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The basic principles of wheat marketing—part 2

G L. Sutton
Department of Agriculture

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THE BASIC PRINCIPLES OF WHEAT MARKETING

Part 2—The Marketing Systems of the Three Major Wheat Exporting Countries

By G. L. SUTTON, former Director of Agriculture, Western Australia.

HAVING set out the principles upon which sound wheat marketing systems are based, those of the U.S.A., Canada and Argentina are now to be briefly described so that it may be seen how these great wheat-exporting countries have dealt with their wheat marketing problems. It is felt that an understanding of their methods will provide a perspective background for a description and discussion in greater detail of the Australian wheat marketing system.

THE WHEAT MARKETING SYSTEM OF THE U.S.A.

The U.S.A. with its vast wheat producing area and diversity of climate, with many varieties and varying farm methods, has developed, consequent upon necessity and as the result of experience, a very comprehensive system of wheat evaluation.

During the development of the American grain belt each grain organisation set up its own set of standards and its own method of application. For many years, confusion resulted from the multiplicity of grading systems in use. Not only did each market, both in the interior and at the ports have its own particular system of grades administered through the local Chamber of Commerce, but many of the systems were inadequately framed. Prices inevitably reacted through such conditions to the disadvantage of the grower (3).

Fisher and Jones (3) are emphatic that “There was need for a readily understandable commercial language to express the class, quality, value and condition of indivi-
dual lots of grain so that buyers and sellers at separate points could trade without a personal examination of the grain itself or without an exchange of samples."

Finally, as a result of much investigation by the U.S. Government the Grain Standards Act was passed in 1916. A standard system of grades was set up for the whole country. The grain standards under this Act were revised in 1933 and became effective on July 2, 1934.

The Grain Standards Act provides for the Federal supervision of grain grading, and all grain inspectors, whether employed by State authorities, trade organisations, or acting as independent practitioners for fixed fees were obliged to hold licences from the Federal Government.

Most of the licensed inspectors are employed by the States or by trade organisations and are paid salaries by the agencies that employ them. Some licensed inspectors work independently for fees paid by those who use their services. No licensed grain inspectors are employed by the Federal Government.

Under the U.S.A. grading system there are seven "Baking Quality" classes effective as from 1st October, 1937, (7), the general "strength" of which is indicated by the type of wheat grown. The seven classes are broken up into 18 sub-classes as hereunder.

**US. GRAIN STANDARDS FOR WHEAT.**

<table>
<thead>
<tr>
<th>Class</th>
<th>Sub-Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td>Hard Red Spring</td>
</tr>
<tr>
<td>Class II</td>
<td>Durum Wheat</td>
</tr>
<tr>
<td>Class III</td>
<td>Red Durum Wheat</td>
</tr>
<tr>
<td>Class IV</td>
<td>Hard Red Winter Wheat</td>
</tr>
<tr>
<td>Class V</td>
<td>Soft Red Winter Wheat</td>
</tr>
<tr>
<td>Class VI</td>
<td>White Wheat</td>
</tr>
<tr>
<td>Class VII</td>
<td>Mixed Wheat</td>
</tr>
</tbody>
</table>

(All mixtures not provided for in Classes I to VI)

Despite this detailed classification of U.S.A. wheat according to the strength of its types, Fisher and Jones point out (3) that the finest parcels of wheat are always in special demand by the U.S. mills which are located on the many points of the routes of the wheat from the plains to the coasts and from which the wheat is drawn to meet the requirements of the U.S.A. trade. These mills are prepared to pay premiums for wheat of good quality protein content above the normal. In consequence a good deal of "skimming" takes place and to a far greater extent than in Canada. The extent of the "skimming" is naturally greater on the routes through the more populous industrial area.

