

# Sources of Scionwood of Pomological Species, Cultivars and Selections of Cherries in Agricultural Experiment Stations of the United States and Canada

C. MARSHALL RITTER\*

This list of sources of scionwood of Cherry species, cultivars and selections have been compiled by the author from the responses to a letter sent to all agricultural experiment stations of the United States and Canada.

The author has taken the liberty to change the spelling of any submitted entries when he definitely knew it to be incorrect. Otherwise, the spell-

ing was left exactly as submitted by the various respondents.

It is assumed that in every case but those which are subject to patent rights or private agreements, reasonable amounts of scionwood of any of the listed cultivars will be available for the cost of mailing, free of charge, or for a small fee, depending on the policy of the station involved.

## List of Respondent Stations

Following each entry is a code consisting of two letters which is the key to those stations which have submitter lists, which were used in list which follows this one.

- AR—Roy C. Rom, Dept of Horticulture and Forestry, University of Arkansas, Fayetteville, Ark. 72701.
- BC—D. V. Fisher, Research Station, Summerland, British Columbia, Canada.
- CD—C. O. Hesse, Dept. of Pomology, University of California, Davis, California 95616.
- CO—C. R. Ure, Orchard Mesa Unit, 3168 B  $\frac{1}{2}$  Road, Grand Junction, Colorado 81501.
- FL—R. H. Sharpe, Dept. of Fruit Crops, University of Florida, 109A McCarty Hall, Gainesville, Florida 32601.
- BE—E. F. Savage, Georgia Experiment Station, Experiment, Georgia 30212.
- IL—J. B. Mowry, Dept. of Horticulture, University of Illinois, Carbondale, Illinois 62901.
- KA—N. W. Miles, Dept. of Horticulture and Forestry, Kansas State University, Manhattan, Kansas 66502.
- KY—C. E. Chapin, Dept. of Horticulture, University of Kentucky, Lexington, Kentucky 40506.
- MA—W. D. Weeks, (deceased) (Dept. of Plant and Soil Sciences, University of Massachusetts, Amherst, Mass. 01002.
- MI—S. Johnston, South Haven Experiment Station, Michigan State University, South Haven, Michigan 49090.
- MN—C. Stushnoff, Dept. of Horticultural Science, University of Minnesota, Rte. #1, Box 746, Excelsior, Minnesota 55331.
- MT—H. Quamme, Canada Dept. of Agriculture, Research Station, Morden, Manitoba.
- MO—D. M. Erb, Huntley Branch, Huntley, Montana 59937 (and) D. R. Markley, Western Branch, Corvallis, Montana 59828 (and) H. N. Metcalf, Agric. Experiment Station, Bozeman, Montana 59716. All three stations are part of the Montana State University System.
- NC—F. E. Correll, Dept. of Horticultural Science, North Carolina State University, Raleigh, North Carolina 27607.
- NY—R. D. Way, Dept. of Pomology, New York Agricultural Experiment Station, Geneva, New York 14456.
- ND—N. S. Holland, Dept. of Horticulture, North Dakota State University, Fargo, North Dakota 58102.
- OR—Q. Zelinski, Dept. of Horticulture, Oregon State University, Corvallis, Oregon 97331.
- OH—G. A. Cahoon, Dept. of Horticulture, Ohio ARS and D Center, Wooster, Ohio 44691.
- OV—G. Tehrani and O. A. Bradt, Ontario Dept. of Agriculture and Food, Vineland Station, Ontario, Canada.

\*Professor of Pomology, Pennsylvania State University, University Park, Penna.; and Chairman, Scionwood Source List Committee, A. P. S.

PA—F. N. Hewetson, C. W. Haeseler and C. M. Ritter, Dept. of Horticulture, Pennsylvania State University, at Arendtsville, North East, and University Park, Pennsylvania, Respectively.

SC—H. J. Sefick, Dept. of Horticulture, Clemson University, Clemson, South Carolina 29631.

VA—G. D. Oberle, Dept. of Horticulture, Virginia Polytechnic Institute, Blacksburg, Virginia 24061.

VE—B. R. Boyce, Dept. of Plant and Soil Science, University of Vermont, Burlington, Vermont 05401.

WI—E. C. Blodgett, Dept. of Agriculture, Irrigated Agric. Res. and Ext. Center, Prosser, Washington 99350.

WN—R. A. Norton, Northwestern Research and Extension Unit, Washington State University, Mount Vernon, Washington 98273.

