd, and protection of the curd by surrounding leaves of self-blanching types.

TABLE 1--SOIL AND CROP MANAGEMENT OF BROCCOLI (B) AND CAULIFLOWER (C)  
AND PERTINENT DATES

| Activity                                       |              | Spring crop    | Fall Crop      |
|--|--------------|----------------|----------------|
| -----  |              |                |                |
| Soil fertilization (Rates based on soil tests) |              |                |                |
| 10-10-10 (Windsor)                             | B,C          | 1300 lbs/A     | 1300 lbs/A     |
| 10-10-10 (Mt. Carmel)                          | B,C          | 1300 lbs/A     | 700 lbs/A      |
| lime (Windsor)                                 | B,C          | None           | None           |
| lime (Mt. Carmel)                              | B,C          | 2175 lbs/A     | None           |
| Planting Dates                                 |              |                |                |
| Seeding in greenhouse                          | 1st Crop B,C | March 10       | June 19        |
| or outdoor enclosure                           | 2nd Crop B   | -              | July 6         |
|  | 3rd Crop B   | -              | July 29        |
| Transfer to cold frame                         | B,C          | April 4-7      | -              |
| Transplant seedlings                           |              |                |                |
| to field                                       | 1st Crop B,C | April 21-28    | July 22-26     |
|  | 2nd Crop B   | -              | Aug 7-8        |
|  | 3rd Crop B   | -              | Aug 19         |
| Pest Control                                   |              |                |                |
| Root maggots                                   | B,C          | Lorsban 4E     | Lorsban 4E     |
| Cabbage worms                                  | B,C          | Malathion 50EC | Malathion 50EC |
| Irrigation                                     |              |                |                |
| Windsor  | B,C          | 4              | 1              |
| Mt. Carmel                                     | B,C          | 4              | 2              |
| Weed Control                                   |              |                |                |
| Cultivations                                   | B,C          | 2              | 2              |

The details of management of the soil and crops and pertinent dates are listed in Table 1.

#### CHARACTERISTICS OF QUALITY

The characteristics of broccoli and cauliflower used to judge marketability in Tables 2, 3, 4, and 6 require definition.

##### BROCCOLI

**Size of head.** Head diameters follow national quality standards for broccoli. They are very large (vlg) 7" or more; large (lg) 5 to 6-7/8"; medium (med) 3-1/2 to 4-7/8"; small (sm) less than 3-1/2". Where two size classes are listed, they are co-dominant. Other classes may constitute less than 20% of the heads.

**Leafy.** Leaves usually grow on the stalk below the head but extend around and above the head. A leafy head has small to medium sized leaves protruding through the head.

**Lumpy.** A lumpy head is one in which portions of the head grow faster than others. The uneven surface is less asthetic. Depressions in these heads may collect water and become focal points for bacterial and fungal infections.

**Button.** Buttoning (but.) is the formation of the head while the plant is small. This is caused by vernalization or chilling of the seedlings. The head is only about 1" wide. Buttoning has been observed mostly on early cultivars. In the spring, Early Emerald, PSR 3481 and PSR 35184 buttoned over 50% at Mt. Carmel but only 20 to 40% at Windsor.

**Color.** Dark green to bluish green heads are preferred. A purplish cast, generally caused by cold, does not affect marketability. Pale green, yellowish and reddish colors indicate mineral deficiencies, disease, or overmaturity. Brown, black, or water soaked patches indicate disease.

**Brown beading.** This defect appears as yellow and brown flecks on a maturing head, and is the decay of individual florets within the head. The cause of this symptom is unknown, but it most often appeared in the fall crop.

**Corky stem.** The external part of the stem cracks and produces light brownish scars. This symptom is thought to be caused by boron deficiency.

**Exerted heads.** The head is on a stalk that rises above the main body of leaves. Cultivars

with well-exerted heads have been developed for mechanical harvest.

##### CAULIFLOWER

**Size of curd.** Curd diameters follow national quality standards for cauliflower. They are large (lg) 7" or more; medium (med) 5 to 6-7/8"; small (sm) 3-1/2 to 4-7/8"; and very small (vsm) less than 3-1/2". Where two classes are listed, both are codominant. Other size classes may constitute less than 20% of the heads.

**Rough curd.** Individual branches within the curd may develop more rapidly than others and create an uneven surface. Rough curds are less appealing to the eye.

**Ricey curd.** Premature formation and elongation of flower parts which emerge from the curd to create a soft velvety appearance.

**Color.** Curd color should be white or creamy white. Curds become yellow if exposed to sunlight. Reddish and brownish colors or water soaked appearance generally indicate mineral deficiencies or disease.

**Leafy.** Leaves that generally wrap around the developing curd protrude from the curd.

#### YIELD AND QUALITY OF BROCCOLI

**Spring crop.** The average yields of all cultivars was 7,324 lb/A at Windsor compared to 6,378 lb/A at Mt. Carmel, a difference of 15%. At Windsor, Pirate yielded over 7 tons/A. Emperor, Excalibur, Green Duke, Green Valiant, Mercedes, Packman, Premium Crop, Prominence and XPH 5004 exceeded the national average of 4 tons/A. At Mt. Carmel, Pirate again yielded over 7.5 tons/A. The yields of Emperor, Green Duke, Green Valiant, Premium Crop, Prominence, and PSR 20784 exceeded the national average. It is interesting to note that most of the heavy producers are classified as mid season and late varieties. These varieties had higher yields at Mt. Carmel compared to Windsor despite the lower average yields of all cultivars reported at Mt. Carmel. The lower average yield at Mt. Carmel is attributed to low yields of the early varieties that formed heads on small plants in response to cooler temperatures.