Each "baking quality" sub-class is divided into five numerical "milling value" units or grades. These are placed in order of their value as illustrated hereunder in the table showing the grades for each of the sub-classes of Hard Red Winter wheat (7):

**GRADES FOR THE SUB-CLASSES OF HARD RED WINTER WHEAT**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total. Heat Damaged.</td>
<td>Total Other than Cereal Grains.</td>
<td>Total. Durum and/or Red Durum.</td>
</tr>
<tr>
<td></td>
<td>lb.</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>60</td>
<td>2</td>
<td>0.1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>58</td>
<td>4</td>
<td>0.2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>56</td>
<td>7</td>
<td>0.5</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>54</td>
<td>10</td>
<td>1.0</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>51</td>
<td>15</td>
<td>3.0</td>
<td>7</td>
</tr>
</tbody>
</table>
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- 16 Disc ... cuts 6ft.
- 20 Disc ... cuts 7ft. 6in.

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For reasons given earlier (page 454), 41b. should be added to the bushel weights figures to make them comparable with English practice.

In each sub-class there is also a "sample" grade; this is the term applied to wheat in any class which does not reach the requirements of any of the numerical grades or which has any commercially objectionable foreign odour except that of "smut", "garlic" or "wild onions" or which is infested with live weevils or other insects injurious to stored grain or distinctly of low quality or contains small inseparable stones or cinders. Wheat may be placed in the sample grade if its moisture content is above the limit specified for "Tough" wheat.

Each of the "milling value" units may in consequence be endorsed as "Tough", "Weevilly", "Smutty", "Garlicky", "Ergotty" or "Treated". There are thus a possible 648 grades. In actual operation of this system is not nearly as complicated as the number of grades would indicate, for in practice the number of grades in any particular district is relatively small.

Details of the complete wheat marketing system of U.S.A. are set out in diagrammatic form on this page.

The American official definition of dockage is (7):

"Dockage includes weed seeds, weed stems, chaff, straw, grain other than wheat, sand, dirt and any other foreign material which can be removed readily from wheat by the use of appropriate cleaning devices; also undeveloped and small pieces of wheat kernels removed in properly separating the foreign material and which cannot be recovered by properly re-screening or recleaning.

"The quantity of dockage shall be calculated in terms of percentage based on the total weight of the grain including the dockage. The percentage of dockage so calculated shall be stated in terms of whole per cent. and when less than 1% shall not be so stated. A fraction of a per cent. shall be disregarded. The word dockage together with the percentage thereof shall be added to the grade designation." (7.)

Dockage is, in effect, the unmillable material found in commercial wheat. Commercial wheat is a term used to describe the mixture of millable wheat and unmillable material usually found in parcels of wheat offered for sale. Most of the unmillable material (except straws and unthrashed heads) will pass through the meshes of a two millimetre sieve similar to the screenings sieve found in harvesting machinery. An Australian dockage tester is designed on this basis. Some of this inseparable matter, such as corncockle, may be objectionable for various reasons when present to any appreciable extent in mill-feed, hence the amount of such inseparable matter is specified in the grain descriptions.

The determination of the bushel weight is upon the "dockage free" wheat, all other determinations are upon the basis of the grain including dockage.

The term “damaged kernels” does not refer to simple mechanical damage but to what may be called biological damage. The following are examples: frosted, fungus-covered, or heat-damaged wheat; grain with mouldy germs; scabby, sprouted, stack-stained or weevil-bored grain. (3.)

It will be noted that, broadly, the value of each grade of this milling quality class Hard Red Winter wheat and also other classes is based upon the amount of sound millable grain it contains and the bushel weight of that grain. For instance, the top grade No. 1 has a minimum bushel weight of 60lb. per Winchester bushel (64lb. per Imperial bushel) and the maximum percentage of sound wheat. The lowest numerical grade, No. 5, has the lowest bushel weight of 51lb. per Winchester bushel and the lowest minimum percentage of sound

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**AMERICAN WHEAT MARKETING SYSTEM.**

**American Wheat.**

<table>
<thead>
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</tr>
<tr>
<td>Baking quality sub-classes</td>
<td></td>
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<tr>
<td>Milling value Grades</td>
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</tbody>
</table>

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583

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Journal of agriculture Vol. 2 1953
wheat. It is stated officially that theoretically this means that the absolute lowest permitted percentage of sound millable wheat in this grade is 78 per cent., the balance being made up of 15 per cent. damaged kernels and seven per cent. foreign material.