WP—T. K. Toyama, Irrigated Agr. Res. and Ext. Center, Prosser, Washington 99350.

### List of Cherry Species, Cultivars, and Selections\*

- Abbesse: NY  
 ——— D'Oignies: NY  
 Abesse De Moulard: BC, MO, NY  
 ——— De Moulard, Cerise: WP  
 Abundance: NY  
 Ahlers Spate Kirsche: BC  
 Allman Svarte: BC  
 Alte Parmak: MO, WP  
 Altenlander Blanke: BC, MO, WP  
 ——— Spate Kirsche: MO, WP  
 Amber: OV  
 Arch Duke: MO  
 Bada: CO, NY, OV, WP  
 Badasconer: BC  
 ——— Riesenkirsche: WP  
 Badeborner: BC  
 ——— Dunklebraune: MO, WP  
 Balch Deacon: NY  
 Baton Rouge: MN  
 Bear River (Kelsall): BC  
 ——— #1: BC  
 ——— #2: BC  
 ——— #8: BC  
 Beauchamp's Black: BC  
 Bella De Barbanti: MO, WP  
 ——— Di Toscana: MO, WP  
 Belle D'Annonay: MO, WP  
 ——— D'Orleans: MO  
 ——— De Choisy: BC, MO, WP  
 ——— De Planchoury: MO, WP  
 ——— De September: BC  
 ——— Magnifique: BC  
 Berryessa: CO, OV  
 Bianco Grosse: MO, WP  
 ——— Rosato Di Piemonte: MO  
 Bigarra Fran Kungslaend: BC  
 Bigarra De St. Charmez: BC  
 ——— Gaucher: BC, MO, NY, WP  
 ——— Graffion: MO, WP  
 Bigarreau Coeur De Pigeon: MO  
 ——— Courte: MO, WP  
 ——— Gros Blanc: WP  
 ——— De Montauban: BC, MO, WP  
 ——— Moreau: BC, MO  
 ——— Noir D'Ecully: WP  
 ——— Pelicier: WP  
 ——— Precoce De Burlat: WP  
 ——— Rose: MO, WP  
 ——— Tardie De Putte: MO  
 ——— Tigre: MO, WP  
 ——— Hatif De Burlat: BC, MO  
 Bing: CO, NY, OV, VA, WP  
 ——— Milton: BC  
 ——— Oliver Long Stem: NY, WP  
 ——— Plant Spur: WI  
 ——— Stark's: BC  
 ——— 62: BC  
 ——— 86: BC  
 Black Diamond: MO  
 ——— Eagle: BC, MO, NY, WP  
 ——— Giant: NY  
 ——— Heart: MO, NY  
 ——— Heart, Turkey: BC, WP  
 ——— Republican: WP  
 ——— Russian: IL, OV  
 ——— Sour: NY  
 ——— Tartarian: AR, BC, NY, OV, PA, VA, WP  
 Bolium: MO  
 Bopparder Kracher: BC, WP  
 Borchert #1: NY  
 Bradbournier Black: WP  
 Brassington: BC, NY, OV, VA  
 Braunaur: MO, WP  
 Bruine Bigarreau: BC, NY  
 Brunbar: NY  
 ——— Fran Nuckelby: BC  
 Burbank: BC, NY  
 Burcombe: BC, MO  
 Bush Tartarian: BC  
 Buttner's Rote Knorpel: BC  
 ——— Rote Knorpelkirsche: MO, NY, WP  
 ——— Spate Rote Knorpel: BC, MO  
 Capucien: BC  
 Cardofer Fruhe: MO, WP  
 Carnation: NY  
 Centenniel: WP  
 Ceriser Precoce Dela Marche: BC, NY, MO, WP  
 Cernoj Rannyi: BC  
 Chapman: NY  
 Chinook: AR, MO, NY, OV, WP  
 Chrzgetha Kozerska: BC, MO, WP  
 Clark: MT  
 Coburger Maiherzkirsche: BC