Cultivars with high yields do not necessarily produce heads of good quality. Some high

TABLE 2--YIELD AND QUALITY OF BROCCOLI AT MT. CARMEL AND WINDSOR, SPRING 1986

|                 | Mt. Carmel |            |             |              | Windsor    |            |             |              | Size and quality of heads         |
|-----------------|------------|------------|-------------|--------------|------------|------------|-------------|--------------|-----------------------------------|
|                 | Heads      | Avg.       | First       | Side         | Heads      | Avg.       | First       | Side         |                                   |
|                 | Hvst.<br>% | Head<br>lb | Cut<br>lb/A | Cuts<br>lb/A | Hvst.<br>% | Head<br>lb | Cut<br>lb/A | Cuts<br>lb/A |                                   |
| Baccus**        | 97         | 0.4        | 4176        | 3376         | 97         | 0.6        | 5732        | 6163         | med to lg, compact, leafy         |
| Dandy Early     | 97         | 0.4        | 3713        | 3106         | 90         | 0.8        | 7332        | 4639         | sm to med, compact                |
| Early Emerald   | 20         | 0.4        | 3497        | 3642         | 77         | 0.5        | 4529        | 4800         | med, early but., late, compact    |
| Emperor         | 97         | 1.4        | 13093       | 1432         | 97         | 1.1        | 10471       | 6097         | vlg, lumpy                        |
| Excalibur       | 100        | 0.6        | 5347        | 1447         | 97         | 1.0        | 9565        | 779          | med to lg, leafy                  |
| Galaxy+         | 93         | 0.5        | 5126        | 4103         | 87         | 0.7        | 6501        | 7273         | med to lg, uniform                |
| Green Duke      | 100        | 1.4        | 13568       | 948          | 100        | 1.1        | 10680       | 4455         | lg, loose, late yellowing         |
| Green Dwarf     | 90         | 0.6        | 5567        | 3304         | 90         | 0.6        | 5403        | 5421         | med, ball-type, late yellowing    |
| Green Comet+    | 100        | 0.5        | 5187        | 1016         | 100        | 0.7        | 6825        | 2510         | med, compact, uniform             |
| Green Valiant   | 97         | 1.5        | 14741       | 1163         | 100        | 1.2        | 11724       | 3406         | vlg, loose, lumpy                 |
| Mercedes        | 93         | 0.4        | 4031        | 1495         | 100        | 0.8        | 7964        | 1999         | sm to med, leafy, lumpy, variable |
| Orion           | 80         | 0.5        | 4776        | 3483         | 63         | 0.6        | 6292        | 5769         | med, very leafy                   |
| Packman+        | 63         | 0.5        | 4888        | 5765         | 93         | 1.0        | 9247        | 6682         | med to vlg, early but., compact   |
| Paragon         | 97         | 0.5        | 4672        | 1973         | 93         | 0.5        | 4522        | 4557         | med, compact, well-exerted        |
| Pirate          | 100        | 1.6        | 15049       | 1180         | 100        | 1.5        | 14312       | 3060         | vlg, lumpy                        |
| Premium Crop+   | 97         | 1.1        | 10430       | 1010         | 97         | 0.9        | 9129        | 2612         | lg to vlg, compact, uniform       |
| Prominence      | 90         | 1.2        | 11582       | 2000         | 100        | 1.2        | 11113       | 6735         | vlg, lumpy, well-exerted          |
| Southern Comet+ | 90         | 0.4        | 4076        | 3582         | 90         | 0.5        | 5015        | 7163         | sm to med, compact, uniform       |
| PSR 3481        | 50         | 0.2        | 2161        | 6694         | 60         | 0.5        | 4892        | 9170         | extensive early but.              |
| PSR 20684       | 97         | 0.3        | 2747        | 6156         | 87         | 0.5        | 4883        | 7188         | med, compact, leafy               |
| PSR 20784       | 100        | 0.9        | 8772        | 2394         | 100        | 0.8        | 7474        | 5338         | med to lg, lumpy, leafy           |
| PSR 21284       | 73         | 0.3        | 2483        | 5097         | 83         | 0.3        | 2986        | 7501         | med, leafy compact                |
| PSR 21584       | 97         | 0.4        | 3867        | 2812         | 100        | 0.5        | 4746        | 6691         | med to lg, compact, lumpy         |
| PSR 35184       | 40         | 0.2        | 1631        | 5807         | 97         | 0.4        | 3534        | 6408         | med, compact, early but.          |
| PSX 21784       | 97         | 0.4        | 5553        | 4906         | 100        | 0.7        | 6990        | 6048         | med to lg, lumpy, ball-type       |
| XPH 5004+       | 100        | 0.5        | 5099        | 2532         | 100        | 0.9        | 8577        | 5170         | med to lg, well-exerted           |

+ Cultivars produced high quality heads at both Mt. Carmel and Windsor.

\*\* Formerly XPH 5003.

yielding cultivars have pronounced defects that affect marketability. The quality and defects are listed in Tables 2 and 3.

Table 2 contains the most prominent characteristics of each cultivar. Among the cultivars that had high yields, only Packman, Premium Crop, and XPH 5004 had high quality. The quality of Galaxy, Green Comet, and Southern Comet was also high but their yields were less than 4 tons/A. Dandy Early, Green

Dwarf, Mercedes, Orion, and Paragon, rated highly for yield and quality in 1985 (Hill 1986), fell short of expectations. Southern Comet and XPH 5004 also rated highly in 1985. The remaining cultivars did not produce consistently high quality heads at either site.

