

*Red Beet Grading
Manual*

2006

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Introduction

Red Beet grades are used by the processor to determine the quality being delivered by the grower. The processor then compensates growers according to the quality of product delivered to the plant.

At the request of the industry, the role of UPGRADE CONSULTING LTD is to:

- monitor deliveries
- obtain representative samples from those deliveries
- grade in accordance with the marketing agreement
- monitor weight and tare procedures
- issue certificates on all loads received under the marketing agreement.

General Instructions

Grading staff should be aware of the following general instructions:

- Consult with your Supervisor to determine your work schedule, i.e. number of hours per day, shift, factory receiving hours, etc. Report to work promptly!
- Grade in an accurate and positive manner.
- Keep the grading area and equipment clean and orderly.
- Report any accidents at work to your Supervisor immediately, regardless of whether it is serious or not.
- Explain the final grade to a grower or processor if requested but do not discuss subjects which are not directly related to grading, i.e. cultural practices, Board or processor policies, calculation of load values, etc.
- Refer any disputes, difficult questions or challenges regarding grade interpretation to your Supervisor.
- Report to your Supervisor any incidents of attempted intimidation or undue influence by a grower or processor.
- Drinking on the job, accepting gratuities or other unacceptable behavior will not be tolerated and will be considered just cause for immediate dismissal.
- Report to your Supervisor any situation which might place you in a conflict of interest, i.e. grading a close relative/friend's beets or financial interest in a crop.
- The processor is responsible for providing washroom and first aid facilities - ask the processor for directions.

- Where possible, time breaks around the normal ebb and flow of activity around the plant.
- Remain in the general grading area - stay clear of the processing plant and associated machinery and activities.
- There will be times when it is necessary to work in the rain - rain suits will be provided. You are not, however, expected to work outside during an electrical storm.
- Your personal safety is of major importance - report any potentially dangerous situations to your Supervisor promptly - if you have reason to believe you are in immediate danger, retreat to a safe place and contact your Supervisor immediately.

Health & Safety

All staff working for UPGRADE CONSULTING LTD will receive “Occupational Health and Safety” (OH & S) and “Workplace Hazardous Materials Information System” (WHMIS) training prior to performing their duties.

UPGRADE CONSULTING LTD staff are required to work in a safe and cautious manner. As this work is conducted on processor premises, graders must follow safety and sanitation policies issued by the processor in addition to UPGRADE CONSULTING LTD policy. These policies could include the use of hard hats, safety footwear, hairnets and ear protection as well as the removal of watches and jewelry.

Staff at all times must exercise caution on processor premises and avoid any potentially dangerous equipment or activities.

Equipment

UPGRADE CONSULTING LTD responsibilities:

- Addressograph
- Grower I.D. cards
- Calculator
- Pens
- Detail Sheets
- Tags for samples
- Certificates
- Electronic scales
- Cut-off scales
- Calipers

Processor responsibilities:

- Grading table (with accurately sized holes with respect to grower/processor contract)
- Sample tubs
- May supply certified scale
- Pre-sizing equipment
- Laborer for washing, pre-sizing and lugging samples under UPGRADE CONSULTING LTD grader leadership

NOTE: Processor may supply their own staff for grading and trimming beets under the direct leadership of an UPGRADE CONSULTING LTD grader.

Receiving Loads and I.D.

- The load will be scaled in and gross weight printed on the certificate by the scale house operator.
- Write the certificate number on the detail sheet.

NOTE: Processor may have the load arriving one day prior to processing. These beets are usually padded overnight. It is the processor's responsibility to inform UPGRADE CONSULTING LTD of receiving intentions so that UPGRADE CONSULTING LTD staff may be present to witness the receipt and properly identify the loads. Samples may be drawn, tagged and secured for grading the following day.

- Loads are received in two ways:
 1. Direct - load is dumped directly into receiving hopper and processed in the plant immediately
 2. Padded - load is dumped on a cement pad (stock-piled) for future use.
- When the loads are received and padded, it is of utmost importance that the grader identify the loads in order to correlate the pile, sample and certificate accurately.
- If samples are to be obtained manually, the grader will obtain the samples necessary from the pile immediately and tag samples with a grower name and/or load number that will enable him/her to relate it to the proper certificate.

