C.S.

INDUSTRIES

(Agriculture) 1922

No. 401/22

AGR/CRO/1#7

Governor

1922

15. May

Previous Paper.

SUBJECT.

POTATO DISEASE.

Provision of Potato seed by Government immune from:

Indent. No 12

MINUTES.

Minute from the Governor d. 15. May 1922 —— encl.

Draft Indent —— encl.

For letter to C.A. and S.W. for £60

Will you please substitute Great Scot for Arran Comrade as second early potato: it is especially recommended by recent leaflet issued by Board of Agriculture.

[illegible]

23 May 1922

Letter to Crown Agents dated 20th May 1922 —— encl. (2)

Indent withdrawn for transmission to Crown Agents on 23rd May 1922

Y.E.

Submitted with S.W.

[illegible] 12/6/22

Subsequent Paper.

Hon. Treasurer,

To withdraw Special Warrant No 20.

W. Baker.
for C.S. 15.6.22.

Hon: Col: Sec.
S.W. 20/22 for £60 withdrawn.

W. Thompson
Treasurer
15-6-22

S. of S. Miscellaneous Despatch of 3rd May 1922 — Encl (3)

Transferred to 466/22

Y.S.
Subscribes
The F.O. might have this Report?

16/6/22

Yes: but it will be better to register
S of S despatch in a separate series

16 June 1922

Particulars of orders placed ——— Encl (4)

Notice in U.O. 7.10.22

Y.S.
Subscribes for information

7/10/22

9 Oct 1922

Advice of Orders Placed ——— Encl (5.)

Original Advice of Shipment ——— Encl (6)

Y.S.
Subscribes

21/11/22

C.S.O. No. 401/22

Inside Minute Paper.

Sheet No. 2

H.C.S.

The seed potatoes arrived in excellent condition by S.S. Ahga & have been planted in garden at Sullivan Bros.

2. The P.S.N. Co are deserving of thanks of this Govt for care which was taken of seed on the voyage & arrangements made for its conveyance. Thanks may most conveniently be conveyed through local agent.

3. Will you also please thank Crown Agents for arrangements made for special selection of seed & for its conveyance telling them that seed was received in excellent condition.

4. Forest officer who has charge of experiment to see this paper.

5. Has Mr ~~Curran~~ (from this paper) Whether sprayers have arrived: if so I shall prepare a notice, letter, about spraying for "Blight"

J.D.

21 Nov: 1922

Forest Officer

For note and return please for above letters to be written

~~[illegible]~~ 26/11/22

H. C. S.

Noted accordingly. The two sprayers and two cases of Bordeaux mixture have been handed over to me ~~and~~ they have been unpacked. and found correct.

James Reid
Forest Officer
25/11/22

Letter to Agents P.S.N.Co. of 27.11.22 — Encl. (7)
Letter to Crown Agents of 25.11.22 — Encl. (8)

Forest Officer

Please withdraw duplicate advice of shipment

W. Barlas.
for. C. S.
4.1.23.

H. C. S.

Duplicate advice of shipment for 2 cases Bordeaux mixture, 1 case sprayers and 8 cases potatoes. withdrawn accordingly

James Reid.
Forest Officer
6.1.23.

O.I.C./P.S.O.

Will you please write to P.S.N.Co & to Hon: G. J. Turner as in draft attached.

[illegible]

2 May 1923

The experiment has done better than expected 4 bags of Kerr's Pink & 2 bags of Great Scot are available for distribution. [illegible]

C.S.O. No. 401/22.

Inside Minute Paper.

Sheet No. 3.

Letter to manager, F. I. Co. 2/5/23 Encl. (9)
Estate Williams 2/5/23 " (9)

Letter fr. Manager Est Williams 3 May 1923 (10)
" fr. -do- F. I. Co. 3 May 1923 (11)

H.E.
Submitted.
Notices will be posted on Gazette Board and on Board at C.S.O. Two copies will also be sent to both F. I. Co. & Est Williams for display in their stores. [illegible]
O.I.C./C.S.O.
4th May 1923.

O.I.C./C.S.O.
Leaflet on Blight & leaflet on Wart disease are attached: they may be useful later.

2. Will you please take action as proposed in your minute of 4th May.

3. Arrangements have been made for delivery of potatoes available to F. I. Co & [illegible] Store.

[illegible]

6 May 1923

Encls. (12), (13) & (14).

Letters to managers F. I. Co. & Estate L. Williams. 8/10/23. (15)

Letter from Manager F.I. Co of 9th Oct: 1923 – Encl (16)

Hon Treasurer,

I regret the delay in referring this paper to you. Will you please receive payment under Miscellaneous Revenue Item 10 'Sale of Stock &c'. G.R.L.B. O.i/C/Sec 12 Oct 1923

Hon. Col. Secretary,

Noted.

R.V.K. for Col. Treasurer. 15 Oct. 1923.

Letter from Col. L. Williams. 12/10/23 Encl (17)

Hon. Treasurer

Will you please say if payment has been made. G.R.L.B. O.i/C/Sec 16 Oct 1923.

Hon. Col. Secretary,

Payment received as follows:-

Col. L. Williams Tr. Rec. No. 2433 of 17th Oct.	£4. 18. 0	
Messrs. F.I. Co. .. .. .. 2434 .. 18th ..	4. 4. 7	

R.V.K. for Col. Treasurer 18th Oct. 1923

Y.E.

Submitted. G.R.L.B. O.i/C/Sec 19 Oct 1923

Has the F.O. further seed potatoes available [illegible] 19 Oct. 23

C.S.O. No. 401/22

Inside Minute Paper.

Sheet No. 4

Forest Officer.
Referred.
G.R.L.B.
O.i/c Sec
20 Oct 1923

O.i.C. Sec.

No more seed potatoes are on hand. The ground at Sullivan Ho. has been planted again, with the same varieties, so there should be a bigger quantity next year for sale.

J. Reid
Forest Officer
26th Oct 1923

Letter to Manager. F. Isloy. 29/10/23. (18)
Letter to Manager, Estate Williams, 29/10/23 (19)

H.E.
Submitted with draft notice as directed. G.R.L.B.
O.i/c Sec
16 Jany 1924

Thompson
[illegible] 16 Jan.

Public Notice of 17th Jany, 1924. (20)

Y.E.

Submitted

2. Does Y.E. wish letters written to the F.I.C. and Estate Williams asking them to sell the seed as last year?

3. During this month I regret to say that I consumed some of the potatoes growing from the seed as I had not taken note of the fact that ~~they were~~ these plants were those grown for seed purposes and sale. As the potatoes were lifted dried and sorted without expense to the Government there may not be appreciable loss

[signature] 31 May 24

H.C.S.

There is a very poor crop of potatoes everywhere this year: it will be necessary to keep a supply of seed from this stock for planting next spring but after this has been set aside the remainder, including large potatoes, should be sold to public for seed.

2. I shall be glad if letter may be sent to F.I.Co & Estate Mgr. when quantities available are known.

The misunderstanding was quite natural: you seem to have come out of it well; I regret that part of Sulivan House garden was not planted for your use.

[signature] 2 June 1924

C.S.O. No. 401/22

Inside Minute Paper.

Sheet No. 5

Minute to Forest Officer 20 June 1924 (21)

Minute from Forest Officer of 24th June 1924 - Encl (22)

Letters to F. I. C. and Williams as before

[illegible] 26 June 24

Copy of Notice — Encl (23)

Letter to F. I. Co of 1st July 1924 .. (24)

Letter to Estate S. Williams of 1st July 1924 — .. (25)

Letter from Manager F. I. Co of 2nd July 1924 — - (26)

Letter from Messrs Williams 10 July 1924 (27.)

Forest Officer,

Will you please arrange for the delivery of the seed potatoes as follows

To F.I.Co. 2 cwt Kerr's Pink and 20 lbs Great Scot.

To Est Williams ½ cwt Kerr's Pink and 15 lbs Great Scot.

E.R. Brown
for Colonial Secret[ary]

Hon. Col. Sec.

The above quantities of seed potatoes named, have been deliver[ed] today.

James Reid
Forest Officer
16 July 1924

Letter to Manager Estate Louis Williams of 21st July Encl (28)
— do — Falkland Islands Co. of 21st July Encl. (29)

Letter from Estate L. Williams of 10th Sept 1924 – Encl (30)

Ack and thank Estate Williams

~~tttttt~~ " Sept

Letter to Est Williams 12 Sept 1924 (31)

O.I.C./C.S.O.

Seed potatoes are now available for distribution approximately as follows. Great Scot 245 lbs Kerr's Pink 950 lbs.

2. Will you ask F.I. Co & Globe Store to be so good as to undertake distribution as in previous years.

[initials]

8 May 1925.

Letters to F. Is. Coy. & Estate Louis Williams, 12th May, 1925. (32.)

Letter from Falkland Islands Co Ltd of 12th May 1925 – Encl (33)

Letter from Est Williams 13 May 1925 (34)

Forest Officer

I understand it will be quite convenient for you to send the potatoes to Messrs Williams in the crates which they will supply.

2. Messrs Williams say they can...

C.S.O. No. 401/22.

Inside Minute Paper.

Sheet No. 6

take all the potatoes at one time, and it might be preferable to distribute the quantities as follows:

To West Store 700 lbs Kerrs Pink
200 " Great Scott

To Globe Store 250 lbs Kerrs Pink
75 " Great Scott

The Falkland Islands Company are quite willing to take the quantities indicated above.

3. If you see no objection to this arrangement will you please arrange for delivery of the potatoes accordingly.

G.R.L.
O.C.Sec
13 May 1925

O.C./C.S.

The above arrangements are quite satisfactory.

2 As soon as I receive the crates from Messrs Williams the potatoes will be delivered accordingly.

J. Reid
Forest Officer
16 May 1925

Lr to Esr Williams
" " F.I.Co. } 18 May 1925 (35) (36)

over

Forest Officer,

For note,

Will you please hold this paper until potatoes have been delivered.

E.R.G.R.
O.C/Sec
18 May 1925

O.C. C/Sec.

Noted accordingly.

The allotted amount of potatoes have been sent to the West Store, and about 150 lbs have been taken away by the Globe Store, leaving about 175 lbs. of the stated quantity on hand.

J. Reid
Forest Officer
1st June 1925

Hon Treasurer,

Would you be so kind as to say what sums were received from G.L.E. & Messrs Williams in payment of potatoes sold in 1924.

E.R.G.R.
O.C/Sec
1 June 1925

O/c Sect.

C.S.O. No. 401/22

Inside Minute Paper.

Sheet No. 7

Hon:Col:Sec;

I am informed by the First Clerk in the Treasury, that it is not possible to say, with any degree of accuracy, what sums were paid into the Treasury in respect of the "Sale of seed potatoes", as these amounts were credited to Head VIII in Estimates,(9) "Sale of Stock", together with receipts in respect of sale of other produce, when paid in from time to time, by the Stock Department,as explained in Encl:(38), and referred to in Colonial Regulation 269.

2. On the other hand, if the Collector of this revenue (Col:Reg:269) will kindly furnish, from his accounts, the dates on which such sums were paid into the Colonial Treasurer, with the amounts so paid, the statement of detailed schedule or abstract will be verified, and returned.

W.A. Thompson
Colonial Treasurer
4th June 1925.

Letter to Manager, G. S. Co, 18/6/25. (40)

Hon Treasurer,

Will you please ~~take~~ receipt of the sum of £4. 14/9. from Estate L. Williams in payment of Seed potatoes sold. at Globe Store on behalf of Government.

[illegible]
for C.S.
20/XII/25.

Hon. Sol. Gen:

The sum of £4=14=9, as
been paid on Treasury Rec: No: 1483 of 22/12/25.

A. E. Thompson
Treasurer
22/12/25

Treasury Receipt No. 1487 of 23 Dec 1925.

V. #
8/5/37

DATE....................

From Governor to Colonial Secretary.

COLONIAL SECRETARY'S OFFICE * FALKLAND ISLANDS * 13 MAY 1922

1

There is a general wish that the Govt. should take measures for the provision of potato seed which is immune from wart disease & for the prevention of spread of black rot. Both diseases are prevalent in Stanley. I have discussed the matter with many of those who have long experience in growing potatoes & most recently with the Hon: G. I. Turner

2. The Hon: W. A. Harding has been good enough to place at the disposal of Govt a part of garden at Sullivan House for raising seed & a shed in which the seed can be dried & stored.

3. In prevention of black rot it will be necessary to spray.

4. Will you please have indent prepared for articles in attached list.

5. In forwarding indent to Crown Agents will you please ask them

(a) To explain to Messrs Dobbie that ~~[illegible]~~ (1) it is intended for the raising of seed immune from wart disease for planting in gardens in which both these

disease & blackleg are prevalent.