- Coe: IL, NY  
 Coer De Pigeon: WP  
 Coop's: WP  
 ——— Special: BC, NY  
 Coronation: MN, MT, NY  
 Corum: BC, CO, MO, NY, WI, WP  
 Courte Queue De Malines: MO  
 Crandall #1: NY  
 Cropp Early: OV  
 Cserzegi Mezez: BC  
 Cuvelier: BC  
 Czarna Najlepsza: BC, MO, WP  
 Danklemann: WP  
 De Mezel: BC, WP  
 Deacon: BC, CO, WP  
 Del Nord: MO  
 Dell Isola: MO, WP  
 Di Modena Precoce: MO, WP  
 Dicke Braune Blankenburger: MO, WP  
 Dickson: BC  
 Diemetzer Amarelle: MO  
 Dikke Waake: NY  
 ——— Waalse: BC  
 Dikkeloen: BC, NY  
 Donissens Gelbe Knorpel: BC, MO, WP  
 Drileu: MT  
 Dubbele Eierkriek: BC, MO  
 Durona Del Anella: MO, WP  
 ——— Del Cesena: MO, WP  
 Dwarffrich: BC, IL, NY  
 Dyehouse: NY  
 Eagle: MO, WP  
 Early Amber: MO, WP  
 ——— Burlat: CO, NY, WP  
 ——— Purple: NY  
 ——— Richmond: AR, IL, MN, OP, PA,  
 VA, VE  
 ——— Rivers: MO, NY, OV, VA, WP  
 Earnstadter Schwarze Knorpelkirsche: WP  
 Ebony: BC, NY, WP  
 Effeltricher Braune: BC  
 Eileen: MN  
 Elkhorn: BC, OV  
 Elton: NY  
 Empress Eugenie: BC  
 Emperor Francis: CO, MO, NY, PA, VA,  
 VE, WP  
 ——— Francis Big A: MO  
 English Morello: BC, IL, NY, PA, VA, VE  
 Excellenz Von Hindenburg: MO  
 F 12/1: NY  
 F 100 Morella: MO  
 Flamentiner: MO, WP  
 Flemish Red: MO  
 Florence: NY  
 ——— Dark: MO, WP  
 Grogmore Bigarreau: MO, WP  
 Fromm's Herzkirsche: BC, MO  
 Fruchtbare Von Michurin: MO, NY  
 Frühe Französische: MO, WP  
 ——— Ludwigs-kirsche: MO  
 ——— Mai: MO, WP  
 ——— Schwarze Altenlander: MO, WP  
 ——— Werdersche: MO, WP  
 Früheste Der Mark: NY, WP  
 Fruit-Mor-ency: IL  
 Geant D'Hedelfingen: AR, CO, IL, NY,  
 OV, PA, VA  
 ——— D'Hedelfingen, Beggs: OV  
 Geisspeter: MO, WP  
 George Glass: NY  
 Geroj Rannyj: NY  
 Giant: BC, NY, OV, PA, VE, WP  
 Gil Peck: IL, NY, VA, VE, WP  
 Glen Dale #1: NY, OV  
 ——— #2: BC, NY, OV  
 ——— #3: BC, NY, OV  
 ——— #4: BC, NY, OV  
 ——— #5: BC, NY, OV  
 ——— #6: BC, NY, OV  
 ——— #9: BC  
 Gold: BC, IL, MO, OV  
 ——— Cherry: CO  
 ——— Sweet: NY  
 Gottorper Riesenkirsche: BC, MO  
 Governor Wood: BC, NY, WI  
 Greening: NY  
 Gravenbroicher: MO, WP  
 ——— Knorpelkirsche: BC  
 Griotte Du Pays: MO  
 Grosse Germerdorfer: BC  
 ——— Prinzessinkirsche: BC, WP  
 ——— Prinzesskirsche: BC, MO  
 ——— Schwarze Knorpelkirsche: BC, MO,  
 WP  
 ——— Transparent: MO  
 Guigne D'Annonay: MO, NY, WP  
 ——— Garcine: MO, WP  
 ——— Noire Des Vosges: MO, WP  
 ——— Pourpre Hative: MO, WP  
 ——— Precoce De Tarascon: WP  
 ——— Sucree De Leon Leclerc: MO, WP  
 H.E.S. 42022: BC, OV  
 Hardy Giant: CO, OV, WI  
 ——— Giant, Starking: NY, WP  
 ——— Mazzard: IL  
 Harlemer Doppelte: MO, WP  
 Harms Seedling: BC  
 Hative De Bale: MO, WP  
 Hedelfingen Riesenkirsche: MO  
 Heinrichs Riesen: BC  
 Hollander: MO, WP  
 Holmarbar: BC  
 Hornobigarra: NY  
 ——— II: BC, NY  
 Hudson: BC, CO, MO, NY, OV, WI, WP  
 Ialbaste: WP  
 Ida: BC, NY  
 Imbrian: MO, WP  
 Imperiale: MO  
 Inspecteur Lohnis: BC, MO, NY, WP  
 Jaboulay: BC, MO  
 John Innes 3/45: WP  
 ——— Seedling 2420: BC