Secondary heads form on branches developing from the main stalk after the primary head has been harvested. Their harvest is called "side cutting". Side cutting of the secondary heads



TABLE 3--YIELD AND QUALITY OF BROCCOLI AT MT. CARMEL AND WINDSOR, FALL 1986

|                 | Mt. Carmel |      |       | Windsor |      |       | Size and quality of heads                     |
|-----------------|------------|------|-------|---------|------|-------|---|
|                 | Heads      | Ave. | First | Heads   | Ave. | First |   |
|                 | Hvst.      | Head | Cut   | Hvst.   | Head | Cut   |   |
|                 | %          | lb   | lb/A  | %       | lb   | lb/A  |   |
| Baccus**        | 100        | 0.4  | 3616  | 90      | 0.7  | 6587  | sm to lg, compact, variable                   |
| Dandy Early+    | 93         | 0.6  | 6284  | 100     | 1.2  | 11347 | med to lg, compact, uniform                   |
| Early Emerald   | 97         | 0.6  | 5655  | 97      | 1.1  | 10712 | lg, compact, well-exerted, excess. stalkiness |
| Emperor+        | 93         | 0.6  | 5697  | 100     | 0.9  | 9142  | lg, compact, uniform                          |
| Excalibur       | 97         | 0.5  | 4750  | 90      | 1.0  | 9554  | lg, leafy                                     |
| Galaxy+         | 100        | 0.6  | 5556  | 97      | 1.0  | 9903  | lg, compact, uniform                          |
| Green Duke      | 100        | 0.7  | 6473  | 100     | 1.5  | 14273 | lg to vlg, brown beading                      |
| Green Dwarf     | 93         | 0.5  | 4927  | 97      | 0.9  | 8615  | lg, ball-type, brown beading                  |
| Green Comet     | 100        | 0.5  | 4550  | 100     | 0.7  | 6534  | med to lg, compact, corky stem                |
| Green Valiant+  | 97         | 0.6  | 5669  | 100     | 0.8  | 7693  | med to lg, compact, uniform                   |
| Mercedes        | 100        | 0.8  | 8085  | 100     | 2.3  | 22147 | lg to vlg, loose, lumpy, compact, variable    |
| Orion           | 93         | 0.6  | 5445  | 100     | 0.8  | 7911  | med, leafy, lumpy                             |
| Packman+        | 100        | 0.6  | 6156  | 93      | 1.0  | 10162 | med to lg, compact, uniform                   |
| Paragon+        | 100        | 0.6  | 5498  | 90      | 0.9  | 8574  | lg, well-exerted, compact, uniform            |
| Pirate          | 90         | 0.7  | 6352  | 97      | 1.1  | 10290 | med to lg, lumpy                              |
| Premium Crop    | 93         | 0.6  | 6070  | 100     | 1.2  | 11651 | lg to vlg, compact, brown beading             |
| Prominence      | 100        | 0.8  | 7931  | 100     | 1.8  | 16958 | vlg to lg, well-exerted, lumpy, corky stem    |
| Southern Comet+ | 100        | 0.6  | 6188  | 100     | 1.0  | 9283  | med to lg, compact, uniform                   |
| PSR 3481        | 100        | 0.6  | 6242  | 100     | 0.8  | 7959  | lg, lumpy                                     |
| PSR 20684       | 100        | 0.7  | 6812  | 80      | 1.1  | 10560 | med to vlg, compact, exerted, variable        |
| PSR 20784       | 100        | 0.6  | 5679  | 100     | 0.9  | 8920  | med to lg, compact, lumpy, brown beading      |
| PSR 21284+      | 100        | 0.5  | 4642  | 100     | 0.8  | 7419  | med to lg, compact, uniform                   |
| PSR 21584+      | 97         | 0.7  | 6374  | 97      | 0.8  | 8104  | med to lg, compact, uniform                   |
| PSR 35184+      | 100        | 0.6  | 6235  | 97      | 0.9  | 8277  | med to lg, compact, well-exerted              |
| PSX 21784       | 93         | 0.7  | 6393  | 93      | 0.9  | 8311  | med to lg, compact, brown beading             |
| XPH 5004+       | 93         | 0.5  | 5180  | 97      | 1.0  | 9501  | med to lg, compact, uniform                   |

+ Cultivars produced high quality heads at both Mt. Carmel and Windsor.

\*\* Formerly XPH 5003.

continued for 4 weeks following harvest of the primary head. Only heads broader than 3" diameter were harvested. Most of their stalks were sufficiently long to bunch for sale. PSR 3481 produced the most side cuts at both sites. Although this variety buttoned severely, the plants produced many side cuts, some with 5" diameter heads after the buttoned heads were removed. Packman and Southern Comet also produced excellent side cuts.

Fall crop. The average yield of all cultivars at Mt. Carmel was 5,864 lb/A compared to 10,016 lb/A at Windsor, a difference of 71%. Compared to spring yields, the fall yields were 36% higher at Windsor but 8% lower at Mt. Carmel. The unusually low yields at Mt. Carmel in the fall were probably caused by damaging winds and rain soon after planting. Parts of the field were eroded and many plants were uprooted or their upper root systems were

