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# PICKLING CUCUMBER CULTIVAR EVALUATION TRIALS

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The pickling cucumber cultivar evaluation trials were conducted at the OARDC Vegetable Crops Branch near Fremont. Seventeen cultivars or lines were evaluated in the replicated trial and 7 lines were evaluated in the non-replicated observational trial.

## Cultural Information

The soil is classed as a sandy loam. A broadcast application of 10-20-20 at 1000 lb/A was made and incorporated prior to planting. The plants were seeded on June 11 using a Stan-Hay seeder which seeds 4 to 5 seed per ft. of row. Plants were thinned to 3 single plants per foot of row on July 3. Rows were 30 ft. long on 30-in. centers. Cultivars were replicated 4 times in the replicated trial. Vegiben 2E at 2 lb/A was applied broadcast immediately after planting. One active hive of honey bees was placed in the plot area when the plants started to bloom. All other cultural practices during the growing season were according to standard recommendations. Weed control was excellent and no serious problems with insects or diseases developed during the season.

The plots were harvested by hand and the cucumbers were graded and sized using a commercial sizer. Fruits were classed into the following sizes and values placed on each size according to the following values:

| Size | $ Ton* | |
|---|---|---|
| | PCIC | Ohio |
| 1. Less than 1 1/6 in. | 120 | 240 |
| 2. 1 1/6 to 1 1/2 in. | 60 | 120 |
| 3. 1 1/2 to 2 in. | 40 | 60 |
| 4. 2 to 2 1/4 in. | 20 | 10 |

* PCIC values established by the Pickling Cucumber Improvement Committee of Pickle Packers International. Ohio values based upon estimated average prices in 1973-77 period.

Time and labor limitations prevented harvesting each cultivar or line when it had reached optimum maturity for maximum returns (a few over-sized fruits in each plot). Therefore, the first harvest was made when a few over-sized fruits were present in the total plot area. This undoubtedly influenced the first harvest yields and values, but it was felt that data from subsequent harvests would compensate for the lack of correct timing of the first harvest. Harvest started on July 30 and continued through August 13.

Growing conditions were generally good throughout the season. Rainfall from planting on June 11 to the end of June was 2.54 in.; July rainfall was 3.86 in.; rainfall to August 13 was 1.59 in.

Duplicate samples of fruit from size 3 of the first harvest were placed in a commercial brine tank with the cooperation of the H.J. Heinz Co., Fremont, Ohio. The samples were removed on November 1 and evaluated for percent recovery and firmness, as measured with a Magness-Taylor Pressure Tester fitted with a 5/16 in. tip. Recovery was based upon an estimate of the area of the fruit devoid of gas pockets or other separations and would give high quality slices when sliced.

The author wishes to express appreciation to the seed companies and others who provided the seed for the trials. These included Joseph Harris Co., Inc., Rochester, NY; Northrup, King and Co., Minneapolis, MN; Asgrow Seed Co., Kalamazoo, MI; Ferry-Morse Seed Co., Mountain View, CA; Niagara Div. FMC Crop., El Macero, CA; Petoseed Co., Inc., Saticoy, CA; Department of Horticulture, Michigan State University, East Lansing, MI; Keystone Seed Co., Holister, CA; Agr. Canada, Harrow, Ontario; Dessert Seed Co., Brooks, OR.

TABLE 1.--First Harvest Yield from Replicated Trial of Pickling Cucumber Cultivars - 1979.