Fisher and Jones (3) emphasise that "It may be taken quite definitely that what differences in quality there are between the numerical grades are in respect of Milling Value only and not of strength or a Baking Quality."

All receivals are examined for moisture content, and if graded as other than “Dry” are classified as “Tough” or “Sample”—the latter term being applied to wheat containing more than the allowable maximum percentage for the “Tough” grade.

Experience has shown that wheat containing more than a certain amount of moisture will not keep in sound condition. On this point Duly writes (5), “The factors which control the condition of grain in storage are the following: The percentage of moisture in the grain, the length of time in store, the average temperature and the humidity of the air which has access to it.”

"The first named factor (moisture content), however, is the only predisposing cause, the others simply governing the extent of the damage and the rate at which it progresses."

He also states: “It is easy to show that dry grain does not develop heat but as the moisture content is increased, a point is reached, usually at about 13.5 to 14 per cent. above which every slight addition of moisture is accompanied by a marked increase in the heat developed.” Further, “It has been observed that, with regard to wheat, flinty grain can safely carry a slightly higher percentage of moisture, without subsequent damage to the grain than soft wheat.” Thus for “Hard Red Spring” the maximum moisture content in No. 1 wheat is fixed at 14.0, whereas for Winter Wheats (soft) it is fixed at 13.5 per cent.

In the table hereunder are the maximum and minimum limits for “Tough” wheat (2).

<table>
<thead>
<tr>
<th>Class of Wheat</th>
<th>Moisture Content of Tough Wheat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In Excess of</td>
</tr>
<tr>
<td>“White” wheat and “Mixed” wheat in which these classes predominate</td>
<td>14-5</td>
</tr>
<tr>
<td>“Hard Red Spring,” “Durum,” “Red Durum” and “Mixed” wheat in which these classes predominate</td>
<td></td>
</tr>
</tbody>
</table>

If the moisture content of the wheat is higher than that prescribed for “tough” wheat, it is placed in the “sample” grade.

In the U.S.A. the milling value units are called “grades”. This is also the case in Argentina and Canada and in consequence the wheat marketing systems of these countries are known as “grading” systems.

The wheat marketing system of the U.S.A. provides that the KIND of flour the wheat will produce will be indicated by its baking quality class and the QUANTITY of flour the wheat will produce by its milling value grade. The principle of selling wheat according to its utility values is thus recognised.

THE CANADIAN WHEAT MARKETING SYSTEM

Of the four great wheat-exporting countries, Canada, U.S.A., Argentine and Australia, Canada is the greatest wheat exporter.

Because of this and because of the tremendously long distances the export wheat has to be transported with possible transference en route, the handling of grain in bulk and an official wheat grading system became essential and, to ensure the greatest efficiency the Canada Grain Act was passed. This Act is administered by a Board consisting of a Chief Commissioner and two other Commissioners responsible to the Minister for Trade and Commerce (8).

The Grain Commissioners have complete power to grade all grain in accordance with the grades prescribed in the Act. For this purpose, inspectors are appointed who are employees of the Board. The Board restricts the transportation of grain except from or to the elevators licensed by them. Certificates for export wheat from terminal elevators are issued by the Board; its quality is according to the grading of the Board’s inspectors and must be accepted by buyers as final and is not subject to arbitration at the port of discharge.

In addition to its other duties, the Board operates for the Department of Trade and Commerce six public terminal elevators situated at Port Arthur, Moose Jaw, Saskatchewan, Lethbridge, Edmonton and Calgary.

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Fig. 21.—From the farm to the miller at home or abroad, Canadian wheat is always handled in bulk rather than in bags. Great economies in handling costs are thus effected. Here the wheat is being transferred from the grain-box of a giant combine harvester to a motor truck for conveyance to the country elevator.
Four types of grain elevators are licensed; there are—
1. Country Elevators (public or private).
2. Terminal Elevators (public, semi-public or private).
4. Eastern or Transfer Elevators.

Country Elevators include all elevators and warehouses which receive grain before such grain has been officially inspected and which are situated on a railway right-of-way.