- Seedling 2434: BC
- Seedling 2538: BC
- Seedling 5673: BC
- Jubilee: CO, MO, NY, OV, WN, WP
- C4-12A: BC
- Kaiserin Eugenie: BC, MO, WI, WP
- Kanarkowa: BC, MO, WP
- Kansas Sweet: AR, IL
- Kassin: NY
- Kassins Fruhe: MO, WP
- Kentish: MO, NY
- Kentish Red: MO
- Kerezer: NY
- Kirtland: NY, IL
- Kleine Ammer: MO
- Keine Waalse: MO
- Knauft: BC
- Knaufskirsche: MO, WP
- Knights Early Black: BC, WP
- Konigskirsche: MO, WP
- Amarelle: MO
- Korosi Maggi H.H.: BC
- Krassa Severa: BC, MO, NY
- Krocker: MN
- Kroeker: NY
- Kronprinz Van Hannover: BC, MO, WP
- Kunzes Kirsches: BC, MO, WP
- L-233 (Wuzinski): BC
- La Plus Precoce De La March: MO, WP
- Lamatte: BC
- Lambert: AR, BC, CO, MO, NY, OV, PA, VA, WP
  - , Milton: BC
  - , Compact: CO
  - , Rainbow Stripe: BC
  - , Starks: BC, CO
  - , Usher: BC
  - X 3-45-2: CO
- Lambert's Beste: MO, WP
- Lamborn: BC
- Lamida: IL, NY, WP
- Lamotte: BC, NY, WP
- Larian: CO, MO, NY, OV, WP
- Late Black: MO
- Duke: BC, NY
- Lauderbach: WI
- Leningrad Dark: MO
- Liefelds Braune: BC, MO, WP
- Louis Philippe: BC, NY
- Lucienkirsche: MO, WP
- Luizet: MO, WP
- Lyons: NY, VA, WP
- Maibigarreau: WP
- Majasi Hosszuszar: WP
- Majkors Fran Alnarp: MO
- Marasca Di Ostheim: OV
- Marenone Di Verona: MO
- Marie Gauchet: WP
- Marienhohe: MO, WP
- Marmotte: MO, WP
- Mary Hall: MO, WP
- May Duke: NY
- Mazel B. MO
- McClain: IL
- Merton 3/45: NY
  - 11/45: NY
  - 14/46: NY
- Bigarreau: MO, NY, OV, WP
- Bounty: MO, NY, OV, WP
- Crane: NY
- Favorite: MO, NY, WP
- Glory: NY
- Heart: MO, NY, OV, WP
- Late: NY
- Marvel: NY
- Premier: MO, NY, OV
- Reward: NY
- Mesabi: MN
- Meteor: BC, IL, MN, MO, NY, OV, PA
- Meyers: PA
- Mierlose Swarte: BC, MO, NY, WP
- Milwaukee: NY
- Minners Spitze: MO
- Miodowka: BC
- Mona: CO, NY, OV, WP
  - C3-9A: BC
- Montearly: NY, VA, WI
- Montlate: NY, VA
- Montmammoth: NY
- Montmore: AR, MO, NY
- Montmorency: AR, IL, MN, MO, MT, NY, OV, VA, VE, WP
  - 505: BC
  - , Dayton: IL
  - , Gilbert: IL, NY
  - , Hobbs: BC
  - , McClain: NY
  - , Michigan C-30-24: BC
  - , Michigan C-39-8: BC
  - , Michigan H-44-1: BC
  - , Michigan O-49-1: BC
- Moreau: MO, NY, WP
  - , St. Charmez Strain: CO
- Morello De Charmeux: MO
- Moscow: BC
- Moss Early: MO, WP
- Muskateller: BC, MO, WP
- Napoleon: MO, NY, OV, PA, VA, WP
- Nefris: NY
- Nera Di Piemonte: MO, WP
- Nero Grosse Di Pimento: BC
- Neu Konigliche: MO
- New McClain: WI
- New Oka: BC
- Niodowka: MO
- Noble: CO, IL, MO, NY, OV, VA, VE, WP
- Noir De Guben: BC, NY, OV, VA
  - De St. Chavannes: NY
- Noire De Chavennes: BC, MO, NY, WP
  - De Montraeaux: BC, MO, WP
  - De Lowertz: WP
  - E La Grappe: MO
- Northstar: AR, BC, IL, MN, MO, MT, NY, OV, VA, VE

