

Biotin deficiency showing up in swine

NEWARK, Del. — Nearly 40 years ago a group of researchers fed raw egg white to growing pigs. Signs of a nutrient deficiency quickly followed, including dry scaly skin, hair loss, foot lesions and depressed growth. That experiment was the first ever to produce signs of a deficiency of biotin, an essential vitamin, says University of Delaware extension livestock specialist Ken Kephart.

Since that time, however, few nutritionists have advocated the use of supplemental biotin in swine rations. Why? First, biotin is found in almost every feedstuff imaginable, Kephart says. And secondly, microflora in the lower gut of the pig synthesize significant amounts of this vitamin. So a biotin deficiency would seem unlikely.

During the mid-1970s, however, several cases of what appeared to be biotin deficiency were reported. "These cases occurred in modern production systems and supplementary biotin usually reversed the symptoms. That made a strong case for biotin and also got the research ball rolling again," the specialist says.

What does biotin do? It plays a key role in the metabolism of carbohydrates, fats and proteins. "Research with many swine species shows that this vitamin is essential in the maintenance of skin, hair, foot pads, the reproductive system and the thyroid glands," Kephart says.

"An early warning of biotin deficiency is scaly skin or dermatitis, followed by loss of hair," he adds. "One field trial conducted by Hoffman LaRoche also showed that oil skin lesions may be associated with a biotin deficiency. Additional symptoms include cracked hooves, retarded growth, impaired feed conversion, poor reproductive rates and spasms of the hind legs."

Why do biotin deficiencies occur? The following are possible reasons, according to Kephart.

—Although biotin is widespread among feedstuffs, its concentration varies considerably. From batch to batch, feed may contain insufficient or excessive amounts.

—Availability in feedstuffs varies, too. For example, biotin in wheat (which is already low in this vitamin) may at times be totally unavailable to the pig.

—Regular use of antibiotics may

reduce biosynthesis of biotin in the digestive tract.

—Increased confinement rearing of pigs reduces their exposure to feces, a possible source of biotin.

—Less biotin-rich feedstuffs, such as alfalfa or distillers solubles, are used today, leading to a lower concentration in rations.

How much biotin should a swine diet contain? "We really don't know," the specialist says. "The National Research Council suggests a requirement of 91 milligrams per ton of feed. Most corn-soy diets will contain from 90 to 125 mg/ton. But research conducted by Ken Bryant and E. T. Kornegay at Virginia Polytechnic Institute indicates that this level is not sufficient for optimal performance."

Their work shows that by adding 200 milligrams of biotin per ton of feed, hoof integrity will be improved during growth. And adding 400 milligrams per ton during the reproductive phase decreased the weaning-to-breeding interval from 14.5 to 10.2 days.

Results of other studies vary, but some research indicates that when biotin is added to gestation rations, sows farrow more live pigs, especially in their second, third and fourth litters.

"Suppose your sow herd shows signs of hair loss or foot problems," Kephart says. "Or perhaps their reproductive rate isn't what it should be. That doesn't necessarily mean they're got a biotin deficiency. But it might be a good idea to check their ration. Studies show that for optimal performance, a ration would contain 400 to 500 milligrams of supplementary biotin per ton. If the extra biotin isn't already there, adding it will cost about \$2.25 per ton of feed. That amounts to only half a cent per sow per day."



Alger re-elected MMI pres.

STRONGSVILLE — Norman D. Alger, Mantua, OH was re-elected president of Milk Marketing Inc. (MMI) and four new board members were seated at the board of directors' meeting held here January 5. Ten other board members were re-elected to the 25-man board.

Alger is an active dairy producer in Portage County and has been leader of the regional dairy marketing cooperative since January 1980.

Joining Alger on the officers' roster are: First Vice President Herman Brubaker, West Alexandria, OH; Second Vice President Roland E. Higgins, Sunbury, OH; Secretary Duncan LeCompte, Shelbyville, KY; and Treasurer Carl I. Johnston, Waynesburg, PA.

Officers serve a one-year term and board members are elected — via mail ballots from the membership — to serve two-year terms. All board members must be active dairy farmers.

