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Agricultural and Home Economics Experiment Station

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farm business and management

Low-Quality Eggs Take More Time to Grade

It takes more time for a candler to determine the grade of a low-quality egg than of a high-quality egg. About 25 percent more time is needed for a grade B egg than for a grade A egg, and about 90 percent more time is required for a grade C egg than a grade A egg. Important? Not greatly all by itself, but more so when coupled with other factors observed in the efficiencies and costs of operations of egg-cartoning plants in an economic-industrial engineering study.

Taken all together, many such “small” findings point up the opportunities for egg processors and distributors to improve their efficiencies at different points and to lower processing costs, say George W. Ladd and Keith McRoberts who have been conducting the study.

Beef, Pork Margins Change with Prices, Affect Each Other

A decrease in the wholesale price of beef is accompanied by a rise in the wholesale-to-retail margin for beef and a fall in the wholesale-retail margin for pork. Likewise, a decrease in the wholesale price of pork results in a rise in the wholesale-retail pork margin and a fall in the wholesale-retail beef margin.

These changes were confirmed as a part of a larger study of the long- and short-run demands for farm products. The researchers also noted that there seems to be a lag in the response of beef margins to price changes but no lag in the response of pork margins to price changes.

George W. Ladd, Wilbur Maki, Richard Phillips, Wayne Fuller and Lawrence Peterson are responsible for the over-all study.

soils

Investigate Effect of Soil Surface Thickness On Yields of Iowa Corn

Soil surface thickness and its effect on corn yields is being studied by Experiment Station researchers under the direction of W. D. Shradar.

In a 2-year study, plots in the Marshall-Monona transition soil area in southwestern Iowa were fertilized with five levels of nitrogen. When no nitrogen was applied, corn yields were lower on eroded than on uneroded sites.

In one year, when nitrogen was applied at the rate of 100 pounds per acre, there was no difference in corn yields on the eroded and uneroded sites.

In the other year, corn yields were lower on the eroded than on the uneroded sites regardless of the amount of nitrogen used. When nitrogen fertilizer was used on artificially desurfaced soil at the rate of 200 pounds per acre, corn yields were as high as on plots which were not artificially desurfaced.

Crop Residue Mulches May Retard Corn Growth

Keeping a mulch of crop residue on the surface of the soil as an erosion-control measure may cause poor growth of corn. Deficiency of nitrogen has long been considered a cause of this poor growth, but recent studies reported by D. T. Parker and W. E. Larson of the Experiment Station and the USDA showed that plants grown where residue was on the soil surface often contained a higher percentage of nitrogen than plants grown where residue was plowed down.

Adding nitrogen generally increased growth, but the response to nitrogen was no greater with surface than with buried residue. Extremely heavy nitrogen applications have not been used, however, and the researchers plan to see whether poor growth can be corrected at levels of nitrogen fertilization sufficiently high that no further response in growth to nitrogen is obtained.

Also, lack of manganese may be a factor in retarded plant growth where residue is on the soil surface, since less manganese was found in plants from mulched soil than in those from bare soil. Further studies will be made to see whether manganese fertilization will help plants growing on soil with surface residue. The researchers also hope to find out how much manganese is available in soil where the residue is on the surface and what effects manganese has on plant growth.

Horticulture

Hardy Perennials For Iowa Gardens

The Iowa State University flower garden, in addition to being an official test garden for the All-America Rose Selections Trials, is also used to test the suitability of other flowers for Iowa conditions.

The latest tests showed a number of hardy new perennials which have merit for Iowa gardens. They are: the Saskatchewan Lily...
hybrids Rosalind, White Princess, Jasper and Rose Queen; Thalictrum Roxenbrunianum, Sedum Jasper and Rose Queen; hybrids
foot spacing. Lewis Peterson, who
atropurpureum magnificum, Helianthus multiflorus florepleno and Penstemon cobaea.

Several new varieties of standard garden annuals also were planted—most of which are not sufficiently distinct to merit recognition. Of more than general interest are Marigold Climax, Petunia Satellite, Snapdragon Rocket hybrids and Rudbeckia Gloriosa Daisy.

These trials are conducted under the direction of Griffith J. Buck of the Experiment Station.

Get More Watermelons With Smaller Spacing

ONE YEAR's results of watermelon plant spacing tests showed a yield increase of 4.5 tons per acre when a 4x7-foot spacing was used instead of a 12x7-foot spacing. These tests are designed to show the effect of different spacings on yield and fruit size.

Three spacings—4x7, 8x7 and 12x7—were tested, while adequate moisture and nutrient needs were provided for the plants at each spacing. The yield increase at the 4x7 spacing was accomplished with relatively little sacrifice in fruit size compared with the 12x7 foot spacing. Lewis Peterson, who is conducting the test, reports that 400 pounds of 10-10-10 fertilizer seemed to be adequate for each of the spacings. These results, however, are based on just 1 year's testing and not on a long-time study, cautions Peterson.

Eleven Apple Varieties Found Suitable in Iowa

MOST OF THE bearing varieties tested in the southwestern Iowa experimental apple orchard have proven to be acceptable either for home production or for commercial production where the market could use a new variety for the particular season. In the order of ripening, these varieties are: Lodi, Patricia, Red Gravenstein, Minnesota 724, Lakeland, Redgold, Red Sharon, Delcon, Jonadel, Idared and A603. Only the latter three varieties—Jonadel, Idared and A603—are late fall or winter apples.

New High Nitrogen Fertilizer for Lawns

A NEW SLOW-RELEASE nitrogen fertilizer has been developed and evaluated for use on lawns. The material—ureaform—is available either as a 38-percent nitrogen fertilizer or as a nitrogen source in mixed fertilizers.

Since lawn turf requires a constant supply of small amounts of nitrogen throughout the growing season, the slowly available natural organic and synthetic organic nitrogen carriers are of special value. The use of these fertilizer materials makes possible a more constant feeding of the turf with fewer applications during the season.

Experimental work on seedbed fertilization indicates that ureaform nitrogen may be applied at rates as high as 53 pounds per 1,000 square feet. This is equivalent to 20 pounds of actual nitrogen per 1,000 square feet. When this amount of nitrogen is worked well into the top 4 inches of a soil, a seedling turf may be established at this high rate of fertilization without injury to the grass. By so doing, a slow-release nitrogen fertilizer equivalent in nitrogen content to a 5-year supply is mixed in the soil within the root zone.

Studies are being carried out under the direction of Eliot C. Roberts to learn if this theoretical 5-year supply will actually meet the needs of the turf for such an extended period or if, under varying soil conditions, this nitrogen will break down and be released in a shorter length of time. The quality of seedling turf obtained from the 20 pounds actual nitrogen from ureaform has been equivalent to that obtained from 2 pounds actual nitrogen from inorganic sources. Phosphorus and potassium fertilization in the seedbeds have been kept constant in all cases.

In tests so far, relatively high rates of slow-release nitrogen fertilizer have been successful, with no apparent grass injury, and the quality of seedling turf from using 20 pounds of actual nitrogen from ureaform has been equal to that from 2 pounds from inorganic sources.