(2) Kerrs Pink have been grown with good success & that no wart disease has been observed in this variety. That in addition to this variety a good "Second-Early" ~~Third Early~~ variety is required which is guaranteed as free from wart disease.

(b) To request Messrs Dobbie to select the seed specially to pack it carefully & to arrange for shipment without fail by S.S. Orga on 12th October.

(c) To make arrangements with P.S.N.Co for carriage of seed in vegetable chamber of S.S. Orga & for its being stowed away from the pipes.
(I have spoken to Capt Daniel S.S. Orga & he tells me that this could be arranged if asked for)

6. I estimate that Expenditure up to 31st December will amount to about £60. I mentioned this sum to Mr Turner & he did not consider it excessive: it is intended to include cost of inspector, labour, purchase of manure etc etc.

7. A special warrant may issue under Head Miscellaneous "Prevention of Potato disease & provision of ~~[illegible]~~ seed."

[initials] 15 May 1922

(2)

401/23

20th May, 23.

Gentlemen,

I am directed by the Governor, with reference to Indent No. 123 forwarded to you by this mail, to request you to be good enough to carry out the following instructions relating thereto:-

(a) To explain to Messrs Dobbie that it is intended to raise seed immune from Wart disease for planting in gardens in which both that disease and Black Rot are prevalent.

(b) Kerr's Pink have been grown with good success and no Wart Disease has been observed in that variety; that in addition to Kerr's Pink a good "second early" variety is required which is guaranteed as free from Wart Disease.

(c) To request Messrs Dobbie to select the seed specially, to pack it carefully and to arrange for shipment without fail by s.s."Ortega" on the 13th October.

(d) To make arrangements with the Pacific Steam Navigation Company for the carriage of the seed in the vegetable chamber of the s.s."Ortega" and for its being stowed away from pipes.

I am,

Gentlemen,

Your obedient servant,

Colonial Secretary.

Agents for the Colonies,

Millbank, Westminster,

London, S.W. 1.

Quadruplicate.

FALKLAND ISLANDS.

* *Give No. and date to be used in correspondence with the Crown Agents.*

† *Brief description of the goods required.*

‡ *Department of the Colonial Government ordering the goods.*

*Indent No.** 125 *Date** 19th May, *19* 22.

Indent on the Crown Agents for the Colonies for †

SEED POTATOES

required by the ‡ *Department.*

ADDRESS.

Requisition O. H. M. S.

C ⅄ A

O. A. G.,

STANLEY.

If necessary that goods be shipped by a fixed date or by a particular vessel enter instructions here and briefly indicate reason for necessity

Estimated total cost in sterling exclusive of packing and freight £17 : 10 : 0.

Any other instructions to the Crown Agents as to the execution of this indent as a whole

No tin-lined cases to be supplied.

Space for local use only.

XV. MISCELLANEOUS.

17. Prevention of Potato disease and provision of seed.

I hereby certify *that the above requisition is made for the current supply of an established and customary service sanctioned by His Majesty's Government, and that the expenditure has been duly sanctioned by* Special Warrant No.

Approved,

Head of Department.

Colonial Secretary.

GOVERNOR.

W. & S. Ltd.

FALKLAND ISLANDS.

*Indent No.** 123. *Date** 19th May, 1922.

* To correspond with No. and date at head of first sheet.

Item No.	Quantity.		Description of Articles.	Estimated Cost in England. Rate.	Total. £	s.	d.	Remarks.
1.	2	cwt	Seed Potatoes Kerr's Pink	12/6	1	5	0	To be obtained from : Messrs Dobbie & Company.
2.	2	"	" " ~~Arran Comrade~~ Great Scot	12/6	1	5	0	
3.	2		Knapsack sprayers (Capacity 6 gallons)	£5	10	0	0	The Royal Scottish Seed Establishment, Edinburgh.
			Bordeaux Mixture for sprayers	£5	5	0	0	
			Freight Charges		3	10	-	
			Total estimated cost of the Indent		£ 21	-	-	

Telegrams "Crown, London."

All communications on this subject should bear the Ref. No and date of this letter given below, and should be addressed to the Crown Agents for the Colonies.

(4)

OFFICE OF THE CROWN AGENTS FOR THE COLONIES,

4, MILLBANK,

LONDON, S.W. 1.

COLONIAL SECRETARY'S OFFICE 28 SEP 1922 FALKLAND ISLANDS

SIR,

I have the honour to append particulars of orders placed in pursuance of the indent quoted, which has been registered in this office as shewn below.

The cost is in excess of the indent estimate, but in view of the necessity for special selection etc. we are satisfied that Messrs.Dobbies' price is reasonable.

The contractors advise that shipment by 12th October is a little early for Kerr's Pink" which is a late ripening variety They will however, lift the tubers about mid September so that they may be "firmed up" for the journey.

The Colonial Secretary,

FALKLAND ISLANDS.

I have the honour to be, Sir,

Your obedient servant,

A. Howell Hunter

for Crown Agents.

17th July 1922.

J.

Packages will be addressed—

Reqn. 1571

O. H. M. S.

C ↑ A O. A. G.

STANLEY.

Ref. No. G/Falkland Is: 1571/1.

Indent No. 123.

Dept. or account ......

Inspector No inspection.

Firm's tender is dated 12th July 1922.

The contract date for delivery is 12th October 1922.

Suppliers.	Item nos.	Goods.	F.O.B.	Contract price.
Dobbie & Co.Ltd., Seed Merchants, EDINBURGH.	1/2.	Seed potatoes.	LONDON.	£5.10.0d.

G. 87. 5,000/8/21. W. & S. Ltd.

FOR INSTRUCTIONS AS TO TENDERING, SEE BACK.

W

Falkland Is. 1571a/1

The above file mark must be quoted on all communications regarding this contract.

THE CHIEF ENGINEER,

Office of the Crown Agents for the Colonies,

4, *Millbank, Westminster, London, S.W. 1.*

No Inspection.

Indent No. 123 dated 19.5.22

Account

Dept.

To The Royal Scottish Seed Establishment,
Edinburgh,
Scotland.

Tender to the Crown Agents for the Colonies for the supply of Knapsack sprayers.

NO. OF ITEM.	QUANTITY.	The address must be stencilled or painted on the articles or packages. Paper or Parchment labels are not to be used. Articles which are loose or bundled and are too small to bear the address are to be marked with metal labels securely fastened with wire.	RATE.	AMOUNT.		
3	2	Knapsack sprayers (Capacity 6 gallons) @	90/-ea	£9	0	0
		Bordeaux Mixture for sprayers to the value of about £5		£5	0	0
		Accepted. No delivery date has been given by you and we have assumed that delivery can be made in 7 days. Please confirm. No tin lined cases to be supplied. 11.9.22.				
	CO MS					
		Cost of packing for export ...	£	1	15	0
		(a) Cost of delivery f.o.b.	£	1	6	0
		(b) Alternative, cost of packing and postage to	£	16	0	0
		Total	£			
		(c) Trade and Shipping allowances per cent. on £	= £			
		Cash discount 2½d for prompt payment 14.0.0. per cent. on £	= £		7	0
		Net amount payable (including all charges) on receipt of Bills of Lading, Parcels, Receipt or Certificate of Postage.	£	15	13	0
		(d) Alternative, total net cost f.o.b.	= £			

(a) See Clause 21 overleaf.

(b) If economy can be effected by so doing, the goods should be sent by Parcel Post, sub-divided if necessary.

(c) Discounts and trade allowances of every kind to be deducted, so as to show the nett amount payable. If no discounts are allowed the tender should be marked nett. The Crown Agents claim to be placed on the footing of the most favoured wholesale shippers, and they will decline to deal a second time with any Firm that does not so treat them.

(d) Firms may quote alternatively for delivery at any other port at which they can deliver f.o.b. cheaper than that stated.

We hereby agree to supply, in accordance with General Conditions of Contract No. 1, dated August, 1913, on back hereof, the articles above specified, at the price set against each, which includes all charges (see Note), and to deliver free on board ship / despatch by post within ____ days from the date of order.

Signature Dobbie & Co. Ltd.

Address Royal Seedsmen, Edinburgh.

Dated this 7th *day of* Sept., 19 22

Date of Issue :—

THE FOLLOWING SPACE TO BE LEFT BLANK BY FIRM TENDERING.

MS

E
248/16.

August, 1913.

CROWN AGENTS FOR THE COLONIES.

GENERAL CONDITIONS OF CONTRACT.

No. 1.

Definitions.

1. In these conditions and in any specification or special conditions annexed hereto—

(*a*) The words "Crown Agents" shall mean the Crown Agents for the Colonies.

(*b*) The word "Engineer" shall mean the Consulting Engineer or Engineers for the time being of the works for which the work under this Contract is required.

(*c*) The word "Inspector" shall mean the Chief Inspecting Engineer appointed by the Crown Agents to inspect the work.

(*d*) The word "Colony" shall mean the Colony or Protectorate for which the work is intended.

(*e*) The word "Contractor" shall mean any person or persons whose tender for the work referred to shall be accepted by the Crown Agents.

(*f*) The word "work" shall mean materials of every kind in every stage of their preparation.

Contract not to be sublet.

2. The Contractor shall not without the written consent of the Crown Agents assign or sublet this Contract or any part thereof nor allow any portion of the work to be done otherwise than in his own establishment.

Contractor to indemnify Crown Agents.

3. The Contractor shall indemnify the Crown Agents against all claims at any time on account of patent rights or royalties whether for manufacture or for use in the Colony.

Alterations.

4. The Crown Agents or the Engineer shall have the power of requiring reasonable alterations in the work or in any of its details and if such alterations do not involve extra expense no payment shall be made in respect of them. If the alterations diminish the value of the work to be done the Contractor shall allow a reduction in the contract price of such amount as the Engineer shall certify to be reasonable or as shall when there is no Engineer be agreed upon.

Payment for extra work.

5. The Contractor shall not receive payment beyond the Contract sum for any work which he may consider should be paid for as an extra unless such work shall have been ordered in writing by the Crown Agents as extra work.

Additions or deductions.

6. The Crown Agents shall have the power of ordering reasonable additions to or deductions from the quantities or weights specified and these additions or deductions shall be shewn for at the Contract rates.

Extension of time for additions.

7. In the event of additions to the quantities being ordered the Crown Agents may if they think it necessary extend the time for delivery to such extent as they may consider reasonable and proper.

Discrepancies between Drawings and Specification.

8. Should there be any discrepancy between the Contract Drawings and the Specification or any inconsistency or omission in either of them reference must be made to the Inspector (or to the Crown Agents when no Inspector has been appointed) for an explanation and the Contractor will be held responsible for any errors that may occur in the work through neglect of this precaution.

The work to be delivered complete.

9. The Contractor shall deliver the whole of the work complete in all its parts and furnished with every necessary detail and fitting notwithstanding any omission or inconsistency in the Contract Drawings and Specification.

Inspector to approve methods.

10. Before proceeding to execute any work the Contractor shall obtain the Inspector's approval of the manner in which the Contractor proposes to execute each portion of the work and shall furnish such drawings or information as the Inspector shall require.

Contractor to take all risks.

11. The Contractor shall take all risks of accident or damage to the work from whatever cause arising and shall be responsible for the sufficiency of all means used by him for the fulfilment of the Contract and shall not be relieved from such responsibility by any approval which may have been given by the Crown Agents the Engineer or the Inspector.

Means of testing.

12. All labour assistance tools gauges articles or apparatus which the Inspector may require for the purpose of testing inspection or gauging shall be provided by the Contractor free of charge.

Work to be to satisfaction of Inspector.

13. The work is to be executed in strict conformity with the Contract Drawings and Specification. The materials and fittings of every kind used are to be free from defects and unless otherwise specified are to be of the best description of their respective kinds. The workmanship is to be of first class character and the degree of finish such as the Inspector shall require.

Powers of Inspector.

14. The Inspector will adopt any means he may think fit to satisfy himself that the materials specified are actually used and he shall have power throughout the contract either personally or by deputy to inspect in any manner he may think fit without giving previous notice the entire work or any part thereof at every stage of progress and wherever the work or any part thereof may be in progress; to amend and alter anything he may think fit, and to reject any parts of the work of which he may disapprove. If any work is so rejected the Contractor shall at once execute it afresh to the entire satisfaction of the Inspector.

Notice to be given to Inspector.

15. The Contractor shall give the Inspector at least one week's notice in writing previous to any of the work being ready for inspection.

Check tests or analyses.