Newly elected board members include: Clarence Conrad, Grafton, OH; Phillip L. Hart, Clayton, MI; Harvey Schmiesing, Ft. Loramie, OH; and Kenneth Stromski, Jewett, OH.

Also re-elected to the MMI board were: Norman D. Alger, Mantua, OH; Roland Higgins, Sunbury, OH; Ralph Baumgardner, New Carlisle, OH; Lawrence Dean, Wilmington, OH; Calvin M. Henry, Wattsburg, PA; Ronnie Monahan, Germantown, KY; Urban Seger, Minster, OH; J. William Shultz, Berlin, PA; Leon Tiggip, Bainbridge, IN; and Galen Yoder, Ligonier, IN.

MMI is a 9,500 member dairy farmer owned cooperative encompassing an eight state mid-western area including Ohio, Indiana, Pennsylvania, Michigan, New York, Kentucky, Maryland and West Virginia. Last year MMI marketed more than 4.7 billion pounds or 549 million gallons of milk.

MAILBOX MARKET

For Sale Reg polled Herefords, several open heifers 1 bull left trustee seed stock Wayne Co 717 689 2158

For Sale 2% ton 6x6 Reo Army truck steel cab new tires, cargo body \$2500 Warren Co NJ 201 362 9521 after 7 p m

For Sale 6 calf hutches Reg bull calf 2 mos old, Elevation Son Centre Co 814 349 8010

Reserve corn status

WASHINGTON, D.C. — All corn in the farmer-owned grain reserve will remain in release status through Jan. 31, according to Everett Rank, administrator of the U.S. Department of Agriculture's Agricultural Stabilization and Conservation Service.

Rank said the decision on the reserve corn was made following a review by USDA's Commodity Credit Corporation of its average market prices Jan. 3, as reported by USDA's Agricultural Marketing Service, adjusted to reflect the market price received by farmers.

On Jan. 3, the adjusted price for corn was \$3.26 per bushel, 11 cents above the release level of \$3.15 for reserve IV corn, and 1 cent above the release level of \$3.25 for reserve V corn.

Daily markets reviewed by CCC for corn are Kansas City, Minneapolis, Omaha and St. Louis.

For reserve IV corn loans, storage payments will remain stopped and interest will continue to accrue. For reserve V corn loans, storage payments stopped and interest resumed on Jan. 1.

MAILBOX MARKET

For Sale 4 unit DeLaval rotary milker pump 5 yrs old & 5 btm trip MF plow Berks Co 215 285 6525

For Sale Top buggy w/rubber & hyd brakes in good cond \$850 Lanc Co 717 354 6791

For Sale JD 2640 70 HP, 650 hrs 15 5 38 6 ply tires Hi Lo trans & eng heater Montg Co 215 584 5168

For Sale Package bees 2, 3 & 4 lb packages avail April 14 Dauphin Co 717 896 8637 after 4 p m

For Sale 2 1/2 hp Lansing gas engine runs good 1939 JD model B' Dauphin Co 717 692 2493

For Sale Bred reg Suffolk ewes from show flock sired by Nelsh's outstanding son of Vegas (the \$90,000 ram) 215 262 4176

Wanted JD 520 or 530 3020 or 4020 diesel & 479 or 489 NH haybine Leb Co 717 949 3704

For Sale Columbia 2 speed rear w/all controls, fits 1930 & 40's Ford & Lincoln model T, 2 speed rear 215 326 6753

Wanted 40 used chain tie cow stalls will take out Write Box 242, New Providence, Pa Lancaster Co 17560

For Sale Kodiak woodstove insert w/blower & deflector heats 2 000 sq ft barely used asking \$400 Berks Co 215 926 1089

For Sale 2 Laramie mud & snow tires 800x16 5 8 ply rating like new \$100 York Co 717 993 2951

For Sale Zook manure spreader good cond \$950 Christ B Her shberger 228A Hoover Rd Kinzers RD1 Pa 17535 Lanc Co

For Sale AKC Siberian Husky pups reds or blacks Daniel Miller 2822B Stumptown Rd Bird in Hand Pa 17505

For Sale 24' iron but chering kettle \$130 Jacob S Stoltzfus Prawl's Hollow Rd Peach Bottom Pa 17563

