The Orange Industry in Spain.

For the English and European markets Spain may be regarded as the principal source of oranges, owing to the many natural advantages she enjoys in connection with that industry. A visit to the various producing areas, reveals the fact, that, as far as commercial practices and packing house operations are concerned, conditions are often very primitive. Despite this, however, on account of the nearness to the markets, adequate and cheap transport oversea, good growing conditions and relatively cheap labour, coupled with the fact that the fruit finds a ready market during normal seasons, Spain has a large export trade. Fortunately for the South African grower the competition with Spain on the above-mentioned markets is at present very small, because of opposite seasons. Only a certain amount of overlapping takes place at the termination of both seasons.

Mr. M. van der Hoek, of the Division of Economics and Markets, recently visited Europe and America in connection with the marketing of fruit and other matters. In the present article he gives a brief account of the citrus trade of Spain, which will interest citrus-growers in this country, especially in regard to the Spanish methods employed as compared with our own, in supplying a market common both to Spain and South Africa.

The exports (severe inspection this year prevented the export of frozen oranges with the result that the total export will be equivalent to about 6,000,000 half cases according to estimates for the 1926/27 season.) Small tramp steamers carry the fruit in ventilated hold to the principal Continental ports, and a certain amount is transported wrapped, but loose in trucks, to the nearby French and German markets.

The Harvesting Season.

The Spanish orange groves are generally very small, from 3 up to 12 acres. Orichards in bearing today are worth £250–£450 per acre according to the locality where situated. Generally the grower owns his orchard and lives in a nearby village, and is supported in his orchard work by his family. The varieties are classified commercially under the following headings: "Whites", "Bloods" and "Blood Ovals". These consist, especially those classified under the term "Whites", of a large number of varieties and strains.

The harvesting season usually extends from end October till June. From November till 15th May the heaviest shipments take place, more so from January onwards. The Veinia Imperialis is a variety which has become popular in certain sections owing to its late maturing qualities, remaining on the market till the end of July.

Cultural Methods.

The soils in the various orange growing areas vary from a sandy soil near the foothills to a clayey loam type. The trees are planted from 16 to 20 feet apart, generally pruned heavily so as to allow plenty of air and sunshine, and are smaller in stature than the trees in South Africa. For man labour the wages amount to 4/- per day: for a woman 1/-9.

Old System of Cultivation.

In March, after picking operations have ceased, the ploughing commences. The plough is a very simple wooden structure with a reversible mould-board. The depth ploughed is from 24 to 5 inches, and it is done only once a year. Cultivation is done by hand with nuttocks.

Owing to the uncertainty and small rainfall irrigation is necessary. The system today in use in Spain was introduced by the Moors, many centuries ago and is still in operation in many places. Gravity irrigation is the principal method, the water being conducted through masonry flumes. The land, usually terraced, is flooded after ridging up the soil in basin formation. A ridge round the trunk of the tree, to prevent water touching it and bringing Collar rot, is the general practice. All over the country the visitor may see roots exposed all the year round for the prevention of the disease in the belief that rotation of the roots is necessary. Many years ago kraal manure was the only fertilizer applied, but now chemical fertilizers have obtained a very firm foothold and are used heavily. A little stable manure is

[Continued on page 176.]
The Efficient Separator.

It is advisable to test the separator occasionally for efficiency in order to find out whether the machine is not losing an excessive amount of fat in the separated milk.

Should it prove that fat is being lost, then the farmer can remedy the fault. This will mean that more fat will be recovered, and, incidentally, a saving of money will be the result.

Few farmers have the necessary testing apparatus on the farm; this difficulty may be overcome by asking the local creamery manager to make the necessary fat tests.

For Correct Results:

the scale used for weighing the milk, separated milk, and cream should be accurate;
the samples obtained for testing should represent true samples of the bulk;
the milk should be separated at a temperature of not lower than 90° F.;
the separator should be turned at the correct speed as indicated on the handle of the machine.

Method of Testing the Separator.

Stir the milk thoroughly and draw a sample for testing whilst the milk is still moving. The sample must be placed in a dry bottle with a screw top lid or cork to prevent evaporation of water. This applies to all samples taken.

Separate the milk at the correct temperature and speed. Weigh the cream and separated milk and obtain samples as in the case of milk.

Example for Calculation.

Weight of milk 102 lb., fat test 3.5 per cent.
Fat in milk equals $102 \times 3.5 = 3.57$ lb. butter-fat.

Weight of separated milk 90 lb., fat test 0.2 per cent.
Fat lost in separated milk equals $90 \times 0.2 = 0.18$ lb. fat.

3.57 lb. fat in milk minus 0.18 lb. fat lost in the separated milk equals 3.39 lb. of fat recovered in the cream.

3.57 lb. fat, or total fat in milk = 100
1 lb. fat = 3.57
3.39 lb. fat = $100 \times 3.39 = 3.57$
which is 94.9 per cent.

In other words the separator has recovered 94.9 per cent. of the fat in the milk.

To cross-check the above test, the cream may be tested. In this case 12 lb. cream should be recovered, testing just over 28 per cent. butter-fat, i.e. $12 \times 28 = 3.36$ lb. butter-fat.

Adjust your Separator.

In the example given above, the cream test is too low for buttermaking or for despatch to the creamery. The cream screw should be adjusted to take from the separator a cream from 32 per cent. to 36 per cent. fat for dispatch to the creamery, and from 42 per cent. to 48 per cent. fat for long-distance travel.

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The Orange Industry in Spain—contd. from page 163.

Willowy, flexible baskets are used for picking. The fruit is dumped into “mounds” under the trees and left there to “sweat” for two or three days. It then passes into the packing house, where it is again left, for a few days, in a large spreading heap about 3 ft. deep. Packing operations are very simple. From these mounds on a straw covered floor the fruit is sorted and classified for count and quality by two operations. Then it passes to the wrappers, who wrap the fruit tightly, leaving two twists or “pig-tails” at each end. The packing of each case is done by two women who deftly arrange the fruit in the case in a straight (not diagonal) pack, while a girl feeds the case with fruit.

To the Ports.

It is then lidded by a carpenter and roped with esparto grass rope. This is used for slinging the cases in loading and discharging the boats. The only equipment noticed in a packing house is the carpenter’s simple outfit and the flexible baskets used for sorting and carrying.

The cases are carried to the station or port in deep springless carts, jolted along a cobbled road. A case usually has three compartments and is not of a standard size. No laws are laid down in connection with grades, quality or sizes and the packer thus follows his own inclination in that matter.

Taking the primitive methods of handling the fruit into account it is surprising that generally the oranges still arrive on the markets in a good condition.

During the last few years Spain has diverted its attention to the Northern markets of the Continent. In pre-war years Russia was a very important market for Spain, but at present there has only been a slight recovery in that direction. Germany, Holland and Belgium have since the war assumed a more important position. The United Kingdom has of course remained a very substantial market.