16. When tests or analyses are considered necessary by the Engineer or Inspector in addition to those made by the Inspector or the Contractor's or Sub-Contractor's premises the tests or analyses will be made by persons appointed by the Crown Agents. The Contractor will pay the cost of supply and carriage of samples. The cost of the tests or analyses will be paid by the Crown Agents if they show the material to be in accordance with the Specification; but if not their cost will be borne by the Contractor.

Payment by weight.

17. The Contractor shall if required weigh the whole or any portion of the work in the presence of the Inspector or his deputy where the work is to be paid for by weight the Contractor shall only be paid for the net weights delivered. Notwithstanding the existence of any trade custom the weight of wrappers battens or other material used in packing shall not be included in the weight for payment.

Packing.

18. The Contractor must provide and include in his Contract sum the cost of all packing including cases materials and labour. He will be held responsible for the work being so packed as to ensure its being free from loss or injury on arrival at its destination in the Colony.

Inspector's certificates.

19. Until the Inspector shall have given his certificate of approval none of the work will be considered as accepted by the Crown Agents nor must it be sent away and should any defects be discovered before shipment they must be immediately remedied by the Contractor.

Place of delivery.

20. The work is to be delivered free on board vessels lying in any dock alongside any pier or wharf or in any part of the stream at any of the ports named in the Tender as the Crown Agents may direct; the cost of such delivery must be included in the Contract sum. Should the Crown Agents require delivery to be made at a port not named in the Tender the Contractor shall only receive the exact additional or less (as the case may be) cost of delivery at that port. The work will remain at the Contractor's risk in all respects until delivery has been taken when the Crown Agents' risk will begin.

Dock and Harbour dues.

21. All dock and harbour dues and charges (including Clyde Dues) are, where charged, payable by the Contractor and must be included in the Contract.

Railway Material, Railway Stores, Coal and Coke.—All Dock, Harbour Dues and charges (including Clyde Dues) are payable at all ports by the Contractors.

Other Stores.—London and Bristol—Two-thirds of published rates are payable by Contractors.

Southampton.—Dock charge for labour is payable by Contractors.

Other Ports.—Crown Agents' cargo is exempt, Port of London Authority Port Rate. All Crown Agents cargo is exempt.

Freight arrangements.

22. Freight for the conveyance of the work to the Colony will be engaged by the Crown Agents. Shipping particulars will be sent as soon as possible by the Contractor to the Crown Agents' Shipping Office at 10 Lombardhall Street London E.C. 3 whence instructions will be issued for delivery to a ship. Should the work not be delivered in accordance with such instructions the Contractor shall be liable to the Crown Agents for any loss or expense which they may incur by reason of the non-delivery. The Crown Agents shall however have the power to delay deliveries for any reasonable period to suit their shipping arrangements and the work will remain at the Contractor's risk in all respects until delivery has been taken.

Dangerous Goods.

23. Packages containing dangerous goods (see section 446 Merchant Shipping Act 1894) must be marked by the Contractor as provided in the Statute and specially reported to the Crown Agents' Shipping Office attention being also drawn to them in the Shipping particulars.

Invoices and shipping particulars.

24. Directly the work is ready for shipment the Contractor will give notice in writing to the Crown Agents' Shipping Office and he will forward to the Crown Agents at 4 Millbank S.W. 1 (or copies of invoice and three copies of shipping particulars showing the number marks measurement weight (gross and net) and contents of each package. The invoices should be made out on special forms supplied by the Crown Agents from whom copies can be obtained on application. Packing particulars should be made out on Contractor's own forms. Invoices should allow the wording and order of the tender form whenever this can be done without being misleading as to the nature of the goods or the package in which they will be found. They must give full trade descriptions of each article. When section letters page numbers item numbers or other identifications are given in the form of tender these must be quoted on the invoices. If the work is shipped by instalments separate invoices and shipping particulars will be rendered for each instalment and will enumerate only what is included in that instalment.

Payment.

25. Subject to any deductions to which the Contractor may become liable under the Contract payment will be made to the Contractor within reasonable time after the bills of lading have been received by the Crown Agents provided that the Inspector shall have given his certificate that the work has been completed to his entire satisfaction.

Contract time for delivery.

26. The contract time for delivery shall be the period or periods named in the Tender or agreed upon with the Crown Agents reckoned from the date on which the work is ordered by the Crown Agents.

Contractor to give notice of delay.

27. Should the Contractor anticipate at any time during the execution of the Contract that he will be unable to deliver the work within the contract time he must at once give notice accordingly in writing to the Crown Agents explaining the cause of the delay.

Deductions for delay.

28. Failure to deliver within the Contract time will in addition to any other liabilities incurred by the Contractor under this Contract subject the Contractor to a deduction from the Contract sum as and for liquidated damages and not as a penalty of 1 per cent. per week on the value of any work which may be in arrear unless the Crown Agents are of opinion that such delay has arisen from causes which were unavoidable and could not be foreseen or overcome by the Contractor in which case the Crown Agents on the advice of the Engineer when there is one will decide the extent if any to which the deduction shall be remitted. Delays in the supply of materials to the Contractor will not be admitted as a ground for the remission of deductions excepting so far as they may have arisen from strikes or other causes which could not be foreseen or overcome by the manufacturers or vendors of such materials.

Drawings, &c.

29. Any drawings tracings or descriptions specified must unless otherwise specified be furnished by the Contractor with the first consignment of the work to which they refer and payment will not be made by the Crown Agents until such drawings tracings or descriptions have been furnished to the satisfaction of the Engineer.

Crown Agents may determine Contract.

30. Should the Contractor become bankrupt or insolvent or should he suspend payment or compound with his creditors or from any other cause whatever become unable or fail to carry on the Contract with efficiency: or should he not progress with the work in the manner intended by the Contract or not have work ready for delivery in conformity with the terms of the Contract: or should his preparations for commencement and his subsequent rate of progress be so slow from any cause whatever that in the opinion of the Crown Agents he will be unable to complete the work by the expiration of the specified period: or should he refuse or neglect to comply with the directions given him by the Crown Agents or Inspector or in any other respect act contrary to the terms of the Contract: then the Crown Agents on the advice of the Engineer when there is one shall have power to determine the Contract at an end and the Contractor shall only be paid for such portion of the work as shall have been actually delivered at the date of such determination after deduction of any sum payable under the conditions of the Contract. The Contractor shall in addition be liable to pay to the Crown Agents or the Crown Agents shall be entitled to further deduct the value of any expense loss or damage (including any excess difference between the Contract price of the work to be done under this Contract or of such portion thereof as may not have been delivered at the date of such declaration as aforesaid and the price which the Crown Agents may have to pay for similar work provided in lieu of such portion as may not have been so delivered) which the Crown Agents may be put to or sustain by reason of or in connection with the Contractor's breach of Contract.

Discrepancies in Conditions.

31. Should there be any discrepancy between these General Conditions and any Special Conditions or Specifications of this Contract the Special Conditions or Specifications shall be followed in preference to the General Conditions.

Personal liability of Crown Agents.

32. Nothing in these General Conditions or in any part of the Contract shall be deemed to impose any personal liability on the Crown Agents or on any of them.

Members of Parliament.

33. No Member of the House of Commons shall be admitted to any share or part of this contract or to any benefit to arise therefrom. *See* House of Commons (Disqualification) Acts, 1782 and 1801.

FAIR WAGES CLAUSES.

Fair Wages Clauses.

34. The Contractor shall pay rates of wages and observe hours of labour not less favourable than those commonly recognised by employers and trade societies (or, in the absence of such recognised wages and hours, those which in practice prevail amongst good employers) in the trade in the district where the work is carried out. Where there are no such wages and hours recognised or prevailing in the district, those recognised and prevailing in the nearest district in which the general industrial circumstances are similar shall be adopted. Further, the conditions of employment generally accepted in the district in the trade concerned shall be taken into account in considering how far the terms of the Fair Wages Clauses are being observed. The Contractor shall be prohibited from transferring, or assigning, directly or indirectly, to any person or persons whatever, any portion of his contract without the written permission of the Crown Agents. Sub-letting, other than that which may be customary in the trade concerned, shall be prohibited. The Contractor shall be responsible for the observance of the Fair Wages Clauses by the Sub-Contractor.

35. The Contractor shall cause the preceding condition to be prominently exhibited for the information of his workpeople on the premises where work is being executed under the Contract. Printed copies of such notice will be supplied on application to the Crown Agents. In trades where it is the practice, the Contractor shall also cause to be exhibited, or have available for inspection, a copy of any signed agreement determining the rates of wages and hours of labour commonly recognised by employers and trade societies in the district.

36. The Contractor shall keep proper wages books and time sheets, showing the wages paid and the time worked by the workpeople in his employ in and about the execution of the Contract, and such wages books and time sheets shall be produced whenever required for the inspection of any officer authorised by the Crown Agents.

INSTRUCTIONS TO FIRMS TENDERING.

The original tender form is to be filled in complete in every respect and delivered, properly sealed, by hand or by post, not later than noon on the date named on the face of the form. If no such date appears, the form should be returned as soon as possible.

The duplicate tender form is intended to be retained by the firm.

Both forms should be returned to the Crown Agents at once if the firm is unable or unwilling to tender.

The Crown Agents do not bind themselves to accept the lowest or any tender and they reserve to themselves the right of accepting any tender wholly or in part.

Copies of any drawings referred to in the Specification can be seen at the Crown Agents' Office, and can be obtained from Mr. W. J. Harrison, 7, Carteret Street, S.W. 1, on payment of a sum not exceeding 2/- where one print only is required, and 2/- for the first print and 1/- for the second and all succeeding prints when more than one drawing is quoted on the tender form. These rates are for prints not exceeding 40" × 29", larger sheets being charged at special rates.

W

Falkland Is. 1571a

All communications to be addressed to the Crown Agents for the Colonies, the above reference and the date of this letter being quoted.

ADVICE OF ORDERS PLACED.

(5)

The Crown Agents for the Colonies present their compliments to Colonial Secretary Falkland Islands.

and have the honour to enclose copies of the undermentioned accepted tenders in connection with the indent noted in the margin.

Indent No. 123

Dated 19.5.22.

Dept. -

Crown Agents' Req. No. 1571 a.

Unless a further advice is sent you it may be assumed that the date promised for delivery in England will be adhered to.

OFFICE OF THE CROWN AGENTS FOR THE COLONIES,
4, MILLBANK, LONDON, S.W. 1.
11th September 2.
192

Firm.	Nature of Goods (and indent item numbers).	Date promised for delivery in England.	Approximate cost exclusive of incidental Charges. £
Dobbie & Co.Ltd.	Knapsack Sprayers. 3.	18.9.22.	16.
	Note:- The firm state that there is no such sprayer as 6 gallons capacity made. They are supplying sprayers of 3¼ gallons capacity which they state is as much as one man is able to carry.		

MS.

ORIGINAL SHIPPING ADVICE.

The Crown Agents for the Colonies have to report the undermentioned shipment :— (6)

"P. 2. B/L 1571a/1" (*This reference and the date of this letter should be quoted in all communications.*)

Colony	Falkland Islands
Indent No.	123
Dept.	Agriculture *Special A/c (if any)* --
Steamer	Ortega
From	Liverpool
To	Falkland Islands
Consigned to	The O.A.G.
Date of shipment	12/10/22

The documents enclosed will enable the consignee to obtain possession of and to check the goods. Complete documents shewing the total cost of this consignment will be sent with the duplicate advice.

Attention is drawn to the desirability of weighing packages immediately landed, particularly if there be any reason to suspect pilferage or any shortage. Information as to weight is of service when urging claims.

NUMBERS OF PACKAGES.	DESCRIPTION OF STORES.	REMARKS.
9820/3	2 Cases Bordeaux Mixture	
9821	1 Case Sprayers etc.	
9831/8	8 Cases Potatoes etc.	

ENCLOSURES.

Bill of lading

Invoice :—

	Packing Particulars.	£	s.	d.
Dobbie & Co. Ltd.,	1	7	10	-
" "		Will follow.		

To The Colonial Secretary

FALKLAND ISLANDS.

Date 9/10/22 JB.

Office of the Crown Agents for the Colonies, 4, Millbank, London, S.W. 1.

Form P 301—15,000/3/22.—W. & S. Ltd.

S

INVOICE.

THE CROWN AGENTS FOR THE COLONIES.

Dr. to DOBBIE & CO. LTD.,
SEED MERCHANTS,
Of 52, Moira Terrace, EDINBURGH.

Crown Agents' Reference, i.e., Colony and Regn. No. — Reference No.G/ Falkland Is: 1571/ Indt. NO. 123.

Dept. Agric.

Date 5th October. 192 2

To be filled in by the Contractor.