Private country elevators cannot receive grain for storage; the grain in them must have been purchased by private treaty and owned by the proprietor of the private country elevator.

Public country elevators may receive grain either for sale or for storage. If for sale, the farmer accepts the grade and the price to be paid as determined by the elevator operators. If for storage the farmer may decide to accept the grade as determined by the elevator operator, or he may deliver it subject to the grade and dockage as fixed by the Commissioners' inspector at Winnipeg. The farmer may wish to preserve the identity of his own grain and may then request the elevator operator to store his grain in a special bin.

Many farmers are desirous of having their grain cleaned at the elevator to reduce freight charges and to have the screenings to feed on the farm. To meet this need elevators are being equipped with cleaning machinery, but even where elevators are so equipped the cleaning of grain is optional with the operator.

Terminal Elevators: There are three classes of terminal elevators, namely, public, semi-public and private.

Grain cannot be received into or shipped from terminal elevators unless such grain has been inspected and graded by a duly authorised grain inspector on the staff of the Grain Commissioners. Terminal elevators are also required to clean all grain on which the inspector has set a dockage, except under special circumstances when the grain is cleaned only at the request of the owner.

Fig. 22.—The Canadian farmer brings his wheat by truck to the country elevator, where it is stored until it can be loaded into railway box cars. Country elevators, such as this one, are situated at every town and village along the railway lines, where they break the unending flatness of the Canadian prairie skyline.

Fig. 23.—This photograph shows the largest of the 24 terminal elevators at the twin Lakehead cities of Fort William and Port Arthur. This elevator at Fort Arthur, Ontario, has a storage capacity of nine million bushels and can load three average grain ships simultaneously in less than ten hours. About 220 million bushels of grain can be stored in Canada's terminal elevators.
In public elevators grain can be stored only with grain of the same grade; no mixing whatever can be carried out by the operators. In semi-public elevators the non-mixing of grain is restricted only to the first four grades as set out in the schedule of the Canada Grain Act.

Private terminal elevators cannot do a public storage business. The grain handled in these elevators is the property of the licensee. Mixing can be carried out as in semi-public elevators.

Mill Elevators are those operated in the eastern division of the wheat belt and are operated by persons engaged in the business of manufacturing grain into some other products. No grain can be received in these elevators unless it has been purchased or grown by the licensee, nor can grain be discharged from such elevators otherwise than for consignment to a manufacturing plant operated by the management of such elevator.

Eastern Elevators: These elevators are situated east of Port Arthur at inland ports on the Great Lakes or on the St. Lawrence River or at Atlantic seaboard ports. These are merely transfer houses being part of the transportation system and are equipped to transfer grain which has already been officially graded and cleaned.

In Canada, the pattern of wheat evaluation is similar to that of the U.S.A. As in that country, the buyer is advised of the strength or baking quality of the wheat by the name of the class in which it is placed, its milling value is indicated by a unit of that class to which it is assigned and which is also called a "grade". Thus as in U.S.A. the Canadian system of wheat marketing is a "grading" system.

The Canadian Grain Act prescribes the wheat grades which operate uniformly throughout the wheat marketing system of the Dominion.

Practically the whole of Canada's wheat is grown in the three prairie provinces of Manitoba, Saskatchewan and Alberta, only three per cent. of her crop being grown in the rest of the country. Canada's position as a prime wheat exporter is held through one type of wheat only. A Hard Red Spring type, known as Manitoba. It is so known, not to imply that it is grown now in the province of Manitoba only, but because the name is part of the official designation under their grading system (3). Typical Manitoba of high grade has been for many years the strongest wheat in commerce (3).