Sampling Procedures

We grade approximately 100 lbs. of beets per load.

Direct (Bin)

- Beets are elevated from the receiving pit and directed to the plant. Near the pit there is a lever which operates a trap door to divert samples of beets into a tub.
- The entire sample should not be taken in one action. Trip lever at intervals throughout the load in order to obtain a good representative sample.
- Once sampling is completed, weigh and identify the samples.
- Record sample weight on detail sheet.

NOTE: Excess debris may collect on the surface of the trap door. This material should be eliminated prior to each sample or part-sample taken. Trip door quickly, just prior to collecting any sample product. An alternate tub should be in place to collect this material.

Padded (Piles) - Manual Sampling

- Beets are dumped into a pile.
- Reference the map to identify the required beet pile.
- Using a shovel, take beets randomly from at least six areas of the pile and put them into the sample tubs.
- Be especially cautious not to draw abnormally high concentrations of mud, etc. Caution must be taken to avoid the very top of the pile and also the bottom fringes of the pile. These two areas are deemed to be unrepresentative for size and tare.
- Take beets that are truly representative of the load.
- Once the required sample amount is taken, weigh and record sample weight and identify sample.

Padded (Piles) - Hydraulic Bucket Sampling

- Beets are dumped into a pile.
- Reference the map to identify the required beet pile.
- Direct front end loader operator to the correct pile.

- The first bucket drawn from the pile will be ignored for grading purposes. The subsequent buckets may then be used for grading.
- The sample for grading can then be taken in the same manner as a direct (Bin) delivery.

Washing and Pre-Sizing

- The beets are passed through a pre-sizing mechanism. This will wash the beets, removing most of the unwanted top soil from the sample.
- The bar sizer will also sort beets into four crude size categories to help simplify the final sizing at grading time.
- It is important that all beets that enter the pre-sizer as a lot, come out of the system and remain with their respective sample.

NOTE: Any material which goes missing during washing and pre-sizing is considered tare. This represents the difference in weight between the original sample and the final, graded product.

Grading

Size

- To assist graders in sorting the beets into proper size categories, the processor will supply a grading table with a series of round holes of various sizes cut through it near the outer parameters of the table.
- The sizes (diameter) must reflect accurately the diameter agreed upon between processor and growers as they are written in the marketing agreement.
- Size is the basic criteria for pricing beets. The present sizes are as follows:

	• Option A	Option B
No. 1	1" to 1 5/8"	1 1/4" to 1 5/8"
No. 2	1 5/8" to 2 1/2"	1 5/8" to 2 1/2"
No. 3	2 1/2" to 3"	2 1/2" to 3"
No. 4	3" to 3 3/4"	3" to 3 3/4"
Oversize	over 3 3/4"	over 3 3/4"

- Beets that are smaller than 1” in diameter for Option A and 1 ¼” for Option B are considered tare.
- If the beet will sit on the 1” hole or the 1 ¼” hole without falling through, it should go to the next hole (No. 1 beet).
- The beet will fall through that hole, into a tub where all the beets of the diameter range will be collected. These are size No. 1 beets.
- All beets will be sized in this manner ensuring the beets go in the tub under the smallest hole that it will pass through.
- The largest hole is for size No. 4 beets. Any beets not passing through this hole (3 ¾” diameter) are oversize beets.

Trimming

- Beet tops are mechanically removed in the fields during harvesting. There may, however, be some trimming necessary at the time of grading, in order to meet standards for processing.
- Beets shall be trimmed so that the tops or tails do not exceed 3/8” in length. If either the tops or tails are already 3/8” or less, further trimming is not necessary. If they are over 3/8” in length, they must be trimmed to 3/8”.
- When removing the top, it is unacceptable and unnecessary to cut into the shoulder of the beet.
- It is acceptable to cut the fibrous root portion from the beet provided we do not cut into the edible portion of the root. See figures 1, 2 & 3 for clarification with reference to this section.
- All trimmings are considered tare. (See definition of M.O.B. under “Tare Categories” below)

Tare Categories

- Tare categories for beets for processing are as follows:
- Material other than beet (M.O.B.) is defined as:
 1. Foliage.
 2. Caked on and adhering dirt.
 3. Any trimmed tops so that the tops do not exceed 3/8” in length and are not trimmed into the shoulder.
 4. Any beet tails that are removed from beets that result in a 3/8” tail left on the beets.
 5. Stones.
 6. Any other material that is not beets.