(This space for use in Crown Agents' office only.)

Account Falkland Is

Indent No. 123 of 19

Letter No. or 19

Shipped by S.S. " " on 19

F.O.B.

W. & S. Ltd.

Item Nos.	Quantity.	Description of Article in wording of Tender.	Weight T. c. q. lb.	Rate.	£ s. d.	£ s. d.
	2	cwts. Seed Potatoes. "Kerr's Pink"				
	2	cwts. Seed Potatoes. "Great Scot"				5. 10. 0.
		Specially hand-picked tubers in 8 cases.				
		Difference between Goods Carr. and Passenger Carriage.				2. 0.

Carried forward ... £

DOBBIE & CO. LTD., EDINBURGH. PAGE........ DATE Oct 5th 1922

REF No G. / Falkland Is. 1571/1

Shipping Particulars

8 Cases Seed Potatoes per S.S. "Ortega"
Alexandria Dock, Liverpool

Mark & Address	No	Descpt. of Packg.	Contents	Measurements			Weight			Value
				Lgth	Br.	Dpth	C.	qr	lb.	
Ref No 1571 O.H.M.S GFA O.A.G No 9831/8. STANLEY	8	Cases	Seed Potatoes	24"	12"	12½"	5	-	16	£5.10/-
							Gross.			
							4	-	-	
							Nett.			

(7)

401/22

27th November, 22.

Sir,

I am directed by the Governor to convey to you His Excellency's thanks for and appreciation of the care which was taken on the voyage and the arrangements made by the Pacific Steam Navigation Company, for the conveyance of the seed potatoes which arrived by the s.s."Ortega" on the 8th November,

I am,

Sir,

Your obedient servant,

for Colonial Secretary.

The Manager,

The Falkland Islands Company Ltd.,

Agents for the Pacific Steam Navigation Company,

Stanley.

(8)

401/22

25th November, 22.

M2 1571a/1
D/L

Gentlemen,

I am directed by the Governor to convey to you His Excellency's thanks for the arrangements made by you for the selection of the seed potatoes and for their conveyance to the Colony.

2. I am also to inform you that the seed was received in excellent condition.

I am,

Gentlemen,

Your obedient servant,

H. Henniker-Heaton

Colonial Secretary.

The Crown Agents for the Colonies,

4 Millbank, Westminster,

London, S.W. 1.

N O T I C E.

A small quantity of seed potatoes of the varieties Kerr's Pink and Great Scot are available for distribution. They have been raised from specially hand picked tubers supplied by Messrs Dobbie and Company, Limited, whose stocks of immune varieties have received the Board of Agriculture Certificate for purity.

2. The potatoes can be obtained at the price of four pence per pound, (in quantities not exceeding 14 lbs of Kerr's Pink and 10 lbs of Great Scot) at the West Store of the Falkland Islands Company and the Globe Store of the Estate Louis Williams who have kindly made arrangements for distribution.

(9)

401/22.

2nd May, 23.

Sir,

I am directed by the Governor to enquire whether you will be so good as to undertake the distribution of a small quantity of seed potatoes of the immune varieties Kerr's Pink and Great Scot.

2. The draft is attached of a notice which it is proposed to issue subject to your concurrence and it is anticipated that about 2 cwt of Kerr's Pink and one cwt of Great Scot can be supplied to you.

3. I am to suggest that from the sale price of four pence per lb., you should retain one halfpenny to meet your expenses and that you should pay to the Treasury only 3½d for every pound of potatoes actually sold.

I am,

Sir,

Your obedient servant,

G. R. L. Brown,

for Colonial Secretary.

The Hon. G. I. Turner,

Manager. Estate Louis Williams,

H. H. R. Gresham, Esq.,

Manager, Falkland Islands Co., Ltd.,

Stanley.

(10)

Port Stanley

Falkland Islands

May 3rd 1923.

Sir:-

I have the honour to acknowledge the receipt of your letter No 401/22 of yesterdays date in connection with the distribution of a small quantity of seed potatoes.

I shall be very pleased to undertake the sale of the potatoes and the conditions as mentioned in paragraph three of your letter are quite satisfactory.

I am,

Sir

Your obedient servant

for Estate late Louis Williams

G. I. Pearce Manager.

Hon

Colonial Secretary

Stanley.

(11)

The Falkland Islands Co., Ltd.,

STANLEY, 3rd May, 1923.

401/22.

Sir,

I beg to inform you in reply to the enquiry contained in your letter of yesterday's date that we are quite willing to undertake the distribution of seed potatoes on the terms suggested.

2. We shall also be glad to exhibit Notices in our Stores to the effect that the immune varieties mentioned are procurable from the Estate of Louis Williams and ourselves, if you will furnish us with a supply.

I am,

Sir,

Your obedient servant,

Manager.

The Honourable

The COLONIAL SECRETARY,

S T A N L E Y .

MINISTRY OF AGRICULTURE & FISHERIES.

Wart Disease. (*Synchytrium endobioticum.*)

Although Wart Disease did not attract attention until within recent years, it has now gained world-wide notoriety. The loss it may occasion is equal to that of Blight, but there is an added evil with the Wart Disease fungus which is not found with *Phytophthora*, namely, that it contaminates the soil rendering it unsuitable for the future production of any potatoes other than the immune varieties. This is due to the presence in infected soil of long-lived spores which are particularly resistant to the action of fungicides. The disease is prevalent only in certain parts of the country, and the importance of using every means to prevent its further spread cannot be emphasised too strongly.

Description of affected Plants.—In the early stages of the disease the young warts may easily be seen in the eyes of the tubers, though the date of their appearance varies with the variety of potato. They increase in size and subsequently become irregular excrescences, which often run together, forming large masses (*see* Figs. 2 and 3). In certain varieties (*e.g.*, Arran Chief) all resemblance to a normal tuber may be lost, the entire tuber being transformed into a coralloid mass (*see* Fig. 1). The warts are at first white, but as they become old they begin to turn black and finally form a putrid mass, from which a dark brown liquid exudes. A crop of Arran Chief, King Edward, or Up-to-Date badly attacked by Wart Disease is a sight not readily forgotten.

These abnormal growths or excrescences are not confined to the tubers, but on badly infected soils they appear on the leaves and buds of the stem near the ground level or on the tips of the underground stems if these rise to the surface. Affected leaves are much distorted and become fleshy. Warts have not been recorded on the roots or on the tubers apart from the eyes. The explanation of this is one of the many points with regard to Wart Disease which await elucidation.

The spores are formed in the tissues of the warts, and for fungus spores are unusually large. They occur in profusion just beneath the skin, and can be seen with a pocket lens as brown specks if the warts are examined before they become too old.

Life-History of the Fungus.—In its earliest stages the fungus exists in the cells of the potato as minute masses of

(38225) P670/R155. 4,000. 9/21. M. & S. B.Gp95.

living matter, without any of the mycelium usually associated in the popular mind with a fungus. The parasite lives in the cells just beneath the skin, and stimulates these to active sub-division, and thus to the production of warts. During the growing season the disease spreads by means of summer spores,* from which numerous motile zoospores escape and infect still healthy potato tissue. Later on this phase is succeeded by a winter or resting stage. The resting spores* are brown in colour, and possess a hard resistant wall. On decay of the diseased tubers they pass into the soil and may remain there in that form, or in some other stage not yet discovered, with unimpaired vitality for many years. On germination the resting-spores give rise to numerous motile zoospores similar to those arising from the summer spores, and these infect fresh potato tubers and so spread the disease to succeeding crops.

The exact length of time that the resting spores remain alive is not known. In a dry state they probably lose their vitality sooner than if left in the ground. In the soil the fungus is known to live for several seasons, and well-authenticated cases have occurred in which the disease has re-appeared after an interval of ten years.

As will be evident from the above, the fungus is easily spread from one locality to another by means of spores. Not only is it distributed by such evident means as throwing diseased produce on to the manure heap, or by feeding it unboiled to live stock, but it may be carried accidentally by carts or farm implements, and even on the feet of animals, especially birds—notably rooks, starlings and pigeons. The smallest portions of soil may contain many spores, and even the dust adhering to the skin of tubers (immune or otherwise) if grown on infected land may not be free from them. The greatest care should, therefore, be exercised not to convey the disease from one locality to another by means of seed or soil likely to be contaminated.

Distribution of the Disease.—Wart disease is most widely prevalent in the northern and midland counties of England and in Wales, and it has been found necessary to certify a number of districts as "Infected Areas," in which only approved immune varieties may be planted. The largest of these areas are the counties of Carnarvon, Denbigh, Flint, Glamorgan, Merioneth, Montgomery and Stafford, the whole of Lancashire south of the river Ribble, a large area in North Salop, and several parishes in the industrial districts of Cheshire, Derby, Leicester, Nottingham and Warwick. South of a line drawn from the Wash to the mouth of the Severn

* Both the summer spores and the resting spores are more correctly spoken of as sporangia or spore-cases, since they both finally become cases in which minute motile zoospores are found.

FIG. 1.—Root of Great Scot with excellent crop of clean tubers, and Arran Chief with no tubers. *Both plants from same plot.*

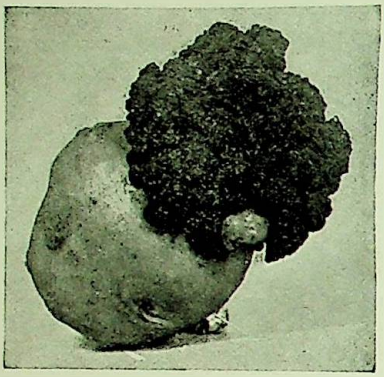


FIG. 2.—Tuber of Arran Chief, showing Wart Disease.

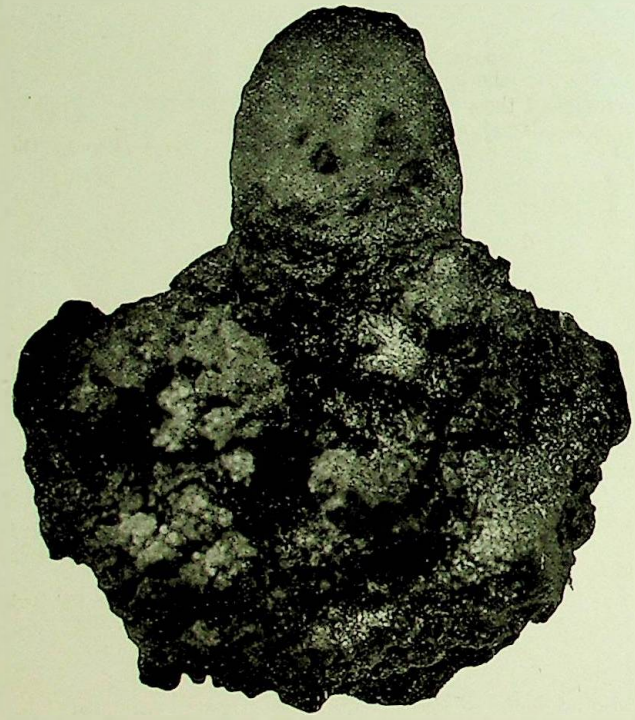


FIG. 3.—Tuber badly attacked by Wart Disease and commencing to decompose.

the intensity of the disease is very slight, and except in parts of Hampshire and Somerset and in the neighbourhood of London only scattered outbreaks have occurred.

Control Measures.—The only method at present known of raising clean crops on infected land is by restricting cultivation to immune varieties—*i.e.*, those which resist the attacks of the fungus. A selection of the best of these varieties is given below.

Many experiments have been made both in this country and Germany with fungicides of all kinds. Lime and sulphur, either separately or mixed in various proportions, have been found useless. Soot, sulphate of copper, formalin, potassium permanganate, copper arsenate, ammonium sulpho-cyanide, calcium hypochlorite, copper nitrate and many other fungicides have also been tried. But in no case did they meet with any success when the soil was thoroughly infected.

Until quite recently wart disease was only known to attack the potato itself, but it has now been found to be capable of infecting also the Woody Nightshade (*Solanum dulcamara*), the Black Nightshade (*S. nigrum*), and certain varieties of tomatoes, though apparently only to a very small extent. This fact should be borne in mind when attempts are being made to clear the ground of the wart disease fungus, and any specimens of these two weeds should be uprooted and burned. Tomatoes also should not be planted. There is no record at present of any other solanaceous plants being attacked by the fungus.

Immune Varieties.—The trials carried out at Ormskirk by the Ministry of Agriculture and Fisheries have demonstrated beyond all doubt the immunity, for the time being at any rate, of certain varieties. Disappointment in the past as to resistant varieties has been due either (*a*) to wrongly named seed, or (*b*) to the presence of "rogues," or (*c*) to the use of varieties which, though formerly supposed to be immune, had not been properly tested on badly and uniformly infected soil. So far as is known the immunity of no variety which has been thoroughly tested and classed as immune has as yet broken down.