TABLE 4--YIELD AND QUALITY OF BROCCOLI IN THREE SUCCESSIVE FALL PLANTINGS AT MT. CARMEL AND WINDSOR

|                    | Mt. Carmel          |                    |                      | Windsor             |                    |                      | Size and quality of heads           |
|--------------------|---------------------|--------------------|----------------------|---------------------|--------------------|----------------------|-------------------------------------|
|                    | Heads<br>Hvst.<br>% | Ave.<br>Head<br>lb | First<br>Cut<br>lb/A | Heads<br>Hvst.<br>% | Ave.<br>Head<br>lb | First<br>Cut<br>lb/A |                                     |
| <u>First Crop</u>  |                     |                    |                      |                     |                    |                      |                                     |
| Dandy Early+       | 93                  | 0.6                | 6284                 | 100                 | 1.2                | 11347                | med to lg, compact, uniform         |
| Emperor+           | 93                  | 0.6                | 5697                 | 100                 | 0.9                | 9142                 | lg, compact, uniform                |
| Green Valiant+     | 97                  | 0.6                | 5669                 | 100                 | 0.8                | 7693                 | med to lg, compact, uniform         |
| Packman+           | 100                 | 0.6                | 6156                 | 93                  | 1.0                | 10162                | med to lg, compact, uniform         |
| XPH 5004+          | 93                  | 0.5                | 5180                 | 97                  | 1.0                | 9501                 | med to lg, compact, uniform         |
| <u>Second Crop</u> |                     |                    |                      |                     |                    |                      |                                     |
| Dandy Early        | 67                  | 0.6                | 6062                 | 87                  | 0.7                | 6489                 | sm to med, compact, leafy, variable |
| Emperor+           | 90                  | 0.7                | 6703                 | 97                  | 0.7                | 6594                 | med to lg, compact, uniform         |
| Green Valiant+     | 93                  | 0.9                | 8305                 | 100                 | 0.9                | 8426                 | lg, compact, uniform                |
| Packman+           | 97                  | 0.8                | 7411                 | 100                 | 0.7                | 6355                 | med to lg, compact, uniform         |
| XPH 5004+          | 97                  | 0.6                | 6154                 | 100                 | 0.7                | 6379                 | med to lg, compact, uniform         |
| <u>Third Crop</u>  |                     |                    |                      |                     |                    |                      |                                     |
| Dandy Early        | 67                  | 0.3                | 2966                 | 90                  | 0.2                | 2145                 | sm, leafy                           |
| Emperor            | 83                  | 0.4                | 4318                 | 97                  | 0.4                | 4110                 | sm to med, compact, variable        |
| Green Valiant+     | 77                  | 0.8                | 8147                 | 90                  | 0.4                | 3874                 | med to lg, compact, uniform         |
| Packman            | 80                  | 0.5                | 4721                 | 100                 | 0.4                | 4058                 | med, compact, leafy                 |
| XPH 5004           | 90                  | 0.3                | 3220                 | 100                 | 0.2                | 2395                 | sm to med, compact, leafy           |

+ Cultivars produced high quality heads at both Mt. Carmel and Windsor.

exposed. Although uprooted plants were replaced and exposed roots buried, plants were stunted during the early stages of their growth. The same storm did not damage the crop at Windsor.

At Windsor, all but four cultivars yielded above the national average. Here, Mercedes, Prominence, and Green Duke yielded from 11, 8, and 7 tons/A respectively. Although these cultivars produced very large 10-12" heads, their quality was poor. The heads of Mercedes exceeded 2 lb, but rampant growth produced loosely branched, lumpy, unattractive heads. Heads of Green Duke were large and compact but brown beading spoiled their appearance. Prominence had very large to large well-exerted heads, but their stems were tough with corky exteriors and discolored interiors.

At Mt. Carmel only Mercedes and

Prominence exceeded the national average of 4 tons/A. Despite low average yields, the quality and yields of several cultivars were excellent. Packman and Galaxy had the best quality coupled with high yields. Dandy Early and XPH 5004 also had high quality and were consistent with results in 1985 (Hill 1986). The yields and quality of Emperor, Green Valiant, Paragon, Southern Comet and PSR 21284, PSR 21584, and PSR 35184 were consistently excellent.

The yields of side cuts were not measured for the fall crop. However, Galaxy, Packman, Baccus, and XPH 5004 produced many.

Serial plantings fall crop. The varieties selected for serial planting were those suggested for the 1986 Broccoli Project. The yield and quality of the second and third crops of Dandy Early, Emperor, Green Valiant, Packman, and XPH 5004 are reported in Table 4. All

TABLE 5--MATURITY OF BROCCOLI AT MT. CARMEL AND WINDSOR, SPRING AND FALL 1986

| Cultivar       | Mt. Carmel       |            |               |             | Windsor          |            |               |             |
|----------------|------------------|------------|---------------|-------------|------------------|------------|---------------|-------------|
|                | Harvest Midpoint |            | Harvest Span  |             | Harvest Midpoint |            | Harvest Span  |             |
|                | Spring Days*     | Fall Days* | Spring Days** | Fall Days** | Spring Days*     | Fall Days* | Spring Days** | Fall Days** |
| Baccus***      | 46               | 56         | 15            | 3           | 50               | 48         | 17            | 6           |
| Dandy Early    | 46               | 63         | 15            | 3           | 53               | 58         | 12            | 14          |
| Early Emerald  | 42               | 60         | 11            | 14          | 46               | 51         | 14            | 11          |
| Emperor        | 58               | 67         | 6             | 11          | 56               | 62         | 13            | 11          |
| Excalibur      | 47               | 67         | 16            | 11          | 51               | 62         | 17            | 15          |
| Galaxy         | 46               | 63         | 24            | 10          | 50               | 58         | 14            | 14          |
| Green Duke     | 57               | 63         | 23            | 11          | 53               | 62         | 27            | 14          |
| Green Dwarf    | 50               | 71         | 23            | 6           | 53               | 65         | 16            | 11          |
| Green Comet    | 51               | 66         | 27            | 15          | 53               | 58         | 14            | 14          |
| Green Valiant  | 60               | 71         | 4             | 6           | 60               | 69         | 14            | 8           |
| Mercedes       | 48               | 67         | 30            | 8           | 53               | 65         | 16            | 14          |
| Orion          | 42               | 71         | 35            | 7           | 50               | 69         | 26            | 8           |
| Packman        | 48               | 63         | 27            | 15          | 50               | 55         | 11            | 14          |
| Paragon        | 48               | 66         | 24            | 11          | 46               | 55         | 17            | 7           |
| Pirate         | 57               | 77         | 24            | 7           | 53               | 72         | 10            | 21          |
| Premium Crop   | 62               | 67         | 20            | 4           | 56               | 62         | 27            | 1           |
| Prominence     | 60               | 66         | 16            | 7           | 53               | 62         | 13            | 7           |
| Southern Comet | 48               | 70         | 23            | 11          | 46               | 62         | 17            | 7           |
| PSR 3481       | 39               | 74         | 15            | 4           | 42               | 69         | 5             | 8           |
| PSR 20684      | 35               | 67         | 18            | 10          | 44               | 65         | 14            | 7           |
| PSR 20784      | 59               | 71         | 23            | 21          | 53               | 69         | 21            | 14          |
| PSR 21284      | 35               | 67         | 15            | 14          | 42               | 62         | 14            | 3           |
| PSR 21584      | 39               | 71         | 24            | 7           | 44               | 62         | 17            | 3           |
| PSR 35184      | 50               | 74         | 35            | 7           | 42               | 65         | 11            | 8           |
| PSX 21784      | 35               | 74         | 18            | 17          | 53               | 65         | 31            | 11          |
| XPH 5004       | 50               | 63         | 7             | 11          | 53               | 55         | 7             | 10          |
| Average        | 48               | 68         | 20            | 10          | 50               | 62         | 16            | 9           |

\*Time from transplanting to midpoint of harvest.