| Cultivar | Source | Lot No. | Size = | Tons/A 1 | 2 | 3 | 4 | Total | Culls |
|---|---|---|---|---|---|---|---|---|---|
| NCX-5011 | Niagara | 1284 | | .19 | .60 | 1.41 | .50 | 2.70 | .32 |
| Lucky Strike | Peto Seed | 3591000 | | .31 | 1.10 | 2.82 | .99 | 5.22 | .57 |
| Peto Triplemech | Peto Seed | 106-1000 | | .32 | 1.35 | 3.16 | .78 | 5.61 | .62 |
| Multipik | Peto Seed | 3761002 | | .23 | .99 | 3.17 | .20 | 4.59 | .69 |
| Harrow 77.01 | Agr.Canada | ---- | | .60 | 1.30 | 2.25 | .23 | 4.38 | .41 |
| MSU 79 | M.S.U. | 7036-41 | | .22 | .97 | 3.02 | .32 | 4.53 | .79 |
| Spiffy | Keystone | ---- | | .42 | 1.22 | 2.90 | .99 | 5.53 | .41 |
| NCX-5014 | Niagara | 762 | | .23 | 1.27 | 4.30 | .74 | 6.54 | .64 |
| C589 | Harris | PW48 | | .41 | 1.41 | 2.46 | .54 | 4.82 | .27 |
| FX-4153 | Ferry-Morse | 7822405 | | .38 | 1.19 | 2.85 | .20 | 4.62 | .32 |
| EXP-824 | Northrup King | 38031-76800 | | .36 | 1.47 | 3.03 | .51 | 5.37 | .51 |
| Pioneer | Northrup King | 37559-75700 | | .48 | 1.35 | 3.40 | .51 | 5.74 | .53 |
| XPH-1225 | Asgrow | VGL-8048 | | .35 | 1.25 | 2.46 | .00 | 4.06 | .21 |
| XPH-1191 | Asgrow | VGL-8049 | | .36 | 1.09 | 3.27 | 1.19 | 5.91 | .69 |
| Premier | Asgrow | 97547 | | .37 | 1.06 | 2.39 | .63 | 4.45 | .33 |
| Pioneer | Dessert | B6-20P | | .25 | .68 | 1.12 | .20 | 2.25 | .24 |
| Carolina | Ferry-Morse | 10920-13811 | | .23 | 1.06 | 2.03 | .61 | 3.93 | .77 |
| | | | LSD .05 = | .20 | .44 | .82 | .27 | 1.24 | .24 |

TABLE 2.--Yield from Replicated Trial of Pickling Cucumber Cultivars - 1979

| Cultivar | Yield at 7 Harvest Dates - Tons/A 7/30 | 8/1 | 8/3 | 8/6 | 8/8 | 8/10 | 8/13 | Total |
|---|---|---|---|---|---|---|---|---|
| NCX-5011 | 2.70 | .41 | .65 | 1.78 | 1.02 | .84 | .88 | 8.28 |
| Lucky Strike | 5.22 | .56 | 1.54 | 2.37 | 2.02 | 1.60 | 1.06 | 14.37 |
| Peto Triplemech | 5.61 | .38 | 1.90 | 2.87 | 1.65 | 1.62 | 1.51 | 15.54 |
| Multipik | 4.59 | .41 | 1.62 | 2.40 | 1.28 | 1.35 | 1.07 | 12.72 |
| Harrow 77.01 | 4.38 | .91 | 2.08 | 2.42 | 2.60 | 1.59 | 1.35 | 15.33 |
| MSU 79 | 4.53 | .59 | 1.31 | 2.43 | 1.22 | 1.28 | .90 | 12.26 |
| Spiffy | 5.53 | .37 | 1.66 | 2.40 | 1.53 | 1.17 | 1.29 | 13.95 |
| NCX-5014 | 6.54 | .37 | 1.74 | 2.42 | 1.95 | 1.36 | 1.16 | 15.54 |
| C 589 | 4.82 | .44 | 1.78 | 2.28 | 1.47 | 1.41 | .79 | 12.99 |
| FX-4153 | 4.62 | .73 | 1.53 | 2.77 | 1.42 | 1.50 | .97 | 13.54 |
| EXP-824 | 5.37 | .46 | 1.67 | 2.26 | 2.01 | 1.09 | 1.25 | 14.11 |
| Pioneer | 5.74 | .47 | 1.98 | 2.43 | 1.36 | 1.47 | .97 | 14.42 |
| XPH-1225 | 4.06 | .51 | 1.61 | 2.47 | 2.24 | 1.38 | 1.28 | 13.55 |
| XPH-1191 | 5.91 | .66 | 1.82 | 2.54 | 1.47 | 1.16 | 1.19 | 14.75 |
| Premier | 4.45 | .48 | 1.62 | 2.49 | 1.35 | 1.44 | 1.15 | 12.98 |
| Pioneer | 2.25 | .63 | 1.08 | 1.68 | 1.13 | .85 | .86 | 8.48 |
| Carolina | 3.93 | .36 | 1.52 | 2.59 | 1.62 | 1.40 | 1.00 | 12.24 |
| LSD .05 = | | | | 1.24 | | | | 3.27 |