- Ochzenherzkirsche: MO, WP  
 Olbryzaka Natolinska: BC, MO  
 Olivet: NY  
 Olivo: MO, WP  
 Orel: BC, WP  
 — #24: MO  
 Orient: MN, NY  
 Oshsenherzkirsche: BC  
 Ostheim: NY  
 Oxheart: WP  
 Parkhill: WP  
 Peggy Rivers: MO, WP  
 Pelham: MO, WP  
 Perle Von Finkenburg: MO, WP  
 Persian: BC, MO, NY  
 Philip Deacon: NY  
 Pijkna Z. Brabanlu: BC  
 Pimento: NY  
 Precoce De Beaulieu: MO, WP  
 — De Clies: MO  
 Prunus Cerasus x Pin: BC, NY  
 — Dropmoreana: BC, ND  
 — Fruticosa: BC, MT, OV  
 — Graeca: BC  
 — Incisa: BC  
 — Japonica: ND  
 — Mahaleb: BC, OV, VA  
 — Mahaleb 13: BC  
 — Mahaleb PI-194098 (Russian): BC,  
 OV  
 — Mazzard (Pennsylvania 382): BC,  
 OV, VA  
 — Pennsylvania: BC, OV, VA  
 — Pleiocerasus x Black Tartarian: FL  
 — Serotina: BC, VA  
 — Tomentosa: BC, ND, OV, VA  
 Puntkers: BC  
 R. Mohl: BC  
 Rainbow Stripe: NY, WP  
 Rainier: BC, CO, MO, NY, VE, WP  
 Ramon Oliva: BC, MO, WP  
 Regina Ortensia: NY  
 Reine Hortense: NY  
 Republican: NY  
 Reverchon: WP  
 Richmorency: NY  
 Rijmaker: MO, NY  
 Rons: OV  
 Roter Freiburg: BC, NY  
 Roundel: BC  
 Royal Ann: BC, CO, OV  
 — , Starks: BC  
 — Duke: MO, NY, OV, VA  
 Rozowa Wozesna: BC, MO, WP  
 Sam: CO, MO, NY, OV, VA, WP  
 Samling Von Worth: BC, MO  
 Sanguinetti: BC, NY  
 Schiutti Tartarian: BC, WP  
 Schmallfelds Grosse Schwartz: BC, WP  
 — Schwarze: MO  
 Schmidt: AR, BC, IL, NY, OV, PA, WP  
 — , Shank: NY  
 Schmidts Bigarreau: CO, VA  
 Schneider: NY  
 Schneiders Spate Knorpel: BC, MO, WP  
 Schrecken: NY, VA  
 Schroeders: BC, MO, NY  
 Schumacher: WP  
 Schwarzwilde: BC, MO  
 Schwarze Hangische: MO, WP  
 — Herz: MO, WP  
 Sekunda: BC  
 Seneca: BC, IL, NY, VA, WP  
 Shattenmorelle: NY  
 Shirofugen: NY, OV, WI  
 Sigrid: BC  
 Sodus: IL, NY, OV  
 Spalding: NY, WP  
 Spanische Glaskirsche: MO  
 — Knorpelkirsche: BC, MO  
 Spanka Krasnokurska: WP  
 — Rannjaja: MO  
 Sparkle: BC, NY  
 Spate Braune: BC, MO, WP  
 Spaulding: OV  
 St. Margaret: MO, WP  
 St. Medard: NY  
 St. Veiter Pelzkirsche: BC  
 Star: BC, NY, OV, WP  
 Stockton Morello: BC, NY  
 Stora Klarbar: MO  
 Suda: IL, NY  
 Sue: BC, NY, OV, WP  
 Svarte Spanska: BC, NY  
 Sweet September: IL, MO, NY  
 Szomolyai Rovezeau: BC  
 Taylor: WI  
 Teickners Schwarze Herzkirsche: BC  
 Teichner's Schwarze Knorpelkirsche: BC,  
 MO  
 Tiroler Schwarze Herzkirsche: BC  
 Torleivsbar: BC  
 Triaux: MO  
 Tschernokorka: BC, NY  
 Turkime: BC, MO, WP  
 Uhlhorn's Wunderkirsche: MO, WP  
 Ukrainische Griotte: BC, MO, NY  
 Ulster: BC, CO, MO, NY, OV, VA, WI, WP  
 Ursula Rivers: MO, WP  
 Valera: CO, NY, OV, WP  
 Van: BC, CO, IL, MO, NY, OV, VE, WP  
 Vega: CO, NY, OV, WP  
 Velvet: CO, IL, NY, OV, VA  
 Venus: BC, CO, MO, NY, OV, VA, VE, WP  
 Vernon: AR, MO, NY, OV, VA, WP  
 Vic: NY, OV, WP  
 Victor: IL, NY, OV  
 Vishy Klarbar: BC, MO  
 Vista: BC, CO, NY, OV, WP  
 Vladimir: MT, NY  
 — (Cheyenne Strain): BC  
 Von Bramens: BC  
 Vroege Van Gelman: BC, NY  
 Walpurgis: BC, NY