Due to the fewer varieties being grown and less variation in farming practice and in the climatic conditions of the Canadian wheat belt, there are fewer statutory "baking quality" classes and "milling value" grades of those classes than in the U.S.A. These are as hereunder (9):

<table>
<thead>
<tr>
<th>Canadian Statutory Wheat Grades</th>
<th>Grading Value Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baking Quality</td>
<td>Milling Value</td>
</tr>
<tr>
<td>Red Spring Wheat</td>
<td>6</td>
</tr>
<tr>
<td>Garnet Wheat</td>
<td>3</td>
</tr>
<tr>
<td>White Spring Wheat</td>
<td>4</td>
</tr>
<tr>
<td>Winter Wheat</td>
<td>3</td>
</tr>
<tr>
<td>Amber Durum Wheat</td>
<td>6</td>
</tr>
<tr>
<td>Red Durum Wheat</td>
<td>1</td>
</tr>
<tr>
<td>Mixed Wheat</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>29</td>
</tr>
</tbody>
</table>

There are six statutory grades in the "Red Spring Wheat" baking quality class; these are named "No. 1 Manitoba Hard" and Number 1, 2, 3 and 4 Manitoba Northern and No. 4 Special, in descending order of merit.

The statutory standards are permanent. The Grain Commissioners emphasise (8) that if, in any year, through drought, rust, frost or other damage, the greater proportion of the crop is not of high quality the statutory standards for the grades of that year are not lowered in accordance with the poorer quality of the whole crop, but are still maintained at the same level, the difference in the quality of the crop being reflected in the smaller percentage of the total graded in the higher grades. Owing to climatic conditions the characteristics of the grain produced may vary from year to year and in actual appearance the standard sample of a certain grade may appear to be different from the standard sample of the same grade in the previous year, but the actual baking quality and milling value (or commercial value) of the standard sample of any grade of wheat is, as nearly as is practicable, the same from year to year.

The Act also provides for other than the statutory grades. These are called commercial grades and are to be defined each year according to standard samples selected for the purpose. As Fisher and Jones (3) point out, the idea is that the quality of the crop in any given year is uncertain and variable owing to the possibility of drought, early frost, rain at the wrong time, etc. To provide for these contingencies it is the function of the commercial grades to deal with the grading of that part...
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### SCHEDULE ONE.

**STATUTORY GRADES OF WESTERN GRAIN.**

**Red Spring Wheat.**

<table>
<thead>
<tr>
<th>Grade Name</th>
<th>Minimum weight per measured bushel in pounds</th>
<th>Variety</th>
<th>Minimum percentage by weight of hard vitreous kernels</th>
<th>Degree of Soundness</th>
<th>Maximum Limits of Foreign Material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Foreign material other than wheat.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Matter other than cereal grains.</td>
</tr>
<tr>
<td>No. 1 Manitoba Hard</td>
<td>62</td>
<td>Marquis or any variety equal to Marquis</td>
<td>80</td>
<td>Sound and well mature</td>
<td>Free</td>
</tr>
<tr>
<td>No. 1 Manitoba Northern</td>
<td>60</td>
<td>Marquis or any variety equal to Marquis</td>
<td>65</td>
<td>Well matured, practically free from damaged kernels</td>
<td>Practically free</td>
</tr>
<tr>
<td>No. 2 Manitoba Northern</td>
<td>58</td>
<td>Marquis or any variety equal to Marquis</td>
<td>50</td>
<td>Reasonably well matured, reasonably free from damaged kernels</td>
<td>Practically free</td>
</tr>
<tr>
<td>No. 3 Manitoba Northern</td>
<td>57</td>
<td>Any variety of Red Spring Wheat of fair milling quality, excluding Garnet</td>
<td>35</td>
<td>Excluded from higher grades on account of lightly frosted, immature or other light damage, reasonably well matured</td>
<td>Reasonably free</td>
</tr>
<tr>
<td>No. 4 Manitoba Northern</td>
<td>56</td>
<td>Any variety of Red Spring Wheat excluding Garnet</td>
<td>...</td>
<td>Excluded from higher grades on account of frosted, immature or other damage, reasonably well matured</td>
<td>Reasonably free</td>
</tr>
<tr>
<td>No. 4 Special ...</td>
<td>53</td>
<td>Any variety of Red Spring Wheat</td>
<td>...</td>
<td>Rusted or shrunken but otherwise reasonably sound, reasonably well matured</td>
<td>Reasonably free</td>
</tr>
</tbody>
</table>