\*\*Time from start to finish of harvest of primary heads.

\*\*\*Formerly XPH 5003.

varieties grown in the first crop at both sites had shown consistently good quality with medium to large densely compacted heads. In the second crop, Green Valiant had the greatest yield at Mt. Carmel and Windsor and its quality

remained high. At Mt. Carmel, yields of Emperor, Packman, and XPH 5004 exceeded the first crop. At Windsor, the second crop of Green Valiant increased to over 4 tons/A, but all other cultivars had lower yields. The quality

of all cultivars remained high except Dandy Early, which produced leafy heads.

In the third crop, yields of most cultivars at both sites were dramatically less. At Mt. Carmel, however, the yields of Green Valiant remained above 4 tons/A, and high quality was maintained. At Windsor, yields of Green Valiant were lower, but quality was excellent. All other cultivars produced small to medium heads that were leafy or of inconsistent size.

**Maturity.** Knowing the time to produce a mature plant from seed or transplant allows the grower to schedule planting for harvest at a specific time. In Table 5, the days to maturity were calculated from the day of transplanting to the day when half the heads were harvested; i.e. the harvest date of the 15th head from a population of 30 plants.

For the spring crop, time to maturity among the 26 cultivars varied from 35 to 62 days at Mt. Carmel and 42 to 60 days at Windsor. The very early maturity of PSR 3481, PSR 20684, PSR 21584, and PSR 21784 at Mt. Carmel caused smaller heads and lower yields than their longer maturity at Windsor. For all cultivars, the average time to maturity at each site differed by only 2 days.

For the fall crop, time to maturity at Mt. Carmel ranged from 56 to 74 days and at Windsor, 48 to 72 days. The average time to maturity for all cultivars was 68 days at Mt. Carmel and 62 days at Windsor. Maturity at Mt. Carmel was undoubtedly delayed by the recovery period following the storm that eroded the field and disturbed roots.

Another important facet of maturity is the span of harvest, which I define as the days between the harvest of the first and last marketable head. Short harvest spans favor a single harvest by hand or machine. In the spring, only XPH 5004 had a short harvest span at both sites. Emperor and Green Valiant had short harvest spans only at Mt. Carmel. In the fall, many cultivars matured during a short span. The average of all cultivars was about 10 days at both sites. As the days to maturity increased in the fall compared to the spring, the harvest span decreased. Obviously, conditions that speed maturity in the spring do not affect all plants of the same cultivar equally. This is especially noticeable in early maturing cultivars

that tend to button during cold springs. Some individuals become vernalized in the seedling stage, others do not.

#### YIELD AND QUALITY OF CAULIFLOWER

**Spring crop.** The average yield in spring of all cauliflower cultivars at Windsor was 13,589 lb/A compared to 11,587 lb/A at Mt. Carmel, a difference of 17%. Andes and Polar Express yielded most at both sites with 8.5 to 11.0 tons/A (Table 6). In fact, seven of 10 cultivars at both sites yielded above the national average of 5.4 tons/A (Anon. 1985).

Among the seven cultivars that had high yields, five had consistently good quality. Andes and Polar Express produced large smooth curds, weighing nearly 2 lb. Curds of Snow Crown, White Empress, and White Knight were more variable in size, but their quality was consistently good.

**Fall crop.** The average yield of all cultivars was 15,224 lb/A at Windsor compared to 12,631 lb/A at Mt. Carmel, a difference of 20%. The yields of Andes, Polar Express, Snow Crown, White Knight and PSX 27885 were 8 to 9.5 tons/A at Windsor and 6 to 7.5 tons/A at Mt. Carmel. Virtually all cultivars exceeded the national average of 5.4 tons/A. Snow Crown and PSX 27885, however, suffered some browning of curds that made them less desirable. Andes, Polar Express, White Knight and PSR 100184 had consistently good quality as well as high yields. A notable characteristic of PSR 100184 was its resistance to hollow stem. The remaining cultivars grown in the fall had inconsistent quality or suffered defects of browning or ricey curd. Most cultivars grown in the spring and fall had hollow stem, which is associated with boron deficiency.

**Maturity.** Maturity of cauliflower is important to schedule planting for a specific harvest period. The days to maturity were calculated from the day of transplanting to the day when half the curds were harvested (Table 7). Among the 10 cultivars planted in spring, time to maturity was consistent at both sites and ranged from 40 to 68 days at Mt. Carmel and 38 to 66 days at Windsor.

In the fall, time to maturity of these same 10 cultivars was longer. The array of