The following is a selection of some of the best immune varieties recommended by the Ministry for planting in infected land on most classes of soil:—

Early Varieties.—*Dargill Early*, *Snowdrop* or *Witch Hill*, *Immune Ashleaf* (*Broadleaf*).

[The attention of growers is called to the advantages to be gained by sprouting the Second Early variety *King George*, which can then be lifted almost as soon as *Epicure*.]

Second Early Varieties.—*King George*, *Great Scot*, *Ally*.

Late Varieties.—*Tinwald Perfection*, *Kerr's Pink*, *Majestic*, *Abundance* types.

There are several variations of these types, details of which are given in the Ministry's Annual List.

Wart Disease of Potatoes Orders.*—Wart Disease of Potatoes (*Synchytrium endobioticum*) has been scheduled as a notifiable disease under the Destructive Insects and Pests Acts, 1877 and 1907, and all occupiers of land on which the disease occurs must at once report its appearance to the Ministry, or to an Inspector of the Ministry or of the Local Authority. In reporting an outbreak occupiers must state their names in full and their postal addresses. It is illegal to sell or offer for sale for any purpose potatoes which are visibly affected with Wart Disease.

Only approved immune varieties of potatoes may be planted within an area which has been declared by the Ministry to be an " Infected Area," or in land to which the provisions relating to Infected Areas apply. A list of approved immune varieties can be obtained on application to the Ministry of Agriculture, Whitehall Place, London, S.W.1.

One exception to this rule has been made, the effect of which is that *any* true first early variety of potato may be planted in " Infected Area " except on land on which Wart Disease has occurred at any time, and on condition that the produce of the crop is used in " Infected Areas " only. This exception operates until 31st April, 1924.

It is an offence to sell or purchase or use potatoes grown in any area or land mentioned in the preceding paragraphs for planting in land not in an Infected Area.

In order to secure, so far as possible, that pure " seed " true to type shall be available for planting within Infected Areas, the Ministry have made arrangements for the inspection, and certification where satisfactory, of crops of potatoes of varieties immune from Wart Disease.

Stocks of potatoes so certified, or certified by either the Scotch or Irish Departments of Agriculture, may be brought freely into Infected Areas for planting. No licence in respect of such stocks is required, but in every sale thereof the seller must furnish the buyer with a declaration, preferably in the invoice, correctly stating the serial number of the relative certificate. No other potatoes for planting may be brought into an Infected Area except under a licence issued by the Ministry.

Any contravention of the Orders dealing with this disease renders the person offending liable on conviction to a penalty not exceeding Ten Pounds.

London, S.W.1.
April, 1904.
Revised, September, 1921.

*The Wart Disease of Potatoes Order is under reconsideration. Any revision of the terms will be noticed in the *Journal of the Ministry of Agriculture.*

FIG. 1. Under surface of a potato leaf attacked by "blight."

FIG. 2. Upper surface of a potato leaf attacked by "blight."

BOARD OF AGRICULTURE AND FISHERIES.

POTATO DISEASE ("BLIGHT") AND ITS PREVENTION.

HISTORY OF THE DISEASE.—The common potato disease known as "blight" or "late blight" is caused by a minute (microscopic) form of vegetable life—the parasitic fungus *Phytophthora infestans*. It was first noticed in Europe and America about 1840, and by 1845 it had become widespread. In the latter year "blight" was so virulent in Ireland that it caused an almost complete failure of the potato crop, with consequent famine to the inhabitants.

Since that time the disease has always been present in the British Isles, varying in intensity from year to year: more disastrous in its effects in wet seasons, less serious in dry seasons. In a wet summer losses of more than half the crop may be caused by this disease where precautions are not taken to prevent it, and even in an average season it takes a considerable toll of the tubers.

SYMPTOMS.—The first sign of the disease visible to the naked eye is the appearance on the leaves of dark brown or blackish spots of irregular size and shape, on the under surface of which a delicate white mould may be seen, especially round the margin of the diseased areas. If weather conditions favour the "fungus" the dark-coloured patches spread rapidly and the whole of the foliage, and sometimes the stems also, soon become blackened.

Potato plants badly attacked by "blight" give off a very distinct and disagreeable smell. In wet, muggy weather the whitish mould, which is the most characteristic sign of the disease, may grow out from the upper as well as from the under surface of the leaves. The minute threads, of which the whitish mould consists, branch like microscopic trees and produce innumerable, pear-shaped outgrowths, the spores or "seeds" of the fungus. The spores, becoming detached from the thread-like stalks which bear them, are carried by currents of air and spread the disease to any healthy potato leaves on which they happen to alight. Each spore falling on a leaf, growing into and spreading through it, gives rise to a discoloured patch. After the fungus has fed on the food substances in the leaf, its threads grow ou from the leaf into the air, especially from the under surface, and form the whitish mould already described. The period from the time of infection to the production of a new crop of spores is only a few hours, or at the most days, hence the extreme rapidity with which the disease may spread. If dry weather intervenes after a bad attack of "blight," the affected leaves shrivel and subsequently fall off, leaving the haulm bare.

(16685—16.) Wt. P 96—G 180. 100,000. 5/18. D & S. G. 17/ 18.

If the weather is wet after the haulm has been attacked, the tubers soon begin to be affected. Infection of the tubers is brought about by spores which, liberated from the surface of the leaf, are washed down into the soil. The first signs of disease in the tubers are discoloured, rusty patches just visible through the skin, but more evident when the skin is scraped away. At first only a small part of the tuber may be attacked, but the disease may spread rapidly until half or more of the tuber is affected. Blighted tubers may also become secondarily infected with bacteria and other micro-organisms, when a soft rot sets in, which reduces the tubers to the consistency of pulp.

The re-appearance of "blight" year after year is mainly due to the fact that each year a certain number of tubers infected with the disease are planted as "seed." This in turn is due to the fact that slightly infected tubers are easily overlooked. Herein lies the advantage of "boxing" tubers, for if boxed the diseased tubers may very often be detected by the fact that they either do not sprout at all or bear poor, weakly sprouts. Such sets should not be planted. When small quantities of "boxed" potatoes are to be planted, it is advisable to cut across the tubers at planting time and to observe whether the flesh shows hollow spaces or black or brown spots. Any such tubers should be regarded as suspect and should not be planted. To prevent any possible damage from cutting, the cut surface may be rubbed in dry plaster of Paris, powdered lime, sulphur, or charcoal dust. Under suitable weather conditions during the early part of the summer, some of the slightly diseased tubers, that escaped detection at the time of planting, may give rise to one or more diseased shoots which come above ground and on which spores develop, thus providing the starting point for an epidemic. Potato "blight" develops its spores and hence spreads most rapidly under moist conditions, such as are provided by warm, muggy days following heavy rain.

Infection may perhaps also proceed from diseased tubers which have been left in the ground after digging, or which have lain about near clamps during the winter. No satisfactory evidence is yet forthcoming that the disease persists during the winter in a dormant condition in the soil.

THE PREVENTION OF "BLIGHT" BY SPRAYING.—The object of spraying potatoes is to prevent the outbreak and spread of "blight," and in order to do this it is necessary to use a substance which, whilst not harmful to the potato plant, prevents the fungus which causes "blight" from penetrating into the tissues of the leaves. The substance, if it is to be effective, must not only have this property but also must be capable of adhering firmly to the leaf.

A solution of copper sulphate, if used alone, though it would destroy the blight fungus, would also injure the

foliage. When, however, copper sulphate is combined with lime or washing soda, a fungicide is obtained which is both harmless to the potato foliage and destructive to the fungus. The use of Bordeaux mixture (copper sulphate combined with lime) and Burgundy mixture (copper sulphate combined with washing soda) has been common for many years in the vineyards of France and other countries. These substances have also been used largely and for many years for the purpose of preventing "blight" in potatoes, and it has been shown that the more effectively the foliage is covered with either of these mixtures, the more thoroughly is an outbreak of "blight" prevented.

By the use of Bordeaux or Burgundy mixture, the spores of the fungus are prevented from germinating and producing threads which grow into the tissues of the leaf, and hence the haulm, instead of withering, as it does when attacked by "blight," remains healthy and green; the crop is therefore increased, and the tubers remain free from "blight."

In practice, however, no matter how carefully spraying may be done, it is not possible to cover the foliage so completely as to prevent all chance of infection. Even so, spraying when well done assists very materially in preventing the successive and rapid infections already described, and hence in limiting the extent of the disease both in the haulm and in the tubers.

It is important to realise that spraying is to be regarded as a means of prevention rather than as a cure, for when this is realised it becomes apparent first, that spraying must be done in good time, and second, that if heavy rains have washed the spraying material from the leaves, the operation of spraying must be repeated. This is the more important because in wet seasons the fungus finds conditions favourable for its rapid multiplication, so that if wet weather follows the spraying it is doubly important to repeat the operation, and even to spray a third time. Some of the most successful large growers of potatoes no longer rely on spraying only once or twice, but make a practice of spraying as often as weather conditions make repetition of spraying necessary.

In short, spraying must not be regarded as an infallible preventive of "blight." It is not. Spraying should rather be regarded as a measure of insurance: as a means of enabling the plant to tide over a time during which it is specially liable to infection, and if by reason of spraying this dangerous time is successfully passed, the work of tuber-formation goes on instead of being checked, as would be the case if the disease got a hold on the plant. Hence the yield is increased, and the proportion of sound tubers is larger than would be obtained from a crop the tops of which have been attacked by disease.

Later on, if the disease delares itself in the tops when tuber formation is approaching completion, and when, owing to the large growth of the haulm, spraying is no longer possible, removal of the tops will help to prevent the fungus from infecting the tubers in the ground.

The accumulated evidence of many years justifies the conclusion that the cost of insurance by spraying in an average season is amply repaid by the greater yield of healthy tubers.

It may be of interest to mention briefly the views held by scientific men as to the way in which Bordeaux mixture acts. One is that the carbon-dioxide in the air acts upon Bordeaux mixture in such a way as to bring about the gradual liberation of small amounts of soluble copper, which substance, though present at any given time in very small quantities, is sufficient to kill the spores of the blight fungus. Another view is that the spores falling upon the film of Bordeaux mixture excrete a substance which acts upon the mixture, and brings about the liberation of soluble copper. By absorbing this, the fungus brings about its own death by poisoning. The action of Burgundy mixture is probably identical with that of Bordeaux mixture.

Opinions differ as to the relative value of Bordeaux and Burgundy mixtures; there is, however, no doubt that both are efficient fungicides. Where freshly-burnt stone-lime of good quality is to be obtained the use of Bordeaux mixture is to be recommended; but if good lime is not readily obtainable, Burgundy mixture should be used.

INSTRUCTIONS FOR MAKING BURGUNDY MIXTURE.—The mixture should be carefully made, otherwise injury to the foliage may result. It is essential that all the soluble copper be precipitated by the addition of sufficient soda. Whilst adding the soda to the solution of copper sulphate the mixture must be vigorously stirred. The precipitate formed by the mingling of these two substances should be flocculent and remain in suspension for a considerable time.

The method of making Burgundy mixture is as follows:—

For Spraying One-third of an Acre (say 50 rods).

(1) Dissolve 4 lb. of sulphate of copper in five gallons of water in a barrel,* capable of holding 40 gallons, then make up to 35 gallons.

(2) Dissolve in another vessel in five gallons of water 5 lb. of washing soda (previously broken up into small pieces if necessary).

(3) When the soda is *completely* dissolved, add (2) to (1), stirring vigorously meanwhile.

N.B.—(Both copper sulphate and soda should be of fully 98 per cent. purity.)

* Iron or zinc vessels must not be used.

Where smaller areas are to be sprayed, barrels, capable of holding 10 gallons may be used ; in that case, the quantities of copper sulphate and soda given above should be reduced each to ¼, namely, 1 lb. of sulphate of copper and 1¼ lb. of washing soda.

Burgundy mixture should be bright blue in colour, and should not settle for a considerable time. Experience has shown that the precipitate remains longer in suspension and adheres better to the foliage when the mixture is made up in the above manner than when the soda is added to a concentrated solution of copper sulphate. The fungicide should be used in a *fresh state* and in no case should it be applied more than ten hours after it has been made.

Both copper sulphate and washing soda dissolve slowly in cold water. The preparation of the solutions may be hastened by dissolving the copper sulphate and soda each in a gallon or so of hot water and making up the quantities indicated above by the addition of cold water ; but before the solutions are mixed with one another they should be allowed to become cold. In order to save time, the copper sulphate and soda may be dissolved beforehand, but after the one is added the mixture should be used with as little delay as possible.

