A MARKET DIRECTED SOLUTION

Enforcement of the prohibitions on adding water to grain have been selective at best. While many farmers and country elevators have used the technique to deliberately increase the weight or the moisture content, no systematic effort has been made to enforce the prohibition at these points in the market either through FDA or FGIS. Enforcement and supervision has been most aggressive at export elevators. It is anticipated that the current prohibition will also be selective in that the presence of FGIS in the export elevators will make it relatively easy to determine if water addition devices have been installed. Presumably only mechanical devices that actually expel water as a mist or fog will be enforceable. Strategies of blending wet and dry grain or aerating during humid conditions or even unloading barges during a rainstorm will not be enforced. Grain absorbs water from the ambient air whether standing in the field prior to harvest, during aeration in storage, or during transfer from one location to another.

In addition it will be impossible to enforce the prohibition in the large number of country elevators and farms that may use mechanical devices or any of the other alternative strategies for increasing moisture content. So long as the market is organized to pay grain prices for water added to grain below the base moisture, the economic incentives will make it extremely difficult to effectively and uniformly enforce a prohibition against the entire grain industry. Thus the question of equity will continue to be a point of contention within the industry.

The cost of enforcement can be reduced by eliminating the incentives. The incentives for illegally adding water (i.e. to increase its weight and moisture content) are entirely within the control of the market. Grain above the base moisture receives an explicit discount, generally in the form of a weight subtraction and a drying charge. Grain dried below the base moisture receives an implicit discount. Eliminating the implicit discount, removes the incentive for adding water to grain to increase its weight. The incentives for rewetting can be removed by calculating the quantity of grain for a market transaction on the basis of the weight of dry matter contained in the lot. The grain industry uses a shrink factor to adjust the weight of grain at moisture levels above the base, to the equivalent number of bushels at the base moisture content. Thus, the industry is using a concept of equivalent bushels at base moisture in order to adjust the weight of grain with excess moisture. The same formula and the same shrink factors can be used to adjust the quantity of grain at moisture levels below the base to the equivalent bushels at base moisture. The quantity purchased would be determined by the dry matter contained in the grain. This would eliminate all incentives for adding water since the seller would receive the same total dollars for 1000 bushels at 14% moisture as received for 1012 bushels at 15% moisture assuming no price adjustments for quality discounts. Quality discounts would be assessed independently of quantity adjustments. In addition, the FDA ruling would become irrelevant since adding water to grain would not increase its weight (as determined by the equivalent bushel formula) nor its market value.

Pro and Con of the Equivalent Bushel Approach

The logic to the use of equivalent bushels for calculating quantity is that it would allow farmers and elevators to select the moisture content that was best for their storage or handling practices without any penalty, it would eliminate incentives for rewetting, it would eliminate the

necessity for the policing action and budgetary implications for FGIS, and it would generate greater equity by paying all sellers according to the value of the grain and the product which they deliver. It would allow producers to dry grain to a safe storage level without penalty for selling grain below the base moisture at the time of delivery.

The advantage of the equivalent bushel concept is offset by several disadvantages.

1. Blending income derived from differences in moisture content would be virtually eliminated. Under the current pricing structure, grain above and below the base moisture level generates income to those who blend wet and dry grain together. Reducing blending income need not reduce elevator profits which are determined primarily by competition. Blending income changes when crop conditions change. Elevators adjust their margins to maintain competitive profits.

2. Farmers who over dry grain by accident or intent or who must harvest at moisture contents below the base will have a smaller implicit penalty under the equivalent bushel concept. This should not create an incentive for over drying however since harvesting soybeans at moisture levels below 13% increases field losses and drying corn below the base moisture increases the cost of drying.

3. Grain buyers will find it necessary to measure moisture content on every load, thus increasing the cost of marketing and quality determination. Under the present system, elevators may by-pass the moisture test if the grain is obviously below the base moisture.

4. Grain below the base moisture has a lower value than wet grain because it breaks more easily and may contain more broken kernels than grain stored at higher moistures. However, breakage susceptibility is influenced by genetics and drying method as well as final moisture content.

5. The basis for pricing and price differentials should be market determined, not dictated by regulatory agencies. Although the equivalent bushel does not prevent buyers from setting prices and discounts based on market conditions, it is viewed by some as regulatory interference in market operations.

6. The equivalent bushel concept will require calculations on dry grain as well as wet grain in order to determine the true quantity that is being purchased, increasing calculation costs. Shrink factors that are currently applied only to grain above the base moisture would need to be applied in a similar manner to grain dried below the base moisture.

This concept has been used in other countries and at one time was used in Canada for soybeans [Ontario Soybean Growers, 1983]. In addition, a survey of Illinois elevators in 1985 showed that 14 percent of the respondents were already using the equivalent bushel concept or were paying premiums for grain dried below the base. [Hill and Spangler, 1985]. A national survey of 1994 practices at grain handling firms showed 5.4 percent of the respondents were adjusting price or quantity of grain dried below the base moisture. The percent was higher for export elevators, feed manufacturers, and flour millers; lower for country and subterminal elevators (Table 10). [Hill and Caponigri, 1995]