TABLE 3.--Values of Harvested Cucumbers from Replicated Trial Based on PCIC Values - 1979

| | Value of 7 Harvest Dates - $/A | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cultivar | 7/30 | 8/1 | 8/3 | 8/6 | 8/8 | 8/10 | 8/13 | Total |
| NCX-5011 | 125 | 33 | 50 | 117 | 70 | 61 | 63 | 519 |
| Lucky Strike | 235 | 45 | 123 | 161 | 130 | 106 | 81 | 881 |
| Peto Triplemech | 260 | 31 | 144 | 205 | 107 | 115 | 103 | 965 |
| Multipik | 218 | 40 | 129 | 173 | 91 | 89 | 83 | 823 |
| Harrow 77.01 | 245 | 67 | 153 | 162 | 160 | 101 | 98 | 986 |
| MSU 79 | 212 | 37 | 97 | 155 | 86 | 91 | 69 | 747 |
| Spiffy | 259 | 30 | 119 | 154 | 102 | 84 | 80 | 828 |
| NCX-5014 | 291 | 30 | 139 | 172 | 118 | 88 | 79 | 917 |
| C589 | 242 | 38 | 138 | 157 | 100 | 99 | 61 | 835 |
| FX-4153 | 234 | 57 | 119 | 186 | 90 | 118 | 78 | 882 |
| EXP-824 | 263 | 36 | 127 | 163 | 129 | 85 | 91 | 894 |
| Pioneer | 285 | 37 | 135 | 167 | 87 | 89 | 67 | 867 |
| XPH-1225 | 216 | 36 | 126 | 155 | 144 | 97 | 96 | 870 |
| XPH-1191 | 263 | 49 | 147 | 178 | 111 | 87 | 89 | 924 |
| Premier | 216 | 38 | 129 | 161 | 95 | 105 | 81 | 825 |
| Pioneer | 119 | 51 | 80 | 122 | 71 | 65 | 59 | 567 |
| Carolina | 184 | 28 | 117 | 170 | 108 | 103 | 79 | 789 |
| LSD .05 = | | | | 6.0 | | | | 157 |

TABLE 4.--Values of Harvested Cucumbers from Replicated Trial Based on Estimated Ohio Values - 1979

| | Value of 7 Harvest Dates - $/A | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Cultivar | 7/30 | 8/1 | 8/3 | 8/6 | 8/8 | 8/10 | 8/13 | Total |
| NCX-5011 | 217 | 65 | 98 | 224 | 137 | 121 | 122 | 984 |
| Lucky Strike | 403 | 87 | 244 | 316 | 252 | 204 | 160 | 1666 |
| Peto Triplemech | 459 | 62 | 287 | 403 | 206 | 227 | 201 | 1845 |
| Multipik | 370 | 81 | 256 | 341 | 181 | 173 | 164 | 1566 |
| Harrow 77.01 | 458 | 132 | 303 | 315 | 307 | 194 | 194 | 1903 |
| MSU 79 | 381 | 68 | 194 | 301 | 167 | 180 | 135 | 1426 |
| Spiffy | 450 | 60 | 237 | 294 | 200 | 163 | 153 | 1047 |
| NCX-5014 | 509 | 58 | 279 | 338 | 226 | 169 | 155 | 1734 |
| C589 | 440 | 75 | 273 | 306 | 195 | 192 | 120 | 1601 |
| FX-4153 | 433 | 113 | 238 | 360 | 168 | 231 | 154 | 1697 |
| EXP-824 | 475 | 68 | 251 | 318 | 253 | 169 | 176 | 1710 |
| Pioneer | 516 | 74 | 269 | 324 | 168 | 170 | 131 | 1652 |
| XPH-1225 | 408 | 70 | 250 | 302 | 280 | 188 | 190 | 1688 |
| XPH-1191 | 446 | 94 | 293 | 352 | 220 | 171 | 176 | 1752 |
| Premier | 383 | 75 | 257 | 311 | 185 | 208 | 157 | 1576 |
| Pioneer | 220 | 98 | 160 | 238 | 138 | 130 | 116 | 1100 |
| Carolina | 323 | 54 | 232 | 330 | 211 | 203 | 156 | 1509 |
| LSD .05 = | | | | 11.0 | | | | 289 |

