Ontario Agri Business Association

*Representing the Crop Input, Grain and Feed Industry*

# AGRI BUSINESS MEMBER E-UPDATE

***This Member Update is being distributed to all OABA Regular and Branch Members in the Grain Section.***

**October 27, 2009**

**OABA has received several calls from elevators receiving producer deliveries of corn at moistures of 35% and over. OABA has contacted the Canadian Grain Commission regarding this situation, and the position of the CGC is that, once moisture levels for corn rise above 35%, the testing results are inconsistent. This situation has created some operational difficulties for both producers and elevator operators.**

## CGC Conversion Table No. 11A for Model 919/3.5 Moisture Meter Unable to Assess Corn Moisture Levels Exceeding 35%

It should be noted that Table No. 11A, the current high moisture conversion table for the Model 919/3.5 moisture meter as issued by the Canadian Grain Commission has an effective moisture range of 20% to 35%.

In efforts to assist elevator operators receiving corn outside the limit of Table No. 11A, and to ensure that producers are being treated as fairly as possible, OABA would suggest the following two optional approaches be considered to assessing moistures exceeding 35% in the 2009 corn crop.

**Option 1 - Canadian Grain Commission Published Protocol on "Estimating the Moisture of High Moisture Samples" as found in the Official Grain Grading Guide 2-10.**

If the moisture meter dial reading on a sample is higher than those on the moisture conversion table, use the following procedure to estimate moisture content. There is an example provided in **bold** to help illustrate how the calculation works.

1. Accurately, to two decimal places, weigh a sample larger than the quantity required for testing according to the appropriate sample weight for corn. **(Example 300 grams)**
2. Spread the sample on paper and let it dry at room temperature.
3. Reweigh the sample. **(Example 250 grams remaining)**
4. Calculate the percentage weight loss

   A = original sample weight **(Example 300 grams)**
   B = sample weight after air drying **(Example 250 grams)**

   *Percentage loss in weight during air drying* = $100 \times \frac{(A-B)}{A}$

   **Example: $100 \times \frac{(300-250)}{300} = 16.67$**
5. Mix the sample thoroughly.
6. Weigh the amount required for a meter test. **(Example 175 grams for corn)**
7. Determine the temperature of the sample.
8. Follow the standard procedures to determine the moisture content.
   **(Example 32.5% moisture)**
9. Determine the total moisture content of the sample using the following formula.

   C = percentage by weight of moisture loss on air drying (step 4)

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**(Example 16.67)**
D = moisture content determined by meter (step 8)
**(Example 32.5%)**

*Percentage moisture by weight* = [(100-C) x D/100] + C

**Example**
**C = 16.67** **= [(100-16.67) x 32.5/100] + 16.67**
**D = 32.5** **= [83.33 x 0.325] + 16.67**
**= 27.08 + 16.67**
**= 43.75 % moisture**

10. Report results to the nearest 0.1% **(Example record as 43.8%)**

The Canadian Grain Commission is recommending that elevators use the 'air drying method' outlined above for measuring the moisture level of the 2009 corn crop over 35%. ***This is the same method the CGC will use if they receive a high moisture sample at Chatham.***

**Option 2 - Utilizing a Linear Equation to Take the 919/3.5 Meter Reading and Convert it to a Moisture Reading**

This approach takes the standard linear equation utilized by Canadian Grain Commission's Table No. 11A and extends it to the higher moisture levels to determine an estimated moisture.

1. Take the 'dial reading' from the 919/3.5 moisture meter. Plug it into the following formula:

**919/3.5 Dial Reading X 0.383 + 10.367 = Moisture Reading**

Please note that this estimated moisture reading is based on a standard sample temperature of 22°C.

2. To further adjust the moisture for the actual sample temperature, take the moisture reading as determined above and put it into the following formula:

**Moisture Reading + [0.119 X (22 – temperature of tested sample)]**

It should be noted that this linear equation approach does not permit moisture values over 35% to be adjusted for test weight.

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