Sulphate of copper is poisonous, therefore the vessels in which the copper compounds have been prepared should not be used for the preparation of food.

The above formula gives what is known as 1 per cent. Burgundy mixture, *i.e.*, 1 per cent. of copper sulphate is used in its preparation. The use of Burgundy mixture of double this strength, *i.e.*, 2 per cent., is sometimes advocated, but results indicate that there is little to be gained by the application of the stronger fluid. The Irish Department of Agriculture has for a number of years carried out trials as to the relative merits of 1 and 2 per cent. Burgundy mixture. For the five years 1911–1915 the average yield per acre sprayed with the 1 per cent. mixture was 12·24 tons as against 12·25 with the 2 per cent. strength, the weights of *healthy* tubers being respectively 11·72 and 11·84 tons. In some years the 1 per cent. mixture gave better results than the other. Although the average yield during the five years was fractionally better when the 2 per cent. mixture was used, there is not sufficient difference to justify the use of the stronger fluid, especially at a time when copper sulphate is much increased in price. In particularly wet districts, however, it may be advisable to use the 2 per cent. mixture. During 1917 good results were generally obtained with the weaker solution.

INSTRUCTIONS FOR MAKING BORDEAUX MIXTURE.—This mixture should be made up in the following proportions :—

Copper Sulphate	4 lb.
Quick Lime (freshly burnt lumps) ...	2 lb.
Water	40 gallons.

The copper sulphate should be dissolved in 35 gallons of water in a barrel. The lime should be placed in a separate vessel and slaked *slowly*. This is best done by adding only the amount of water which the lime can absorb. After the lime is thoroughly slaked, more water should be added gradually, stirring all the time, to make up to five gallons. It should then be strained through a fine sieve and added to the solution of sulphate of copper, the contents of the barrel being vigorously stirred during the mixing. The above formula is for a 1 per cent. Bordeaux mixture, and to make the stronger, 2 per cent. solution, double the quantities of copper sulphate and lime are required to the same amount of water. There is, however, little to choose, as regards fungicidal power, between a 1 and a 2 per cent. mixture.

APPLICATION OF THE SPRAYING MIXTURE : KNAPSACK SPRAYING MACHINES.—For small areas Burgundy and Bordeaux mixtures are best applied by means of a knapsack machine, which must be provided with a nozzle that throws a fine misty spray. The person spraying should aim at covering the under surface as well as the upper surface of the leaves, as both sides are liable to infection. It is a mistake to apply too much fluid. On no account should the plants be "washed." All that is required is that, after spraying, the thinnest possible covering of the fungicide should be spread evenly on the leaves ; this is best done by maintaining a high pressure in the spraying machine.

For the first spraying, about 120 gallons of the fungicide per acre or ¾ gallon per rod, pole or perch should be used, and for the second spraying, about 160 gallons per acre or one gallon per rod, pole or perch.

If a knapsack machine is not available, a syringe fitted with a nozzle which throws a mist-like spray may be used on small plots. Large fields of potatoes on the other hand should be sprayed by a horse-drawn machine. All spraying machines should be kept in good condition by oiling frequently the important working parts, and by careful washing out after use.

DATES FOR SPRAYING.—It is important to remember that the first spraying should be done before the disease appears, but in view of variations in the time of appearance of "blight" in different years and in different parts of the country, it is obvious that the dates for spraying must vary

with the season and the district. Thus, potatoes in the south-western counties should be sprayed earlier than those in the east and north. The condition of the haulm must also be taken into account, it being difficult and sometimes impossible to spray effectively when the haulm is far advanced in growth. When possible, the spraying should be done as soon as dry weather sets in after the first wet spell occurring at or about the dates given below. The best results are obtained when spraying is done during dry weather. It is better, however, to spray even when light rain is falling than to delay the operation too long in expectation of dry weather. Spraying should in no case be done in very wet weather, and if heavy rain falls before the spraying fluid has dried on the foliage, thereby washing off much of it, a further application should be given as soon as conditions permit. Spraying should be carried out preferably in the early morning or evening, and not when a hot sun is shining.

In an average season an approximation to the following dates for the first spraying of second early and main crop potatoes will probably be satisfactory.

Cornwall	June 15th—end of June.
Devon	*N.B.*—Spraying should be done the last week of May for early varieties in the Penzance district and the first week of June in other forward districts of Cornwall, Devon, and the Isle of Wight.
Dorset	
Isle of Wight and Hampshire ..	
Somerset	
S.W. Wales ...	
Glamorganshire ...	July 1st—July 8th.
Gloucestershire ...	
Monmouthshire ...	
Sussex	
N.W. Wales ...	
Wiltshire	
Berkshire	July 8th—July 15th.
Herefordshire ...	
Kent	
Oxfordshire ...	
Surrey	
Worcestershire ...	
Remainder of the country.	July 15th—July 31st.

(In the north-eastern counties spraying should usually be deferred until the last week of July.)

The second spraying should generally be done about three weeks after the first. It will serve to cover the new foliage and to protect more completely that already sprayed. In the south-west of England it will often be found advisable to spray a third time, and this applies also to other districts in wet seasons when heavy rains are frequent.

Even when blight has broken out and the potatoes have not previously been sprayed, it is not too late to spray ; for by so doing the rate of spread of the disease will be checked

and the damage to the crop reduced, though the protection from disease will usually be less complete than when spraying was done earlier.

There is some difference of opinion as to whether second earlies as well as main crop varieties should be sprayed. Where the disease is apt to appear early and to be specially virulent, as in the western half of the country, it is certainly advisable to spray second earlies, but where the foliage of these varieties is on the point of ripening before the disease appears, it is not worth while to spray them. Second earlies, which are planted late or which are to be lifted late, should, of course, be sprayed.

In the Penzance district it may also be necessary to spray first early varieties, as in adverse seasons serious outbreaks of disease are apt to occur even in first earlies. In other parts of the country the haulm of early varieties may be affected by blight, but it is generally held not to be worth while to spray them, as the crop will usually be lifted before the disease affects the tubers, but it should not be forgotten that the disease developed on first earlies may spread from them to second earlies or main crop potatoes growing in their neighbourhood. First earlies, which have been planted late or which for any other reason are to remain in the ground some time after the appearance of disease, should be sprayed.

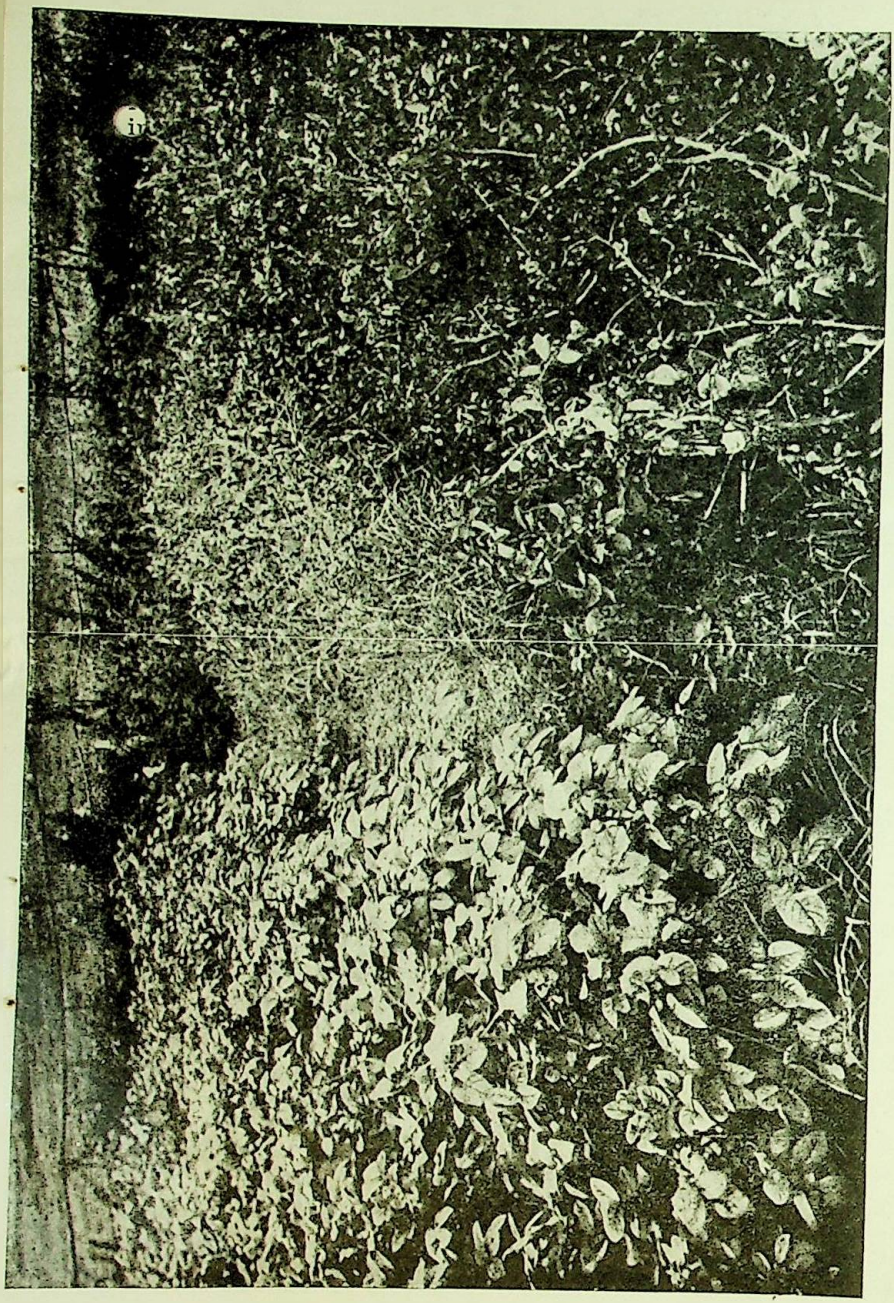
THE ADVANTAGES AND DISADVANTAGES OF SPRAYING.—The advantages derived from spraying have already been described. They are :—

(1) Prevention or delay of outbreak of the disease.
(2) Reduction of the virulence of the attack,

leading to

(3) An increased yield and a smaller amount of disease in the tubers.

As has already been stated, potato spraying has been practised for many years both abroad and in the British Isles, and the results of spraying show an overwhelming preponderance of evidence in favour of this operation. In the same way an analysis of the reports received during 1917 shows that in the large majority of cases spraying produced beneficial results. A striking example of protection from disease conferred by spraying is given in Fig. 3. In some cases, however, the reports state that spraying was either useless or actually harmful. Of these adverse results it is possible to show that some were due to inexperience in spraying. Sometimes the spraying material, instead of being used immediately whilst it was fresh, was allowed to stand too long before use. In other cases the directions for making the spraying fluid were not followed, and sometimes the spraying was not done until the



Sprayed. *Unsprayed.*

FIG. 3.—Sutton Satisfaction Potatoes.

haulm had already made very considerable growth or until after disease had appeared, owing to the earliness of the season and to machines and chemicals being delivered late.

When, however, every allowance is made for these remediable defects in methods of spraying, the fact remains that in a certain number of cases competent observers reached the conclusion that spraying was not beneficial. It is, therefore, important to endeavour to ascertain what are the causes leading to the remarkable fact that, although in the majority of cases spraying resulted in marked benefit to the crop, in some cases it failed to produce this result.

Before considering this question it may be worth while to refer briefly to certain opinions adverse to spraying which are undoubtedly groundless.

Bees and Spraying.—It is claimed sometimes that spraying is poisonous to bees. There is no ground for this statement. Many varieties of potatoes fail to flower; others drop their flowers before the blossoms open. Among those that do flower, not a few varieties bear blossoms the stamens of which do not burst, and hence produce no free pollen which insects might gather in lieu of nectar. Neither do bees visit potato flowers in any considerable numbers, nor, if they did, would the small amount of fungicide deposited in the flower be likely to injure these insects.

Keeping-quality and Spraying.—Another baseless statement frequently made is that spraying spoils the keeping qualities of potatoes. The opposite is the truth, for, as already mentioned, the tubers of sprayed potatoes are less liable to disease than are those of unsprayed potatoes, and diseased tubers are apt to rot in store.

Cooking-quality and Spraying.—Again, it is sometimes asserted that sprayed potatoes turn black on cooking; spraying has no influence on the colour which cooked potatoes assume. The blackening is a peculiarity due to the fact that certain varieties of potatoes sometimes contain a chemical substance which when exposed to the air is oxidised and forms a black pigment.