TABLE 5.--First Harvest Yield from Observation Trial of Pickling Cucumbers - 1979

| Line | Source | Lot No. | Total T/A Size = 1 | 2 | 3 | 4 | Total | Culls |
|---|---|---|---|---|---|---|---|---|
| NCX 5013 | Niagara | 1289 | .02 | .42 | 1.28 | 1.28 | 3.00 | .19 |
| XPH 1225 | Asgrow | VGL 8048 | .11 | 2.31 | 4.71 | ---- | 7.13 | .94 |
| PSX 12876 | Petoseed | ----- | .33 | 1.39 | 3.52 | .89 | 6.13 | .61 |
| PSX 3774 | Petoseed | 3801001 | .14 | 1.45 | 4.35 | 1.17 | 7.11 | .61 |
| 12AC2 | Harris | PW-1508 | .11 | .05 | ---- | ---- | .16 | .08 |
| MC89 | Harris | PW-7097 | .36 | 1.39 | 1.25 | .14 | 3.15 | .11 |
| Pickmaster | Northrup King | 37616-73800 | .17 | .45 | 1.03 | .78 | 2.43 | .11 |

TABLE 6.--Yield from Observation Trial of Pickling Cucumbers - 1979

| Line | Yield of 7 Harvest Dates Tons/A 7/30 | 8/1 | 8/3 | 8/6 | 8/8 | 8/10 | 8/13 | Total |
|---|---|---|---|---|---|---|---|---|
| NCX 5013 | 3.00 | .16 | .27 | 1.53 | .56 | .86 | .80 | 7.18 |
| XPH 1225 | 7.13 | .36 | .56 | 3.40 | 1.87 | 1.58 | 2.01 | 16.91 |
| PSX 12876 | 6.13 | .14 | 1.70 | 3.60 | .83 | 2.01 | 1.84 | 16.25 |
| PSX 3774 | 7.11 | .61 | 1.43 | 2.88 | 1.84 | 1.62 | 2.09 | 17.58 |
| 12AC2 | .16 | .16 | .58 | 1.59 | .89 | 1.08 | .78 | 5.24 |
| MC89 | 3.15 | .25 | 2.26 | 1.64 | .81 | 1.55 | .87 | 10.53 |
| Pickmaster | 2.43 | .22 | .75 | 1.51 | 1.09 | .58 | 1.00 | 7.58 |

TABLE 7.-- Value of Harvested Cucumbers from Observation Trial Based on PCIC Values - 1979

| Line | Value of 7 Harvest Dates - $/A 7/30 | 8/1 | 8/3 | 8/6 | 8/8 | 8/10 | 8/13 | Total |
|---|---|---|---|---|---|---|---|---|
| NCX 5013 | 104 | 14 | 19 | 95 | 42 | 71 | 52 | 397 |
| XPH 1225 | 340 | 38 | 67 | 265 | 132 | 113 | 137 | 1092 |
| PSX 12876 | 282 | 15 | 153 | 192 | 70 | 132 | 120 | 964 |
| PSX 3774 | 301 | 39 | 121 | 187 | 114 | 110 | 148 | 1020 |
| 12AC2 | 17 | 14 | 58 | 109 | 73 | 88 | 72 | 431 |
| MC89 | 179 | 20 | 198 | 91 | 62 | 111 | 76 | 737 |
| Pickmaster | 113 | 18 | 67 | 100 | 78 | 48 | 82 | 506 |