TABLE 6--YIELD AND QUALITY OF CAULIFLOWER AT MT. CARMEL AND WINDSOR, SPRING AND FALL, 1986

|                    | Mt. Carmel |      |       | Windsor |      |       | Size and quality of curd             |
|--------------------|------------|------|-------|---------|------|-------|--------------------------------------|
|                    | Curds      | Ave. | Total | Curds   | Ave. | Total |                                      |
|                    | Hvst.      | Curd | Yield | Hvst.   | Curd | Yield |                                      |
|                    | %          | lb   | lb/A  | %       | lb   | lb/A  |                                      |
| <u>Spring Crop</u> |            |      |       |         |      |       |                                      |
| Alert              | 90         | 0.7  | 6859  | 93      | 1.0  | 9486  | sm to med, smooth                    |
| Andes*+            | 97         | 1.9  | 18385 | 100     | 2.3  | 21925 | lg smooth, uniform                   |
| Dominant           | 90         | 1.2  | 11547 | 90      | 1.6  | 15536 | sm to med, extensive browning        |
| Early Abundance    | 83         | 0.6  | 5656  | 70      | 0.6  | 6096  | sm to med, smooth, uniform           |
| Polar Express+     | 100        | 1.8  | 17438 | 100     | 1.8  | 17844 | lg, smooth, uniform                  |
| Snowball           | 97         | 1.5  | 14577 | 100     | 1.7  | 16573 | sm to med, leafy                     |
| Snowball T3        | 80         | 0.5  | 5137  | 87      | 0.8  | 7249  | sm to med, browning                  |
| Snow Crown+        | 100        | 1.2  | 11218 | 97      | 1.3  | 12865 | med to lg, uniform                   |
| White Empress*+    | 97         | 1.2  | 11292 | 100     | 1.4  | 13329 | med to lg, uniform                   |
| White Knight*+     | 97         | 1.4  | 13761 | 97      | 1.6  | 14988 | med to lg, smooth, uniform           |
| <u>Fall Crop</u>   |            |      |       |         |      |       |                                      |
| Alert              | 83         | 1.2  | 11674 | 90      | 1.8  | 17137 | med to lg, smooth, browning          |
| Andes*+            | 80         | 1.2  | 12107 | 97      | 1.7  | 16310 | med to lg, smooth, uniform           |
| Dominant           | 80         | 1.1  | 10460 | 90      | 1.3  | 12404 | sm to med, rough, extensive browning |
| Early Abundance    | 90         | 1.2  | 11128 | 73      | 1.6  | 15340 | med, rough, variable                 |
| Polar Express+     | 83         | 1.4  | 13318 | 83      | 1.6  | 15943 | med, smooth, uniform                 |
| Snowball           | 77         | 1.3  | 12240 | 73      | 1.5  | 14814 | med, smooth, browning                |
| Snowball T3        | 90         | 1.3  | 12392 | 90      | 1.2  | 11950 | med, smooth, browning                |
| Snowball Improved* | 80         | 1.4  | 13155 | 87      | 1.4  | 13356 | med, slightly hairy                  |
| Snow Crown         | 87         | 1.4  | 13795 | 100     | 1.9  | 18718 | med to lg, rough to smooth, browning |
| Snow King*         | 83         | 1.6  | 15877 | 100     | 1.6  | 15978 | med to lg, smooth, hollow stem rot   |
| Snow Pak*          | 90         | 1.3  | 12959 | 90      | 1.5  | 14608 | med to sm, rough to smooth, variable |
| White Empress*     | 93         | 1.1  | 10481 | 93      | 1.6  | 15173 | med, hairy, browning                 |
| White Knight*+     | 83         | 1.4  | 13607 | 93      | 1.7  | 16827 | med to lg, smooth, uniform           |
| PSR 100184*+       | 87         | 1.5  | 14551 | 97      | 1.4  | 13899 | med, smooth, resists hollow stem     |
| PSR 27785Y*        | 83         | 1.0  | 9155  | 87      | 1.2  | 11934 | med, smooth, hairy, variable         |
| PSX 27885*         | 77         | 1.5  | 15200 | 100     | 2.0  | 19188 | med, rough, stem hollow, browning    |

\*Self blanching.

+Cultivars produced high quality heads at both Mt. Carmel and Windsor.

maturities also became broader because of additional cultivars in the fall crop. The range in harvest midpoint at Mt. Carmel was 56 to 111 days and for Windsor, 49 to 103 days. In the fall, cauliflower took an average of 17 days longer to mature at Windsor and 24 days longer at Mt. Carmel than in the spring. The extra week at Mt. Carmel was undoubtedly caused by the storm that delayed maturity of broccoli.

The shorter time to maturity in spring was undoubtedly caused by longer days and higher temperatures as the crop matured compared to shorter days and lower temperatures in the fall.

In the spring, the average harvest span of all cultivars was 23 days at Mt. Carmel and 18 days at Windsor. In the fall, the harvest span decreased to 16 days at Mt. Carmel and 13 days at Windsor. As with broccoli, the harvest

TABLE 7--MATURITY OF CAULIFLOWER AT MT. CARMEL AND WINDSOR, SPRING AND FALL 1986

| Cultivar          | Mt. Carmel       |            |               |             | Windsor          |            |               |             |
|-------------------|------------------|------------|---------------|-------------|------------------|------------|---------------|-------------|
|                   | Harvest Midpoint |            | Harvest Span  |             | Harvest Midpoint |            | Harvest Span  |             |
|                   | Spring Days*     | Fall Days* | Spring Days** | Fall Days** | Spring Days*     | Fall Days* | Spring Days** | Fall Days** |
| Alert             | 48               | 72         | 28            | 5           | 52               | 72         | 18            | 7           |
| Andes             | 68               | 88         | 22            | 31          | 66               | 73         | 10            | 17          |
| Dominant          | 64               | 111        | 25            | 23          | 59               | 103        | 22            | 18          |
| Early Abundance   | 44               | 72         | 27            | 9           | 38               | 72         | 14            | 6           |
| Polar Express     | 60               | 77         | 14            | 12          | 59               | 74         | 13            | 10          |
| Snowball          | 60               | 92         | 30            | 27          | 56               | 94         | 17            | 39          |
| Snowball T3       | 40               | 72         | 20            | 17          | 52               | 72         | 30            | 18          |
| Snowball Improved | -                | 106        | -             | 20          | -                | 90         | -             | 29          |
| Snow Crown        | 54               | 72         | 16            | 14          | 56               | 68         | 24            | 8           |
| Snow King         | -                | 60         | -             | 11          | -                | 54         | -             | 7           |
| Snow Pak          | -                | 106        | -             | 15          | -                | 98         | -             | 21          |
| White Empress     | 67               | 77         | 26            | 12          | 56               | 72         | 17            | 6           |
| White Knight      | 57               | 77         | 24            | 9           | 56               | 72         | 17            | 3           |
| PSR 100184        | -                | 97         | -             | 20          | -                | 94         | -             | 18          |
| PSR 27785Y        | -                | 56         | -             | 14          | -                | 49         | -             | 28          |
| PSX 27885         | -                | 67         | -             | 9           | -                | 64         | -             | 15          |
| Average           | 56               | 81         | 23            | 16          | 55               | 72         | 18            | 13          |

\* Time from transplanting to midpoint of harvest.