Spraying and Seed Tubers.—Yet another objection is that seed taken from sprayed potatoes is unsatisfactory. Here also the objection has no basis in fact. Indeed, wherever disease has appeared, seed from sprayed potatoes is likely to be less diseased and hence to be better than seed from unsprayed potatoes. Moreover, it is a well-established fact that the best seed is obtained from *immature* tubers, and one of the effects of spraying is to prolong the growth of the haulm, and hence to delay the maturing of the crop.

Spraying and Risk of Poisoning Other Food Plants.—Another of these minor objections may be mentioned. It is

often stated that when potatoes are inter-cropped there is a risk of food plants being poisoned. In the case of ordinary inter-crops of the cabbage tribe the danger is negligible; at the time of spraying the plants are not far advanced; the rains subsequent to spraying will gradually wash away any deposit which may be on the leaves, and the copper, if any, which remains will be confined to the outer leaves which are not used. At the same time it may be said that every precaution should be taken before these plants are prepared for food. If no copper is to be seen on them, no danger is to be feared. In the case of food plants which are used in the raw state, however, as, for example, lettuce, there is an element of danger, and such crops should not be used for inter-cropping with potatoes.

Spraying and Ripening of the Crop.—Turning now to the more weighty objections which are raised, the first that deserves attention is the statement that the ripening of the crop is delayed owing to the haulm remaining green for a longer time. The statement is correct. The copper sulphate used in spraying exercises a preserving influence on the haulm, and in some seasons, with the latest varieties, this might possibly be a disadvantage; on the other hand, in the majority of cases and seasons the extension of the growing period means an increase in the yield, and is therefore a decided advantage rather than a disadvantage.

Spraying and Injury to Foliage.—A certain number of complaints from inexperienced growers take the form that after spraying the lower yellow leaves fall off. This is no disadvantage; the yellowing leaves indicate by their colour that they are already moribund and their fall is no loss to the plant.

The most serious objection which has been brought against spraying is that it may lead to scorching and falling off of the leaves. There is evidence that this result occurred during the past season, but the cases of scorching or partial defoliation were comparatively rare.

An examination of the records indicates that the scorching and other damage to the foliage, where it occurred, took place under one or other of the following conditions:—

(1) In potatoes growing under bad conditions, of cultivation, as, for example, in insufficiently drained, shallow, or light soils.

(2) Where mistakes were made in making up the mixture, particularly by using wrong proportions of the ingredients.

(3) In cases in which frost occurred after spraying had been done; for example, in 1917, where spraying was done in June in northern districts late frosts occurred after the date on which spraying was done. It appears to have been undoubtedly the case that sprayed foliage suffered more severely than unsprayed. The explanation is obscure, but it should be noted, and those who grow potatoes in exposed districts will be well advised to delay spraying until the danger of late frosts is past. It may

be mentioned also, that in some places on the north-east coast, potatoes sprayed during the day were "scorched" the same night by the inopportune occurrence of a cold sea-fog.

(4) Lack of success in spraying was also traced to the fact that the sprayed plants had previously been attacked by aphis. There is no doubt but that plants so attacked suffer considerable damage from spraying, nor is this remarkable when it is remembered that the aphides made innumerable punctures in the leaves, and hence the spraying material on such leaves has ready means of access to the delicate internal tissues of the plant. It therefore follows that if it has been impossible to protect the plants from the attacks of aphides, they should not be sprayed with Burgundy or Bordeaux mixture. It is possible that in such cases a "dry" spray might be found beneficial. It is noteworthy that in 1917 aphides were quite exceptionally prevalent upon potato foliage—especially in the Midlands,—and that no such attack had been seen on potatoes for many seasons.

(5) Lastly, it appears to be an undoubted fact that potato crops grown in the neighbourhood of factories and in an atmosphere containing acid fumes may be adversely affected by spraying. The reason for this is not clear. It may be due to some chemical change brought about by the action of the acid fumes on the spray mixture. On the other hand it has been suggested that the potato foliage in many of these situations is less vigorous than when it is growing in clearer air and hence is less able to resist the penetration into its tissues of the poisonous ingredients of the spray fluid. Possibly it may be proved that a "dry" spray will produce the advantages of spraying without the disadvantages. This, however, must not be taken as a recommendation of "dry" spraying, for although various substances in powdered form have been used in different parts of the country, and although the results are said to have been beneficial, the experience at the disposal of the Board is not sufficient at present to enable them to make a general recommendation on the subject.

Of the serious objections which have been raised, the first two are remediable: by ensuring better cultivation and by making up the spray fluid accurately, the damage may be prevented.

The third objection, damage by frost after spraying, can only be prevented by delaying spraying until risk of frost is over.

The last-mentioned cases of potatoes affected by aphis and of potatoes grown in a fume-laden atmosphere are serious, and must be taken into consideration by those who are contemplating spraying.

In concluding this summary of objections, it is important to point out that, as described in some detail later on, the potato is subject to many diseases, of which "blight," although in many ways the most important, is only one. Now it cannot be too strongly insisted upon that spraying is a preventive of "blight," and not of other potato diseases.

In this connection it may be mentioned that during the past year the disease known as "Blackleg" was common in certain districts of the country. This disease is already in

the seed when it is planted. It is due to a bacterium, and not to the fungus which causes "blight." Spraying is useless to prevent it, and in not a few instances when the advanced symptoms of "blackleg" appeared, viz., blackening of the lower part of the stem and dying of the leaves, it was assumed erroneously that the disease was "blight," and that spraying was therefore useless.

OTHER MEANS OF REDUCING THE DAMAGE CAUSED BY "BLIGHT."—The outbreak of an attack of "blight," like that of any other disease caused by living germs, depends first, on the presence of the organism causing the disease, and second, on the power of that organism to gain an entrance to and grow into the tissues of the plant.

The most certain method of preventing this disease would be to cultivate varieties which resist its attack. In the case of certain other diseases, as, for example, wart disease (black scab) of potatoes, immune varieties have been discovered, and are now in general use in infected areas. By planting these immune varieties the grower is able to secure a heavy crop and to be sure that the crop will not suffer from wart disease. It must, however, be clearly understood that a variety which is immune from one disease, as, for example, wart disease, is not necessarily immune from another, and in point of fact the varieties immune from wart disease show all degrees of susceptibility to "blight." Unfortunately, the grower is not able at present to plant varieties immune from "blight," for although the Irish Department of Agriculture has discovered that certain varieties of potatoes, *e.g.*, Champion II. and Shamrock, are either immune from or highly resistant to "blight," these varieties are often deficient in some important character, such as quality, cropping power, or appearance. Little can be said about the relative susceptibility to "blight" of the many varieties of potatoes grown on a large scale, because the degree of susceptibility depends largely upon the particular stock of the variety and upon the locality in which it is grown. In the absence, therefore, of varieties which are immune from "blight," and at the same time are profitable commercially, the potato grower for the present must rely on other means of prevention.

Before describing the means of reducing the danger of loss by "blight" other than by spraying, it will be useful to point out that, as every good cultivator knows, an outbreak of disease depends not only on the presence of the agent causing the disease, but also on the healthiness of the plant. It therefore follows that the grower has at his hand the means not, it is true, of preventing entirely but of reducing the risks and severity of an outbreak of disease. These means are :—

(1) Choice of clean and vigorous seed (sets).
(2) Good methods of cultivation.

(1) Choice of Seed.—The two most important points to be borne in mind in choosing and planting seed (sets) are :—

(*a*) The selection of a good stock of a good variety suitable to the soil ; and

(*b*) Care in securing that diseased sets are not planted.

(*a*) *Selections of a Good Stock.*—It is a well-known fact that if seed tubers are taken from plants grown in some parts of England, especially on the light soils of the South, the plants which that seed produces are lacking in vigour, and whether they suffer from disease or not, give an inferior yield. On the other hand, it is equally well known that if Scotch or Irish seed—that is, seed obtained from the good potato-growing districts in Scotland or the North of Ireland—is used, the plants are vigorous and the yield is high.

Similarly, seed from "once-grown" Scotch or Irish potatoes —that is, the produce of seed raised in Scotland and Ireland and grown for one year in England—also gives strong plants and good yields, provided that the plants were grown in one of the good potato districts as, for example, Lincolnshire, parts of Cambridgeshire, or Yorkshire.

Inasmuch as it is good common sense that the healthier the plant the less likely it is to suffer from disease, it follows that Scotch or Irish seed, or "once-grown" seed from Scotland or Ireland, would be less likely to suffer from disease than would plants raised from own-saved seed. Therefore, unless a grower has absolute proof, from long experience, that his own raised seed gives higher yields of healthy tubers he should plant only Scotch or Irish seed. As an example of an actual test of the yields from Scotch or Irish, as compared with English seed, the following figures, taken from the report of a trial carried out by the Royal Horticultural Society at Wisley, Surrey, may be given :—

	English Seed.	*Scotch Seed.*	*Irish Seed.*
	lb.	lb.	lb.
Yields of 20 sets of Edward VII....	63	71	—
" " " Arran Chief ...	48	76	76
" " " " " ...	61	78	—
" " " Golden Wonder	51	78	—
" " " White City ...	57	77	—

It is also a well-established fact that immature tubers make better sets than well-matured tubers, and therefore it is good practice where home-grown seed is to be used for planting, to lift the more vigorous plants before the haulm has completely died down and to use the tubers of these plants for seed. Tubers to be used for seed purposes should be greened by exposure to the light for several days, whereas those which are to be used for food should be stored as soon as dry. (*See* Leaflet No. 299, *The Storage of Potatoes and Other Vegetables for Winter Use.*)

The best sets are obtained from tubers about the size of a hen's egg and weighing about 2 oz. Larger sets give a slightly increased yield but are not economical owing to the greater weight required for planting. Where only large tubers are available for seed purposes, they should be cut into several pieces and the cut surfaces rubbed in dry plaster of Paris and the pieces boxed. Lime is sometimes recommended but plaster of Paris gives better results. In cutting tubers it should be remembered that sets taken from the heel end give poorer plants than those taken from the rose end, and hence the cuts should be such as to secure several pieces each of from 1½ to 2 oz. in weight from the rose end of the potato, recollecting that each piece must have at least one eye.

(*b*) *Selection of Clean Seed.*—Growers who cultivate small breadths of potatoes can do much to prevent "blight" by taking care to plant seed which is free from disease. In order to ensure this, potatoes, even those of the main crop, should be boxed and sprouted. For this purpose the sets should be put in boxes of convenient size, either the ordinary potato-sprouting boxes or, failing those, any convenient shallow, wooden or wicker receptacles, stored in a dry, frost-proof place and exposed as fully as possible to the light. By this means sturdy shoots are obtained which are less likely to be broken at planting time than are the weaker or spindly shoots produced when tubers are sprouted in the dark. If, however, it is not possible to sprout boxed seed in the light the seed should none the less be boxed and sprouted, for even though the sprouting is done in the dark the yield is higher than from unsprouted sets. With care in planting, injury to the sprouts may be prevented. The sets should be placed in the boxes in single layers with the rose end (*i.e.*, the end with most eyes) uppermost.

The sets should be put to sprout at least three weeks, and preferably five or even more, before planting. If this is done the sprouts should be from half an inch to an inch long at planting time, and such sets when planted give yields larger than those from unsprouted sets by as much as 28 lb. to the square rod. Another advantage of boxing is that it enables the grower to reject diseased and poor sets.

When planting the sets, two sprouts only should be left, as it has been shown that thereby the best results are obtained.

Those tubers which do not sprout at all or which give only thin and weak shoots should not be planted. Moreover, if the tubers belong to a variety which does not suffer by being cut, they may be cut at planting time by slicing off a portion of the heel end, and any tubers which show signs of disease, hollow spaces, or brown or black patches in the flesh, should be rejected.

Steeping the sets in a fungicide before planting is of no use as a means of preventing "blight."

(2.) **Methods of Cultivation.**—(*a*) *Planting Distances.*—Next only in importance to the choice of good seed as a means of reducing the risks from "blight" is the practice of good methods of cultivation. Among these methods, sufficient space between the rows and between the plants must have consideration. The width of the rows and the distance from plant to plant naturally vary according to the soil and variety but, from the point of view of preventing the rapid spread of "blight," it is certain that wide planting is advantageous, and many good growers recommend a distance of 3 feet between the rows and 15 to 18 inches from plant to plant. It is true that closer planting will at times give a larger yield on certain soils, but it also increases the risk of disease.

