

'Cool' is the word for shipping fresh blueberries overseas

NEW BRUNSWICK, N.J. — Fresh blueberries can now withstand a 2-week-plus ocean shipment to Europe and arrive in excellent market condition, thanks to innovative work by scientists with USDA's Agricultural Research Service here.

For buyers and sellers of fresh produce, the blueberry is special — a popular fruit when in season, but a highly perishable one. Blueberries are always in demand but difficult to store or to ship long distances.

The key to shipping blueberries to Europe by cost-effective ocean carrier (rather than by costly air freight) is to rapidly cool the fruit prior to shipment, says plant pathologist Michael Ceponis of the

ARS Post-Harvest Research Center here.

Last summer, after several years of laboratory testing, Ceponis and co-researchers made an experimental sea shipment of pre-cooled blueberries to Europe. The result was the first successful, commercial over-sea shipment to Europe. Sixteen days after harvest, nearly 7000 pints of blueberries arrived at Brussels, Belgium. The still-fresh berries were quickly sold to wholesalers, eager for North American blueberries.

Almost all blueberries, cultivated or wild, grow on this continent. Europeans pay high prices for a small portion of the annual U.S. blueberry crop that is

shipped by air.

The USDA experimental sea shipment was a cooperative effort of the USDA, Plant Pathologist R.A. Cappellin of the New Jersey Agricultural Experimental Station, and the Hammonton Blueberry Exchange in Hammonton, New Jersey. Laboratory studies had indicated that unprecedented trans-ocean shipments of fresh blueberries would indeed be possible if immediately after harvest the fruit was rapidly cooled to approximately 35 degrees Fahrenheit and stored in an enriched carbon dioxide atmosphere.

Fresh New Jersey blueberries, says Cappellin, are in great demand by European importers. However, growers are reluctant to ship cold berries to distant markets. They fear that, when warmed, the berries will "sweat," decay more rapidly, and lose their pleasing appearance. Laboratory tests here, however, have shown that "sweating" does not increase decay.

In other laboratory tests, ARS scientists simulated 3- and 10-day pre-cooled and non-pre-cooled shipments. They found that during the 3-day "trip," pre-cooled berries decayed 60 to 80 percent less than NPC berries when both were shipped at 50 degrees Fahrenheit, and then exposed to room temperature for 24 hours. For the 10-day "trip," pre-cooled berries decayed 37 to 46 percent less when shipped at 36 degrees Fahrenheit, and then exposed to room temperatures for 48 hours.

The tests, published recently in Plant Disease Reporter and HortScience magazine, also established ideal conditions necessary for shipping (or storing) fresh blueberries for longer periods: cool rapidly after harvest, hold at 36 degrees Fahrenheit prior to and during transit, and ship in an atmosphere modified with 15 percent CO₂.

Ceponis and Cappellin followed these guidelines for the experimental shipment to Europe, and succeeded. The CO₂ is a cost-

effective addition to control blueberry decay for long distance shipping, Ceponis says.

Farm Calendar

Saturday, April 17

South Central Pa. Pork Producers feeder pig show and sale, Shippensburg Fairgrounds, show 10 a.m., sale 1 p.m.

Delaware Pork Producers Show & Sale, Carroll's Barn, Felton, Del., show 10 a.m., sale 2 p.m.
Lancaster County FFA meats judging contest, 9 a.m., Kunzler's, Lancaster.

Monday, April 19

Pa. State Grange Annual Harrisburg Day Banquet, 6:30 p.m., Holiday Inn, Grantville.

Bradford DHIA directors meeting, 8 p.m., Towanda Extension Office.

Oley Resource Conservation Project, 8 p.m., Friedens Lutheran Church, Rt. 73, Oley.

Tuesday, April 20

York ASCS Banquet, 7 p.m., Fair Acres.

Terrace plow demonstration, Dauphin County, 10 a.m., Mylin Messick Farm, Rt. 441.

Berks County FFA banquet, 7 p.m., Kutztown Grange.

Wednesday, April 21

Northern Tier Veal Producers meeting, 8 p.m., GTE Sylvania, Towanda.

Bradford Crop Management Assn. meeting, 8 p.m., Towanda Extension Office.

Terrace plow and no-till seeding demonstration, Lancaster County, 10 a.m., Elizabethtown Fairgrounds.

Thursday, April 22

Pa. Poultry Federation Fund Raising Banquet, 6 p.m., Hershey Convention Center.

Ephrata Young Farmers meeting, 7:45 p.m., high school ag department.

Topics: no-till corn & soybeans, weed control, pesticide certification update.

FFA area public speaking competition, 1 p.m., Brownstown Vo-Tech.

Saturday, April 24

65th Little International Livestock Exposition, Beef-Sheep Center, University Park, 8 a.m.

Berks Dairy Princess Banquet, 7 p.m., Ag Center, Leesport.

Berks County Horse Expo, Penn State Berks Campus, continues tomorrow.

Empire Polled Hereford Assn. 4th annual Classic Sale, 1 p.m., Cornell Livestock Pavilion, Ithaca, N.Y.

York Sheep & Wool Producers workshop, 2 p.m., Ebersole farm, R3 Red Lion.

Pa. Assn. of Meat Producers Annual Convention, Cross Creek Resort, Titusville.

Livestock market and auction news

Weekly Summary

Fri. April 16

Markets: 16.