For Sale JD LA tractor & cultivator \$1000 Ben Franklin stove \$50 Miniature mule geldings drives & works \$375 717 548 2286

For Sale 1950 Chevy sedan ready to restore, not running, asking \$800 Montg Co 215 234 9379

For Sale Good 22' diamond plate, steel truck bed \$900, engine block for SM or 400 Farmall \$225 Bradford Co 717 364 5318

For Sale 2 yr Suffolk ram, 10 mo black ram, 8 mo Dorset Suffolk cross ram \$75 ea 215 822 1639

Wanted 3 16" IHC 2 way plow (prefer fast hitch) will buy or trade 2 16" 2 way plow Mercer Co 412 646 4691

For Sale 11' JD KBA transport disc \$2200 4 sows, 1 boar, feeder pigs, JD 1209 mower, \$3500 301 592-6485

For Sale Truck, 1955 Ford F350 V8, 4 speed, 16 5 tires 6'x8' steel bed w/wrecker \$1500/best offer 717 652 1796

For Sale 12' IH lever harrow No 401 w/shovels, good cond \$250 can deliver York Co 717 235 2032

For Sale Elec motors, 3 phase, 220 440 volt, 15 hp, 40 hp & 50 hp Schuylkill Co 717 695 2571

For Sale 50 ton good quality orchard & timothy mixed hay, no rain, \$95 ton, can deliver, Sch Co 717 345 4489

For Sale Cleaned med red clover seed \$55/bu Carbon Co 717 386 5194

For Sale Reg female Pit Bull parents on premises ears cropped all shots, 3 mos old Lycoming Co 717 326 1605

MAILBOX MARKET

For Sale Hill hitch hand lever, complete to fit MH 101S \$20 Lehigh Co 215 767 3757

Wanted Ford 8N or Ferguson 30 tractor & walk in cooler For Sale Rat Terrier puppies Queen Anne's Co 301 778 1919

For Sale Reg Jersey 2nd calf due Feb 1, Berks Co 215 856 7331

For Sale 2 Eureka cleaners, 2 SP Waldron mixers, 30' vertical auger, drive wheels shafts & belts, Carroll Co 301 756 6454

For Sale 2 12 ton forage wagons exc cond 1957 Chev Bel Air exc cond Huntingdon Co 814 632 5781 eves

For Sale Construction tampers rebuilt, exc cond \$600 or \$1100 for both Jack hammer points (new) \$15 each Dauphin Co 717 566 0370

For Sale 2 200 gal saddle tanks, universal mount carrying frame, centrifugal pump, nozzles & hoses Berks Co 215 562 8878

For Sale Ferguson TO 30 tractor w/Wagner loader, 3 pt hitch & rotary mower \$2300/best offer Montg Co 215 489 3527

Wanted Rusted tin painted red, must be in flat ribbed (not corrugated) sheets Berks/Chester Co 215 369 1210 eves

For Sale 1978 Olds Delta 88 station wagon very good cond \$2600 74 Int'l tractor w/loader #574 \$5000 717 943 2655

For Sale 800 gal vac fill honey wagon 1 row Int potato digger mower snow blower & blade Schuylkill Co 717 648 9022

For Sale JD 45 combine w/cab 12' platform 235 corn head 2200 hrs exc cond \$5500 Montg Co 215 754 7188

For Sale Ford 4000 Industrial w/heavy border 717 432 2740 after 6 p m

Wanted Pedal tractors JD A JD 730 JD 10 4 holes Allen Z Martin RD#3 Glenwood Dr Ephrata, Pa 17522

Wanted Narrow or wide corn head for JD 38 35 3800 or 3940 harvester Joe H Zimmerman, RD1, Leola, Pa 17540

For Sale 20 Simmental cows, JD 326 baler w/motor Int 35 rolobar rake Juniata Co Jacob Lapp, RD2, Mifflintown Pa 17059

For Sale New Oswalt 1830 portable TMR mixer w/scales, used 9 mos best offer Leb Co 717 866 6081 after 6 p m

For Sale 1967 Ford pickup, runs, not in spected, \$250 Berks Co 717 933 5368

For Sale Lab German Shep mix pups, 6 wks old all black, \$3 ea 6 left, Oley Berks Co 215 779 5605