- Undersize is defined as any beet that is less than 1 inch in diameter under Option A and 1 ¼” for Option B.
- Defects are defined as:
 1. Cuts, growth cracks, insect damage, shriveled, frozen, rough, misshapen, or soft beets that result in a loss of more than 10% by weight when such damage is trimmed from the beet. A beet may have more than 10% by weight cut-off, provided the defect is removed in the normal peeling process.

NOTE: Use the 10% cut-off scales to set sights. In the event of frost injury, (darker color on beet) your supervisor will monitor the situation and advise.

 2. Any beet that exhibits characteristics that are dramatically different from what is considered characteristic of the variety (off types).
 3. Any beets that have rings with a white tint that will seriously affect the quality of the processed product (the grader will be advised if a problem exists in this area).
- Decay is defined as any decay that results in a loss of more than 10% by weight when such damage is trimmed from the beet. A beet may have more than 10% by weight cut off provided the defect is removed in the normal peeling process.

Tare Summary - Tare Categories and Tare Penalties

<u>Category</u>	<u>Reject Point</u>	<u>Tare Penalty</u>
M.O.B. and Undersize	25%	x 1%
Defects	5%	x 1%
Decay	2%	x 1%

NOTE: A processor may choose to accept loads of beets that exceed the reject points.

Above information taken from the 2005 beet negotiating agreement.

Recording Information

- Note all pertinent information on your detail sheet (grower name, date, certificate number, etc.).
- Record on the detail sheet, the weights of each size category to 2-decimal place accuracy.

- Calculate the cull tare weight and record on the detail sheet. Tare includes dirt, trimmings, defective beets and undersize beets.
- Calculate a percentage for each size category and tare to two-decimal place accuracy.
- Round all percentages to whole numbers (.49 is rounded down and .50 is rounded up).
- Record all final percentages on the detail sheet.
- Transfer all information to the grading certificate (see sample).
- Sign the certificate and deliver to processor scale house.
- Processor will enter in the upper right hand corner of the certificate the gross weight, total vehicle tare and, from this, calculate delivered weight. The processor will apply the percentages from each size category to the delivered weight to determine total load value. The processor will also calculate total tare, net payable weight and net payable tons from the information supplied and insert on the grade slip in the upper right hand corner.
- Collect the UPGRADE CONSULTING LTD copies from the scale house after the load has weighed out.
- UPGRADE CONSULTING LTD will provide to the grower a completed grade slip within 24 hours of the load being graded by fax, mail or at time of delivery. The grower will specify the method of notification.

NOTE: Where the grower requests notification by fax, the processor shall supply UPGRADE CONSULTING LTD with access to a fax machine for this purpose.

- If a certificate is spoiled or an error is made, follow these instructions:
 1. Do not cancel a certificate unless all four parts are still intact.
 2. If a minor error has been made, scratch out the error, replace it with the correct figure and write your initials beside the corrected number.
 3. If a certificate is spoiled or must be replaced, write CANCELLED in large letters across the entire form, initial it and write the replacement number on it - save the cancelled certificate for your Supervisor.
 4. All UPGRADE CONSULTING LTD certificates must be accounted for.
 5. Supervisors are required to monitor the disposition of all certificates (completed and blank).
- In the event of a rejected load, make sure that the UPGRADE CONSULTING LTD copy of the certificate is retained as a record of the occurrence.

Appeals

Original Grade

- refers to the grade applied to every contracted load of red beets for processing.

- this grade is used to determine the growers payment for that load.