CATTLE: 7070. Compared with 4777 head last week, and 6216 head a year ago. Compared with last week's market: Slaughter steers. 50-1.50 higher; Sl. heifers steady-100 higher; Sl. cows steady-1.00 higher, although weaker end of week; Sl. bullocks 1.00-2.00 higher; Sl. bulls strong-1.00 higher. Sl. steers High Choice & Prime No. 3-4, 69.85-72.50; Choice No. 2-4, 65.00-70.50 Good 58.00-67.00; Standard 50.00-58.00. Sl. heifers: Choice 61.50-67.25; Good 55.00-62.00; Standard 49.00-55.00. Sl. cows: 41.00-45.00, few 47.00. Cutters 38.00-43.00; Canner & L. Cutter 32.00-39.00; Shells down to 22.00. Sl. bullocks: 60.00-63.75, Good 54.00-59.00; Standard 50.00-54.00; Sl. bulls: Yield Grade No.1, 1000-2200 lbs. 49.50-57.50, few down to 46.00. Grade No.2, 900-1400 lbs 44.00-50.75.

FEEDER CATTLE: Steers, Medium Frame No.1, 325-750 lbs. 55.00-65.00. Heifers, Medium Frame No. 1, 300-700 lbs. 47.00-

58.00; bulls Medium Frame No. 1, 400-700 lbs. 47.00-58.50.

CALVES: 3572. Compared with 3135 head last week and 3239 head a year ago. Vealers highly uneven. Prime 100.00-111.00, few 124.00 Choice 85.00-100.00, few 106.00 Good 70.00-90.00 Standard & Good 90-120 lbs. 45.00-60.00; 65-90 lbs. 34.00-45.00, few 55.00; Utility 50-90 lbs. 16.00-35.00.

FARM CALVES: Hol Bulls 85-125 lbs. 51.00-106.00, mostly 55.00-87.00; Hol Heifers 85-140 lbs. 50.00-125.00, mostly 70.00-110.00. Hogs 6980. Compared with 6982 head last week and 7451 head a year ago. Barrows and gilts steady to .50 lower. US No. 1-2 200-245 lbs. 52.50-55.00 No. 1-3 200-250 lbs. 51.00-53.50; No. 2-3 200-275 lbs. 50.00-52.50; No. 1-3 140-190 lbs. 43.00-50.00; Sows strong to 1.00 higher. US No. 1-300-600 lbs. 45.00-51.50; No. 2-3 300-650 lbs. 43.00-46.75. Boars 33.00-43.00.

FEEDER PIGS: 1027. Compared with 810 head last week and 1184 a year ago. Feeder pigs mostly 1.00-2.00 higher. US No. 1-3 20-35 lbs. 22.00-40.00 per head; No. 1-3 35-50 lbs. 28.00-59.00.



Like money in the tank

Invest in a Calumet Vacuum Tank with soil injector.

Liquid hog manure can save you several thousands of dollars in commercial fertilizer costs. That's why it pays to invest in Calumet. Pick the tank size that fits your herd—from 1180 to 4500 gallon capacities. Choose from three vacuum pumps—177 CFM, 247 CFM or 353 CFM—for fast filling. Select PTO powered at 540 or 1000 RPM, or optional hydraulic motor drive. Then put those liquid assets to work with a Calumet 2 or 4 shank soil injector. Injecting helps retain four times the nitrogen usually lost in surface



spreading. And you'll reduce odor and runoff problems. You'll get long term dividends too. Calumet tanks are engineered for years of efficient, low maintenance operation. Heavy duty steel alloy tanks are epoxy-coated to resist corrosion. Double reinforced A frames and support skids add strength for heavy loads. All Calumet products are backed by a 12 month warranty.

So start profiting from the fertilizer produced on your farm. Get a Calumet vacuum tank and soil injector. It's a tank you can bank on.

USED EQUIPMENT

12 Better Bit Auger Pump
10 Badger pump
1500 Badger Spreader Tank
2250 Calumet Spreader
3250 Calumet Spreader
10 Ton N.I. Manure Spreader
287 Hawk Bit

CALUMET & NESSETH DISTRIBUTOR



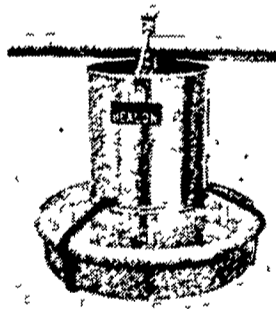
RD 3 - Box 84, Mifflinburg, Pa 17844 -
Phone. 717-966-2736

F. ERNEST SNOOK

FARMER BOY AG INC.

DISTRIBUTORS FOR:

BEACON STEEL PRODUCTS



Adult Turkey Feeder



Broiler Pan Feeding System

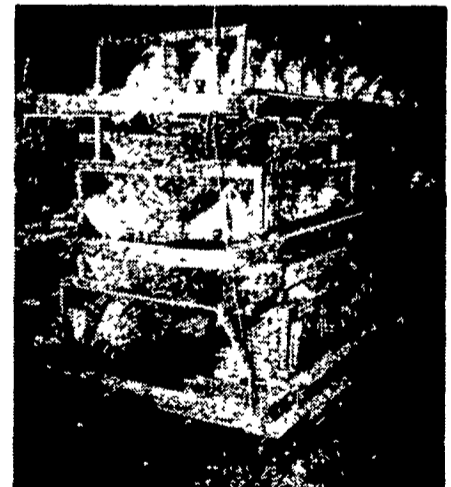
"45 Years of Manufacturing For The Poultry Farmer"

Featuring Equipment For:
TURKEYS AND BROILERS



★ DICKISON LAYING CAGES
★ DICKISON BROOD GROW CAGES

19 years of Manufacturing Experience of Poultry Equipment and will Custom Make to your Specifications



Flat Chain Feeding System, 3 or 4 Deck with Dropping Curtains

SWINE & POULTRY SYSTEMS SPECIALISTS

FARMER BOY AG INC.

457 E. MAIN AVE. MYERSTOWN, PA 17067

PH. 717-866-7565

BEST IN DESIGN, PRICE AND EXPERIENCE