**Garnet Grades.**

<table>
<thead>
<tr>
<th>Grade Name</th>
<th>Minimum weight per measured bushel in pounds</th>
<th>Variety</th>
<th>Minimum percentage by weight of hard vitreous kernels</th>
<th>Degree of Soundness</th>
<th>Maximum Limits of Foreign Material</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Foreign material other than wheat.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Matter other than cereal grains.</td>
</tr>
<tr>
<td>No. 1 Canada Western Garnet</td>
<td>60</td>
<td>Garnet</td>
<td>75</td>
<td>Well matured, practically free from damaged kernels</td>
<td>Free</td>
</tr>
<tr>
<td>No. 2 Canada Western Garnet</td>
<td>58</td>
<td>Garnet</td>
<td>60</td>
<td>Reasonably well matured, reasonably free from damaged kernels</td>
<td>Practically free</td>
</tr>
<tr>
<td>No. 3 Canada Western Garnet</td>
<td>57</td>
<td>Garnet</td>
<td>35</td>
<td>Excluded from higher grades on account of lightly frosted, immature or other light damage, reasonably well matured</td>
<td>Practically free</td>
</tr>
</tbody>
</table>
of the crop which in that particular year falls outside the requirements of the fixed statutory grades.

Typical Manitoba of high grade has been regarded for many years as the "strongest" wheat in international trade. This reputation was achieved, firstly, by the almost universal cultivation of "Red Fife" in the three prairie provinces in which the bulk of Canada's wheat is grown. Between 1907 and 1911 the variety "Marquis" which is quite as strong as "Red Fife" and matures in a shorter time was developed and has superseded "Red Fife". It has become the standard of high quality in the Canadian grading system. "Marquis" is still the standard for quality though it is no longer the dominant variety. It has been displaced by varieties more resistant to rust. In order of importance the varieties now are "Thatcher", "Rescue", "Redman", "Marquis" and "Saunders".

In 1926 an earlier variety named "Garnet" was introduced into cultivation. It was expected that it would be as "strong" as "Marquis" but experience proved that this was not so. Because the inclusion of its grain with that of the stronger varieties depressed the strength of the top grades, a special class was provided for "Garnet" with its own three grades.

As being characteristic of the details by which the different grades in the Canadian marketing system are defined, Schedule I of the Canada Grain Act is set out on page 589. In this schedule the six grades of the class "Red Spring Wheat" (Manitoba grades of Western grain) and the three of "Garnet" wheat (Garnet class) are defined (9).

It will thus be seen that the top grade of Red Spring Wheat (or Manitoba class) must contain only the strongest varieties and the largest percentage of vitreous kernels, all the wheat must be sound and free from foreign material and grains of other classes or varieties. It thus conforms to the greatest extent to the strength requirements of its baking quality class. This grade has also the highest bushel weight with consequently the highest flour yield and greatest milling value. Bushel weight of the millable grain, the content of hard red kernels and relative soundness are the chief factors in determining the statutory grades and so as the grades decline, the required percentage of hard vitreous kernels and sound grains becomes progressively smaller, and normally the protein content and strength will also tend to fall. The bushel weight of the millable grain also falls progressively with a consequential decline in the flour yield.

It is to be noted that the grades are those of dockage free wheat. The prescribed bushel weights are therefore those of the millable grain as obtained on a Boerner Imperial Quart Chondrometer. As explained previously on page 454, 2lb. must be added to the weights given in the schedule if it be desired to compare them with those obtained on the English "Avery" or Australian "Standard" chondrometer.

Canadian Hard Red Wheats are the standard for strength in the International wheat trade and, because of this there is a belief in some quarters that strength is associated with redness and hardness. This is not so. "Although some commercial red wheats are stronger and harder than some white wheats, colour, hardness and strength are in no way necessarily connected. White wheats are known which are as strong as any red" (3). Typical Australian instances are Comeback, Jonathan and Pusa 4.