Re-Grade

- entire load must still be intact.
- grading procedure repeated in it's entirety.
- original grade is cancelled.
- grower and processor are each entitled to a re-grade (both re-grades are averaged).
- a re-grade is not normally an option because the load is usually processed by the time that the original grade is available.

New Grade

- applies when a portion of the load is still available for grading.
- a new sample is selected on the remaining portion - the full grading procedure is conducted and a certificate is completed. This represents the official grade on the balance of the load.
- The original grade applies to the portion that has already been received and processed.

NOTE: The load weight must be adjusted to compensate for the splitting of the load into two parts - write "NEW GRADE" on the certificate and write down the certificate number of the original grade as a reference.

- the grower and processor are each entitled to a new grade.
- new grades must be requested within two hours from the time of the original grade.

Appeal Grades

- an appeal grade may be requested when a grower or processor questions the grader's interpretation of the quality standards and procedures.
- appeal grades must be conducted by a Supervisor with the request made by the dissatisfied party within three hours from the time of the original inspection.
- the graders repeat the sampling and grading procedure under the direct care and control of the Supervisor - another certificate is issued to cover the load - there is no averaging of weights - the appeal grade is final.

- in order to qualify for an appeal grade, the complainant must be able to identify a particular discrepancy in the grading - ordinarily this means the dissatisfied party has knowledge of the actual grade and a valid question has been raised.
- Appeal grades are not meant to provide a last chance means of improving or lowering a grade.

Grading Exemptions

The Marketing Agreement for beets requires that all loads of red beets be graded. However, extenuating circumstances may develop and a sample may not be available for grading.

Every effort must be made to obtain a sample for grading. In the rare cases where a sample cannot be taken, the following options apply:

Averaging Provision

- the Average Provision may be used to alleviate a number of unusual circumstances:
 1. shortfall of deliveries
 2. equipment breakdowns
 3. extreme scheduling difficulties
 4. temporary unsafe working conditions
- before applying this contingency plan, make sure the processor and grower are aware of the situation. There should be a mutual understanding of the reason for taking this action.
- to exercise the Averaging Provision, the grader makes out a certificate and the words “AVERAGING PROVISION” are marked in large letters over top of the grade defect section . The grader’s signature is also entered.
- this confirmation allows the processor to purchase the ungraded load based on the average of that grower’s previous two loads.
- if possible, refer to your detail sheets to obtain the grade data from the previous two loads - add the weights together for each category and divide by two to obtain the average weight - calculate the percentage in the usual manner - mark the information on the certificate.
- this provision may be used for a period of two hours if it was caused by a shortfall in deliveries (usually weather related).
- if the problem is caused by a breakdown in grading equipment, the time limit is extended to a maximum of eight hours.
- the Averaging Provision may also be used to alleviate temporary drastic circumstances (i.e. during a lightning storm) where it is not feasible or safe to obtain a sample.

- keep in touch with the scale house whenever this provision is applied.

By-Passing

- under extreme conditions, UPGRADE CONSULTING LTD is authorized to invoke a special By-Pass provision.
- in this case, the grader uses the Averaging Provision but with no tare deduction. Fill in the grading section using the averaging provision, but eliminating the impact of any tare. To do this calculate the percentage weight of each category by using the average of the weight contained in the previous two loads and divide by a denominator that is the average of the total usable weight (Number 1, 2, 3, 4 and oversize beets). As a result, the percentages that are inserted on the by-passed grade slip should total 100, resulting in a cull tare percentage of zero. Write the word “BY-PASSED” in large letters and sign the certificate.
- the processor is then obligated to pay the full contract price for the load, as indicated by the breakdown calculated.
- The By-Pass Provision may be used if the grading facilities are deemed to be “unsafe” (that is, an imminent potential risk exists). In such cases, the grader will remain on duty in a safe location - the loads are not graded but a certificate is completed as previously described to record the occurrence.
- The By-Pass Provision may also be used if there is undue interference in grading by the processor or grower. In a case where the grower is interfering, the load will be rejected. Consult with your Supervisor first.

NOTE: Whenever a grading exemption occurs, the grader must still complete a certificate to document that the load was received by the processor. All instances must be reported to the office promptly and a special report will then be assembled.