Waterloo: BC, MO, NY, WP  
 Wcsesna: NY  
 Werdersche Braune: BC  
 ——— Markt: NY  
 ——— Fruhe Herzkirsche: MO, WP  
 ——— Marktkirsche: BC, MO  
 Werner's Fruhe: MO, WP  
 Wesselhofts: BC  
 Wild Cherry From Caucasus Mts. (USSR):  
 BC  
 Williams Favorite: MO, WP  
 Wils Fruhe Herzkirsche: MO, WP  
 Wimmartingse: MO

Windsor: BC, CO, IL, NY, OV, PA, VA,  
 WP  
 Winklers Weisse Herzkirsche: MO, WP  
 Wotynska: NY  
 Wragg: MT  
 Wye Morello: BC, MO  
 Yates Seedling: BC, NY  
 Yellow Glass: BC, NY, WP  
 ——— Spanish: BC, IL, NY, OV, VA  
 Zeisberger Riesenkirsche: BC, WP  
 Zoete Morel: BC, MO  
 Zum Feldes Fruhe Schwarze: BC  
 Zweitfruhe: BC, MO, WP  
 Zworte Vleeshers: BC, MO, NY

## The Effect of Alar on Fruit Cracking of Stayman Winesap Apple<sup>1</sup>

D. T. SULLIVAN AND F. B. WIDMOYER<sup>2</sup>

Stayman Winesap ranks eighth in U. S. apple production with significant plantings in the Appalachian and Ohio Basin areas. The cultivar has many desirable characteristics, being classed as an excellent dessert apple as well as a processing apple for sauce, baking, freezing, and juice. It also has some serious weaknesses. Fruit cracking prior to and after harvest, poor fruit finish, and scald have been problems.

Blaxtayman trees were planted in 1947 in the New Mexico Agricultural Experiment Station orchard. The fruit has been affected by cracking to some degree nearly every year. Red color development has been poor both in intensity and percentage of fruit covered. Boron sprays and soil management practices had no effect on cracking, although red color development was improved under sod treatment.

Since Alar has been found to improve red color (1), eight trees were selected for treatment in 1968. Alar was applied to four of the trees at the rate of 2000 ppm on July 8. Three weeks after treatment, the Alar trees appeared to have darker green foliage. Severe cracking did not develop until

September, although in previous years it usually began in July.

The fruit was harvested from all trees on September 29, and samples were taken. The results are presented in table 1. Alar-treated trees produced significantly fewer cracked apples, and the average weight per apple was greater, although total yields were not significantly different. The increase in size is contrary to results re-

Table 1. The Effect of Alar on Fruit Characteristics of Stayman Winesap Apples.

|                        | Control | Alar |
|------------------------|---------|------|
| Length (mm)            | 49      | 57   |
| Ground color           | 2.3     | 2.4  |
| Length (mm)            | 59      | 57   |
| Diameter (mm)          | 60      | 68   |
| Length/diameter ratio  | .83     | .84  |
| Weight per apple (gr.) | 101**   | 133  |
| Firmness               | 21.7    | 21.4 |
| Percent soluble solids | 15.9*   | 14.6 |
| Optical density        | 1.63**  | 1.36 |
| Percent cracked        | 31**    | 19   |
| Percent windfalls      | 30      | 18   |
| Average yield          |         |      |
| per tree (lbs.)        | 282     | 312  |

\*Indicates significance at the five percent level

\*\*Indicates significance at the one percent level

<sup>1</sup>Journal Article No. 342. New Mexico Agricultural Experiment Station, Las Cruces, New Mexico 88001.

<sup>2</sup>Professors of Horticulture, New Mexico State University, Las Cruces, New Mexico 88001.