\*\* Time from start to finish of harvest.

span decreases as time to maturity increases.

#### PLANTING STRATEGIES

The 1986 trials demonstrate that broccoli and cauliflower of commercial quality can be produced in Connecticut during June. A fall crop of broccoli of commercial quality can be harvested from early September through mid-November and cauliflower from mid-September through mid-November except in the normally colder areas of Litchfield and Windham Counties where killing frosts occur late in October. The fall harvest is terminated by a killing frost with temperatures in the low 20s. Night temperatures between 25 to 32 F have little detrimental effect on quality. Although maturity

may be slowed, the taste of broccoli may improve after mild frosts.

Broccoli. The spring harvest was shorter than the fall harvest because of the onset of hot weather in July. Harvest in June was produced from a single transplanting from April 21 to 28. Several cultivars with varying maturity provided a protracted harvest in June with a single planting. The dates for harvest of preferred cultivars at Mt. Carmel (MCMC) and Windsor (WWW) are shown in Figure 1.

Selection of three cultivars with different maturities including Galaxy as the early and Premium Crop as the late would provide well-balanced harvests during June. The data also suggest that a second planting in the

|                | Jun<br>1       | Jun<br>10       | Jun<br>20       | Jun<br>30 |
|----------------|----------------|-----------------|-----------------|-----------|
| Galaxy         |                | MCMCMCMCMCMCMCM |                 |           |
|                | WWWWWWWWWW     |                 |                 |           |
| Packman        |                | MCMCMCMCM       |                 |           |
|                | WWWWW          |                 |                 |           |
| Southern Comet |                | MCMCMCMCMCMCM   |                 |           |
|                | WWWWWWW        |                 |                 |           |
| XPH 5004       |                | MCMCMCM         |                 |           |
|                | WWWWW          |                 |                 |           |
| Green Comet    |                |                 | MCMCMCMCM       |           |
|                |                | WWWWWWW         |                 |           |
| Premium Crop   |                |                 | MCMCMCMCMCMCMCM |           |
|                | WWWWWWWWWWWWWW |                 |                 |           |

Connecticut Valley of Galaxy, Packman, and XPH 5004 to fill out harvests in the last half of June. The second crop would be planted no later than May 1.

Packman planted in mid-April has a tendency to button in upland areas of central Connecticut where spring temperatures are cooler. Delaying planting until May 1 would reduce buttoning. In the normally cooler areas of Litchfield and Windham Counties, spring plantings after May 1 would reduce losses from buttoning, especially in early maturing cultivars.

The fall crop has a longer harvest period and permits more options for selection of cultivars and number of plantings. I tested three successive plantings of Dandy Early, Emperor, Green Valiant, Packman, and XPH 5004 that were suggested for the 1986 Broccoli Project. The harvest dates for the cultivars that produced consistently high quality heads in each crop are shown in Figure 2.

Fig. 1—The harvest dates for high quality broccoli in the spring at Mt. Carmel (MCMC) and Windsor (WWW)

|               | Sep<br>10 | Sep<br>20    | Sep<br>30 | Oct<br>10     | Oct<br>20 | Oct<br>30 | Nov<br>10 | Nov<br>20 |
|---------------|-----------|--------------|-----------|---------------|-----------|-----------|-----------|-----------|
| Dandy Early   |           |              | MCMCMCMCM |               |           |           |           |           |
|               |           | WWWWWWWWWW   |           |               |           |           |           |           |
| Emperor       |           |              | MCMCMCMCM |               |           |           |           |           |
|               |           | WWWWWWWW     |           |               |           |           |           |           |
|               |           |              |           | MCMCMCMCMCMCM |           |           |           |           |
|               |           |              |           | WWW           |           |           |           |           |
| Green Valiant |           |              |           | MCMCM         |           |           |           |           |
|               |           |              | WWWWW     |               |           |           |           |           |
|               |           |              |           |               | MCMC      |           |           |           |
|               |           |              |           |               | WWW       |           |           |           |
|               |           |              |           |               |           |           | MCMCMCM   |           |
|               |           |              |           |               |           |           | WWWWW     |           |
| Packman       |           |              |           | MCMCM         |           |           |           |           |
|               |           | WWWWWWWWWWWW |           |               |           |           |           |           |
|               |           |              |           | MCMC          |           |           |           |           |
|               |           |              |           | WWW           |           |           |           |           |
| XPH 5004      |           |              |           | MCMCMCMCMCM   |           |           |           |           |
|               |           | WWWWWWWW     |           |               |           |           |           |           |
|               |           |              |           |               | MCMCMCM   |           |           |           |
|               |           |              |           | WWW           |           |           |           |           |

Fig. 2—The harvest dates in fall for high quality broccoli in three crops at Mt. Carmel (MCMC) and Windsor (WWW)

Harvest of the first planting at Mt. Carmel (July 22 to 26) began September 19 with Packman (early) and concluded October 10 with Green Valiant (late). These two cultivars did not provide continuous harvest. The gap from September 26 to October 4 could have been filled with any of the other preferred cultivars. Thus, using three cultivars of differing maturities would provide continuous harvest from September 19 through October 10.

At Windsor, harvest of the first planting (July 22 to 26) began with Packman on September 11 and concluded with Green Valiant on October 3. Here, these two cultivars provided continuous production.

Harvest of the second planting (August 7 to 8) began on September 29 to 30 with Packman and concluded October 23 with Green Valiant. Thus, the second crop of Packman began before the first crop of Green Valiant concluded and partially filled the gap between September 26 and October 4 in the first crop of Packman and Green Valiant. Thus, a third cultivar in the first crop could be effectively replaced by a second crop of an early cultivar, i.e. Packman.