For Sale 60hp Deutz exc good rubber economical, 1380 hrs, must sell \$7800 Bedford Co 814 623 1831 after 7 30 p m

For Sale Round hog feeder 4,000 lbs capacity \$100, corn fed Muscovy ducks 600x16x6 ply tires \$15 ea 301 756 2087

For Sale Black Percheron stud colt, born 6 28 1983, \$325 John A Mast, R1, Box 58A Wyoming, Del 19934

For Sale Farm trailer, 2 wheel, 8' wide x 9' long, \$95 Electric fence, 6 volt battery type, as is \$10 York Co 717 432 5731

For Sale New 8 ton wagon gears w/8" wheels \$440 Lanc Co 717 354 0595

For Sale Used snow blower & snow blade for cub cadet tractor, JD 210 tractor & mower Berks Co 215 683 3154

MAILBOX MARKET

For Sale Used Speed Queen wringer washer Elizabethtown, Pa 717 367 3882

For Sale JD 14' tran sport disc needs work \$450 JD disc for M JD like new \$400 York Co 717 292 4416

For Sale 12 ton feed bin, NI manure spreader 717 665 3133

Notice Order now cauliflower cabbage, broccoli & pepper plants by the 1000's for spring planting Lanc Co 215 445 5046

For Sale 79 Chevy automatic, 400 engine 4x4 donley 30,000 miles w/Donahue 3 axle trailer 17' alum dump exc 301 357 4281

Wanted Cement mixer w/electric motor in good cond 215 932 9762

For Sale 2 family cows, 1 fresh, 1 springer, 1 holstein stock bull Lanc Co 717 354 7866

Wanted 38" tires w/rim to fit 3020 JD, also front wheels Lanc Co 717 354 8933

For Sale Diamond plate 1/4"x3"x4", 3/16"x4" square tubing steel 15 cents/lb Wash Md 301 824 7240 no Sunday calls

For Sale JD 2240 4 wheel drive 50 hp 800 hrs w/143 loader, in real good condition 717 665 3920

For Sale NH tank spreader model 3368 A 1 shape Harvester forage scales A 1 shape house shelters 16x68 Franklin Co 717 352 2266

For Sale AKC St Bernard pups 6 wks old David F Beiler 229 N Hollander Rd Gor donville Pa 17529 Lanc Co

For Sale Oliver 770 gas tractor good cond 970 Case diesel late 1976 model 215 445 5796

For Sale AC model C tractor good cond \$650, 3 pt hitch for 2 cyl JD tractors \$250 Montg Co 215 679 7763

For Sale Fox 546 harvester w/hay pickup harvester ready for the field \$275/best offer Lanc Co 717 733 8528

For Sale NI 402 hay rake \$775 Ford 3 pt cultivator \$175 NI 750 hay crimper \$175 JD 11' disharrow \$895 717 354 0266

For Sale Standardbred carriage horse, 10 yr old 1 Quarterhorse, 6 yr old 215 857 3407, 5 p m 8 p m

For Sale 5 yr old good sized Standardbred carriage horse Elam K Beiler, RD 6, Box 353, Coatesville, Pa 19320

For Sale 32 Holstein cows, by Sire Power bulls, a complete dairy, home raised & reas priced, Susquehanna Co 717 698 6597

For Sale 1967 Int 400, 34000 rears, 10 speed w/Stoltzfus lime & fert, spreader equip w/air lift booms & trailer hitch 215 593 5961

For Sale Holstein bull service age \$425 Single & double trees, Jacob King, 1 mi E of Quarryville

For Sale 4 new wall mtd hot water radiators w/valves 16"x48", new single row potato digger web chain 20 1/2" 717 528 4914

Wanted 90 100 hp power unit w/gear reduction for 1000 rpm or 540 Leb Co 717 865 2529

For Sale Vineland egg grader 18 20 cases per hour w/Kuhl washer, vacuum lift & pump included 717 626 4240

For Sale 8' V snowplow \$225 Juniata Co 717 436 2255

For Sale 3 pt wood splitter w/8"x24" heavy duty cyl will also sell cyl separate Lanc Co 215 445 6483