The climatic conditions in the western belt of Canada are responsible for a problem in connection with the moisture content of its wheat, which, as stated previously, will not remain sound unless it is dry. For instance, in 1951 all the Manitoba crop was not harvested before the snows fell and this wheat remained under the snow all the winter. Obviously its moisture content had increased during that time and exceeded that of "dry" wheat as provided for in the grades and which should not exceed 14.5 per cent containing more than 14.5 per cent. moisture is designated "Tough" or "Damp". The moisture content of these grades is set out hereunder.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Moisture Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tough</td>
<td>Over 14.5%</td>
</tr>
<tr>
<td>Damp</td>
<td>Over 14.5%</td>
</tr>
</tbody>
</table>

A similar pattern is followed in fixing the "commercial" grades and so the CANADIAN WHEAT MARKETING SYSTEM OF THE U.S.A., IS BASED UPON THE PRINCIPLE OF ASSESSING THE VALUE OF ITS WHEAT ACCORDING TO ITS UTILITY VALUES OF "BAKING QUALITY" AND "MILLING VALUE".

THE WHEAT MARKETING SYSTEM OF ARGENTINA

Prior to the 1947/1948 harvest the baking quality of Argentine wheat was indicated by the region in which it was grown and given a trade name (usually a composite one) associated with the port from which it was shipped. Thus wheat grown in the regions Rosaria and Santa Fe and shipped from Rosario was known as "Rosafe" wheat. The varieties Barletta and Russo grown west of Buenos Aires, and usually shipped from that port were named "Baril". Then some varieties grown further south and shipped from Bahia Blanca were known as "Barusso" (or sometimes as B.B.R.R., an abbreviation from Bahia, Blanca, Barletta, Russo). A fourth class known as Entre Rios was grown in the province of that name.

Its milling value was based upon a monthly F.A.Q. standard with a guaranteed bushel weight of millable grain and according to a scale of allowances to be made to the buyer in respect of departure from that bushel weight.

For some years the Argentine Ministry of Agriculture had been contemplating a change in respect of departure from that bushel weight. For some years the Argentine Ministry of Agriculture had been contemplating a change to improve the status of its exported wheat and the lot of the growers (3). Eventually, legislation was introduced setting up a simple grading system to come into effect for the 1947-1948 harvest (12). This system provides for
three “baking quality” classes; these are “Hard” (Strong), “Semi-Hard” (Medium Strong) and “Soft” (Weak). Suitability for the baking quality classes is determined by varieties officially approved for the respective classes. For the “Hard” baking quality class, 29 varieties are named; for the “Semi-Hard class, 27; and in the “Soft” class, there are 9.

The basic baking quality is that of the “Semi-Hard” class and parcels of the stronger “Hard” baking quality class receive a bonus or premium of three per cent. over and above the rates of the equivalent grades in the basic “Semi-Hard” baking quality class.

Each “baking quality” class has the same three grades as hereunder:
grower receives a premium of 1% per kilo, or proportional fraction thereof, and ½% per kilo for wheat weighing over 80 kilos (64 lb.) and up to 82 kilos (65½ lb.).

When the weight is less than 78 kilos (62½ lb.) and not more than 75 kilos (60 lb.) the price rate is reduced by 1% per kilo or fractional proportion thereof. When the weight is below

Fig. 27.—After the silos are covered, carbon dioxide is generated by the wheat. At the end of a month it has reached a concentration that is fatal to grain-destroying insects. When two months have elapsed, any insects subsequently hatched out have also been destroyed. In this picture, portion of the silo covering is being removed so that the atmosphere inside the silo may be tested. It will be noticed that the wheat is covered with an insulating layer of matting and then protected by waterproof material.

Fig. 28.—Grain being out-loaded by elevating machinery from a subterranean silo in Argentina.

75 kilos (60 lb.) and not greater than 72 kilos (57½ lb.) the reduction is 1¼%. Should the weight fall below 72 kilos (57½ lb.) the reduction is 2% or fractional proportion thereof.

The Argentine wheat marketing system, like those of the U.S.A. and Canada, is also a grading one. It is also in conformity with them in that payment is made in accordance with "utility values". It also embodies the principle of payment for quality, in that it provides for bonuses to encourage efforts to produce wheat of higher "baking quality" and better "milling value".

(To be concluded.)
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