The second crop of Packman and Green Valiant did not provide continuous harvest from September 30 to October 23. Harvest gaps occurred from October 7 to 17 at Mt. Carmel and October 3 to 20 at Windsor. Emperor and XPH 5004 filled the gap at Mt. Carmel and Emperor at Windsor. Dandy Early, planted in early August, fell from the list of preferred

cultivars because of its small leafy heads.

In the third crop, Green Valiant alone remained on the preferred list. Its planting August 19 provided a late harvest from November 5 to 14. Although the yield at Windsor was somewhat low, its quality was superb. The other preferred cultivars produced leafy heads of inconsistent size in the third crop. Third plantings seem impractical for the colder areas of Litchfield and Windham Counties because of earlier damaging frosts.

A gap remained from October 23 to November 5. With an overlap in harvest between the first and second crop, but not between the second and third, planting of the second crop of Valiant might be delayed to about August 10 to 15. How Emperor, Packman and XPH 5004 would react is unknown since their quality declined between the second planting (August 5) and the third (August 19).

In summary, satisfactory yields of broccoli can be attained in spring and fall with two or three cultivars with different maturities. In the fall, two or three plantings, each utilizing two or three cultivars, provide the longest harvest.

Cauliflower. The spring harvest of cauliflower, like broccoli, was shorter than the fall (Table 7). Production in June was accomplished with transplants set between April 21 to 28. Planting cultivars with varying maturity provided harvest from mid-June to mid-July. The inclusive dates for the harvest of preferred cultivars are shown in Figure 3.

At Mt. Carmel, a combination of Polar Express and Andes provided the broadest harvest span, from June 11 to July 16. At Windsor, these two cultivars again provided the broadest harvest span, from June 13 to July 3.

The harvest span was shorter at Windsor than at Mt. Carmel. It is unknown if a second planting at Windsor about May 1 could have extended the harvest to mid-July. Other cultivars began to show defects in early July.

The earliest harvest in the spring trial was from Early Abundance. Harvest began on June 6 at Mt. Carmel and June 2 at Windsor. The curds were small to medium but free of defects. Although yield per acre was relatively small, this cultivar could provide early maturing curds for the fresh market. Delay in planting of

|               | Jun<br>10           | Jun<br>20 | Jun<br>30 | Jul<br>10 |
|---------------|---------------------|-----------|-----------|-----------|
| Polar Express | MCMCMCMCMCMCMCMCMCM | WWWWWWWWW |           |           |
| White Knight  | MCMCMCMCMCMCMCMCMCM | WWWWWWWWW |           |           |
| Snow Crown    | MCMCMCMCMCM         | WWWWWWWWW |           |           |
| White Empress | MCMCMCMCMCMCMCMCM   | WWWWWWWWW |           |           |
| Andes         | MCMCMCMCMCMCMCMCM   | WWWWW     |           |           |

Fig. 3--Harvest dates for high quality cauliflower in the spring at Mt. Carmel (MCMC) and Windsor (WWW)



|               | Sep<br>20 | Sep<br>30   | Oct<br>10       | Oct<br>20 | Oct<br>30 |
|---------------|-----------|-------------|-----------------|-----------|-----------|
| Polar Express |           |             | MCMCMCMC        |           |           |
|               |           | WWWWWWWWWWW |                 |           |           |
| White Knight  |           |             | MCMCMCM         |           |           |
|               |           | WWW         |                 |           |           |
| Andes         |           |             | MCMCMCMCMCMCMCM |           |           |
|               |           | WWWWWWWWWWW |                 |           |           |
| PSR 100184    |           |             |                 | MCMCMCMCM |           |
|               |           |             |                 | WWWWW     |           |

Fig. 4--Harvest dates for high quality cauliflower in the fall at Mt. Carmel (MCMC) and Windsor (WWW)

Early Abundance to May 1 would probably produce larger heads, but its advantage of earliness would be lost.

Delay in planting of cauliflower until May 1 in the cooler areas of Litchfield and Windham Counties would reduce buttoning.

Fall cauliflower has about the same harvest span as in spring, but the time to maturity is longer. The inclusive dates for the harvest for preferred cultivars are shown in Figure 4.

A combination of Polar Express or White Knight and Andes or PSR 100184 provided the longest harvest at Mt. Carmel. At Windsor, Polar Express and PSR 100184 provided the longest harvest. Few gaps would appear in

harvest if combinations of these cultivars were used. Although serial planting of these cultivars to expand the harvest remains untested, a second planting of White Knight and Polar Express about August 5 to 10 may provide harvest in late October or early November in the Connecticut Valley where killing frosts occur later than in Litchfield and Windham Counties.

In summary, satisfactory yields of cauliflower can be attained in spring and fall utilizing two or three cultivars with different maturities to attain the broadest harvest period.

REFERENCES

Anon. 1971. Nutritive value of foods. Home and Garden Bulletin No. 72. USDA.

Anon. 1985. Agricultural Statistics 1985. USDA. 551p.

Hill, D.E. 1986. Broccoli Trials--1985. The Conn. Agr. Expt. Sta., New Haven Bull. 830. 7p.

ACKNOWLEDGMENT

I thank Abigail A. Maynard for her faithful and capable assistance in the field, in evaluation of cultivars, and in compilation of data.



## The Connecticut Agricultural Experiment Station,

founded in 1875, is the first experiment station in America. It is chartered by the General Assembly to make scientific inquiries and experiments regarding plants and their pests, insects, soil and water, and to perform analyses for State agencies. The laboratories of the Station are in New Haven and Windsor; its Lockwood Farm is in Hamden. Single copies of bulletins are available free upon request to Publications; Box 1106; New Haven, Connecticut 06504.

ISSN 0097-0905



University of  
Connecticut  
Libraries

---



39153028932129