TABLE 8.--Additional Observations on Plant Type and Fruit Characteristics*

| | Plant | | | | Fruit | | | |
|---|---|---|---|---|---|---|---|---|
| Cultivar | Vigor | PF | Gen. Appear. | Pot. Yield | L/D | Color | Gen. Appear. | Spine Color |
| NCX-5001 | 4.0 | 1.0 | 4.0 | 3.0 | 4.0 | 4.0 | 4.0 | WS |
| Lucky Strike | 4.0 | 3.5 | 4.0 | 4.5 | 3.0 | 4.0 | 4.0 | WS |
| Peto Triplemech | 4.0 | 4.5 | 4.0 | 4.8 | 2.0 | 4.0 | 2.0 | WS |
| Multipik | 4.0 | 4.5 | 4.0 | 4.8 | 3.0 | 4.0 | 3.0 | WS |
| Harrow 77.01 | 4.5 | 4.0 | 4.5 | 4.0 | 4.0 | 3.0 | 3.0 | WS |
| MSU 79 | 4.5 | 4.8 | 4.5 | 4.8 | 4.0 | 3.0 | 4.0 | WS |
| Spiffy | 2.5 | 2.5 | 2.0 | 2.0 | 4.0 | 4.0 | 4.0 | BS |
| NCX-5014 | 4.5 | 3.0 | 4.0 | 3.0 | 2.0 | 4.0 | 2.0 | WS |
| C589 | 4.0 | 3.0 | 4.0 | 3.5 | 4.0 | 4.0 | 4.0 | WS |
| FX-4153 | 4.5 | 4.8 | 4.5 | 4.8 | 2.0 | 4.0 | 3.0 | WS |
| EXP-824 | 4.5 | 4.8 | 4.5 | 4.5 | 4.0 | 3.0 | 4.0 | WS |
| Pioneer | 4.5 | 4.5 | 4.5 | 4.8 | 3.0 | 3.0 | 4.0 | BS |
| XPH-1225 | 4.0 | 4.8 | 4.0 | 4.5 | 3.0 | 4.0 | 3.0 | WS |
| XPH-1191 | 4.0 | 2.5 | 4.5 | 4.0 | 3.0 | 3.0 | 3.0 | WS |
| Premier | 4.0 | 2.5 | 4.0 | 4.5 | 5.0 | 3.0 | 5.0 | WS |
| Pioneer | 4.0 | 4.5 | 4.5 | 4.5 | 4.0 | 2.0 | 3.0 | BS |
| Carolina | 4.0 | 2.5 | 4.0 | 3.5 | 5.0 | 3.0 | 4.0 | WS |
| NCX-5013 | 4.0 | 2.5 | 4.0 | 4.0 | | | | |
| XPH-1225 | 4.0 | 4.5 | 4.5 | 4.0 | | | | |
| PSX-12876 | 4.5 | 2.5 | 4.5 | 4.0 | | | | |
| MC89 | 3.5 | 4.5 | 4.0 | 3.5 | | | | |

* Subjective Ratings: Vigor: 1 = Very low vigor; 5 = Highly vigorous
PF: 1 = Monoecious; 5 = Very predominately female in sex expression
General Appearance: 1 = Very poor, weak plants; 5 = vigorous plants with 3 or more fruits set per plant.
Potential Yield: 1 = low yield potential; 5 = high yield potential
L/D: Length/Diameter ratio
Color: 1 = very light green color; 5 = very dark green
General Appearance: 1 = very poor; 5 = excellent appearance; uniform color, moderately warty, blocky
Spine Color: WS = White Spine; BS = Black Spine

TABLE 9.--Evaluation of Brine-Stock Samples from Size 3 of Replicated Trial - 1979

| Cultivar | Recovery* (%) | Firmness (PSI) |
|---|---|---|
| NCX 5001 | 97.50 | 22.80 |
| Lucky Strike | 95.00 | 22.95 |
| Peto Triplemech | 85.00 | 23.02 |
| Multipik | 93.12 | 20.50 |
| Harrow 77.01 | 97.50 | 20.87 |
| MSU 79 | 98.75 | 19.65 |
| Spiffy | 91.87 | 22.37 |
| NCX 5014 | 96.25 | 20.97 |
| C 589 | 90.62 | 22.42 |
| FX 4153 | 95.62 | 21.10 |
| EXP 824 | 96.25 | 23.60 |
| Pioneer | 100.00 | 21.37 |
| XPH 1225 | 89.37 | 18.95 |
| XPH 1191 | 91.87 | 21.75 |
| Premier | 93.75 | 23.55 |
| Pioneer | 98.75 | 22.05 |
| Carolina | 94.37 | 23.37 |

* Recovery is based upon an estimate of the area of the fruit which would be devoid of gas pockets due either to carpel separation, balloon, lens or honeycomb bloating and would make usable slices when sliced.



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