(*b*) *Earthing up.*—By earthing up the plants thoroughly the risk of infection of the growing tubers is reduced, and wherever possible it is recommended that the earthing up should be done in two stages. If the development of the haulm is not too advanced the second earthing up should be deferred until shortly before the time at which disease is likely to make its appearance in the particular neighbourhood. (*See* pp. 7–8.)

(*c*) *Manures.*—The potato is a crop which grows well even though the ground is only lightly treated with farmyard manure. It responds well to artificial manures. A good system of manuring consists in the application just before the time of planting of a mixture of superphosphate of lime (5 parts) and sulphate of ammonia (3 parts) at the rate of 3–4 oz. to the square yard. If sulphate of ammonia is applied after the shoots have come above the ground, it should be mixed with soil so that the growing plant does not come in contact with it. The addition of a small quantity (1 oz. to the yard run) of wood ashes as a dressing to the soil before the sets are planted is also to be recommended; for the potash combined in the ashes helps to produce vigorous growth.

(*d*) *Treatment of Diseased Haulm.*—If blight appears to a serious extent in the foliage at a time when it is too late to spray, it is advisable to pull or cut off the haulm before the majority of the spores fall to the soil—main crop tubers being left for a time to ripen naturally in the ground, for by so doing the risk of the tubers becoming infected is reduced. The potatoes should be dug as soon as their skins have set, because after this takes place there is a likelihood of their growing out, particularly if wet weather intervenes. The haulm should be burnt as soon as possible, and in no case should it be allowed to lie on the ridges.

(*e*) *Lifting and Storing.*—(*See* Leaflet No. 299, *Storage of Potatoes and other Vegetables for Winter Use.*)

ARRANGEMENTS FOR POTATO SPRAYING DURING 1918.—For 1918 the distribution of knapsack spraying machines and chemicals will be left in the hands of manufacturers and retailers.

Knapsack Spraying Machines.—The trade has arranged to manufacture certain types of knapsack spraying machines which, while retaining the distinctive marks of individual firms, will be made to a specifiation issued by the Food Production Department. The manufacturers have undertaken to supply these machines at a fixed price.

It is essential that all those who are not already provided with knapsack spraying machines shall place their orders without delay so that the machines will be delivered early in the season.

Chemicals.—The price of copper sulphate in 1918 will be controlled in such a way that purchasers ordering for early delivery will have a distinct advantage over those who defer their orders.

There will probably be a shortage of soda crystals (washing soda) in the coming season, hence it is *absolutely essential* that early steps shall be taken to secure the necessary supply for spraying purposes.

Lectures and Demonstrations.—With the object of spreading knowledge on the subject of Potato Blight and of providing instruction in spraying during the latter part of the winter and spring, a staff of lecturers has been appointed whose services will be available to Local Societies on application to the Food Production Department. These officers will give lectures, illustrated by lantern slides and drawings, on Potato Blight and its prevention. The services of these lecturers will be available also to assist Local Authorities and Allotment Societies in organising the spraying of the potato crop during 1918.

OTHER IMPORTANT DISEASES OF THE POTATO AND THEIR SYMPTOMS.

WART DISEASE OR BLACK SCAB (*see* Leaflet No. 105).—Affected tubers show irregular outgrowths which look like dirty pieces of cauliflower or the whole tuber may be similarly transformed. This is the most serious disease of the tubers, and its presence must be notified to the Board of Agriculture and Fisheries. The disease is caused by the fungus *Synchytrium endobioticum*. *Immune varieties* must be grown in land infected with Wart disease.

BLACK-LEG OR BLACK-STALK ROT (*see* Leaflet No. 117).—The foliage becomes yellowish, and the base of the haulm turns black and subsequently becomes rotten, after which the plant dies down completely; the

tubers also may be affected. This disease—which is most prevalent during June and July—is caused by a bacterium.

No remedy is known. The disease passes from the seed into the growing plant. Tubers from plants affected with this disease should not be used for seed.

"Rust."—This is the popular name of a disease especially prevalent in the west of England and characterised by rusty and enfeebled foliage. It is largely due to the use of poor seed, and when dry weather prevails early in the season, the crop is frequently crippled.

Rusty foliage and a stunted habit of growth are sometimes associated with a disease of the haulm caused by the fungus *Verticillium albo-atrum*. Change of seed and care in seed selection should ensure the crop against attack by "Rust."

Leaf-curl (*see* Leaflet No. 164).—As the name implies, plants thus affected have curled leaves and are often stunted in growth. Plants seriously affected by leaf-curl often give little or no yield. No remedy is known, but if good seed is used the disease is not likely to prove troublesome. Sprouting prior to planting is helpful for, as a rule, sets which produce strong sprouts will grow into sturdy, fruitful plants.

Corky Scab (*see* Leaflet No. 232).—Affected tubers are only partly deformed, the seat of infection by the parasite *Spongospora subterranea* being characterised by the presence of loose, corky *debris* which does not usually penetrate deeply into the tuber.

Common Potato Scab (*see* Leaflet No. 137).—This scab is exceedingly common, but as it is purely superficial and does not affect the quality of the tubers it can generally be ignored, though badly scabbed potatoes should not be used for seed.

Dry Rot (*see* Leaflet No. 193).—This disease, which leads to shrivelling and collapse of the tubers attacks them mainly in storage. It is caused by the fungus *Fusarium caeruleum*. (For best methods of storage *see* Leaflet No. 299.)

Caterpillar Injury.—During 1917 the caterpillar of the Rosy Rustic moth, *Hydroecia micacea* frequently attacked potato haulm, penetrating the stem and eating the inner tissues, thus causing the haulm when nearly full grown to collapse. Ordinarily the caterpillars feed upon coarse weeds, and the breaking up and cultivation of land which had lain derelict for many years and had been the home of the insects destroyed their natural food, so that the caterpillars were driven to the potatoes. Proper soil cultivation will prevent insect hibernation, so that no future trouble to any extent need be feared by good gardeners.

London, S.W.1,
July, 1894.
Re-written, May, 1918.

Copies of this leaflet may be obtained free of charge and post free on application to the Secretary, Board of Agriculture and Fisheries, 3, St. James's Square, London, S.W.1. Letters of application so addressed need not be stamped.

(10)

401/22.

8th October, 23.

Sir,

With reference to my letter No. 401/22 of the 2nd of May and to your reply of the 3rd of May, I am directed by the Acting Governor to enquire whether any of the potatoes have been sold.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.

for Colonial Secretary.

The Manager,

Estate Louis Williams,

The Manager,

Falkland Islands Company, Limited,

Stanley.

16

THE FALKLAND ISLANDS COMPANY, LIMITED.

STANLEY. 9th October, 1923.

401/22

Sir,

I beg to acknowledge the receipt of your letter of the 8th instant, and, in reply, to inform you that the whole quantity of the immune varieties of seed potatoes have been disposed of, and a cheque for the sum of £4.4.7. this day forwarded to the Colonial Treasury.

Kerr's Pink	200 lbs @	4d	
Great Scott	90 "	"	
	290 "	"	is £4.16.8.
Less ½ per lb retained by us			12. 1.
Cheque forwarded to Treasury			£4. 4. 7.

2. We are quite willing to make a further distribution if it is desired.

I am,

Sir,

Your obedient servant,

H. A. Grahame

Manager.

THE HONOURABLE

THE COLONIAL SECRETARY.

STANLEY.

ESTATE LOUIS WILLIAMS.
SUCCESSOR TO
ESTATE CHARLES WILLIAMS.
ESTABLISHED 1863.

Bankers:
London County & Westminster Bank, Ltd.

Cable & Telegraphic Address:
"WILLIAMS," Port Stanley.

Codes used:
A I and A B.C. 5th Edition.

17.

Port Stanley,

Falkland Islands,

12th October. 1923.

Sir.

We have the honour to acknowledge the receipt of your letter No.401/22 of the 8th inst. and in reply beg to inform you that the potatoes in question have all been sold.

We may add that payment was tendered to the Colonial Treasury some ten to twelve days ago. when we were informed by the Treasury Officials that they knew nothing of the matter and could not accept the cash before having received instructions.

We now hold at yourdisposal the sum of £4:18:0 corresponding to 3 cwt.Potatoes at 3½d per lb. and shall be glad if you will kindly inform us to whom this amount is to be paid.

We have the honour to be.
Sir.
Your obedient Servants.
p. ESTATE LOUIS WILLIAMS.

Accountant.

THE HONOURABLE
THE COLONIAL SECRETARY.
PORT STANLEY.

18.

401/22.

29th October, 23.

Sir,

With reference to your letter of the 9th of October on the subject of the sale of immune varieties of seed potatoes I am directed by the Acting Governor to thank you for the trouble taken in the matter.

2. I am to say that there are, at present, no further supplies of potatoes for distribution but His Excellency would be grateful if your Company would undertake to dispose of a further quantity of seed potatoes at a later date if it is desired.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.

for Colonial Secretary.

The Manager,

Falkland Islands Company, Limited,

Stanley.

(19.)

401/22.

29th October, 25.

Sir,

With reference to your letter of the 12th of October on the subject of the disposal of a quantity of immune varieties of seed potatoes, I am directed by the Acting Governor to thank you for the trouble taken in the matter.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.

for Colonial Secretary,

The Manager,

Estate Louis Williams,

Stanley.

20

P U B L I C N O T I C E.

POTATO DISEASE - SPRAYING.

Potato growers are recommended to spray their potatoes at this season to prevent the outbreak and spread of 'blight.' In order to do this it is necessary to use a substance which whilst not harmful to the plant, prevents the fungus which causes blight from penetrating into the tissues of the leaves and at the same time is capable of adhering firmly to the leaf. Bordeaux mixture (copper sulphate combined with lime) is both harmless to the potato foliage and destructive to the fungus. Its use has been common for many years and it has been shown to be very effective in preventing blight.

THE GOVERNMENT WILL SUPPLY A QUANTITY OF THIS MIXTURE FREE OF CHARGE TO POTATO GROWERS. IT WILL ALSO LEND A SPRAYER FOR THE APPLICATION OF THE MIXTURE. PERSONS DESIROUS OF TAKING ADVANTAGE OF THIS OFFER SHOULD APPLY TO THE FOREST OFFICER.

The precaution of spraying is especially important in wet weather as the fungus which causes blight finds such conditions favourable for rapid multiplication.

Colonial Secretary's Office,
Stanley, Falkland Islands.
17th January, 1924.

(21)

No. 401/22

(It is requested that, in any reference to this minute, the above Number and the date may be quoted).

MINUTE.

20th June, 1924.

To The Forest Officer,

Stanley.

From

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

Will you please say what quantities of seed potatoes are available for sale to the public after setting aside the supply of seed required by the Government for planting next spring.

H. Henniker-Heaton,

Colonial Secretary.

No. [redacted]

[redacted] is requested that in any reference to this minute, the above Number and the date may be quoted).

MINUTE.

22

24th June 1924

From The Forest Officer
Stanley

To

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

Sir.

The following quantities of seed potatoes are now available for sale.

Viz.

3½ cwts. Kerr's Pink
35 lbs. Great Scot.

I have the honour to be
Sir
Your obedient servant
James Reid
Forest Officer

(23)

N O T I C E .

A further small quantity of seed potatoes is available for distribution from Government Stock.

These potatoes can be purchased at the West Store (Falkland Islands Company, Ltd.,) and at the Globe Store (Estate L. Williams) at the price of 4d. per lb.

The varieties are Kerr's Pink (which can be obtained in quantities not exceeding 14 lbs) and Great Scot (which can be obtained in quantities not exceeding 5 lbs).

- - - - - - - - -

(24)

401/22

1st July, 24

Sir,

With reference to your letter of the 9th of October and to your kind offer to undertake the distribution of a further small quantity of seed potatoes, I am directed by the Governor to inform you that about 2 cwt. of Kerr's Pink and about 20 lbs of Great Scot will be sent to you within the next few days for this purpose. A copy of the notice which it is proposed to issue in connection with the distribution of these potatoes is attached, and I am to request that you will be good enough to make arrangements for their sale to the public on the same terms as on the last occasion.

I am,

Sir,

Your obedient servant,

H. Henniker-Heaton

Colonial Secretary.

The Manager,

Falkland Islands Co., Ltd.,

Stanley.

(25)

401/22

1st July, 24

Sir,

With reference to your letter of the 3rd of May, 1923, I am directed by the Governor to enquire whether your firm would be so good as to undertake the distribution of a further small quantity of seed potatoes. If you are agreeable, about 1½ cwt of Kerr's Pink and about 15 lbs of Great Scot will be sent to you for disposal on the same terms as before. A copy of the notice which it is proposed to issue in connection with the sale of these potatoes is attached.

I am,

Sir,

Your obedient servant,

H. Hemmiker Heaton.

Colonial Secretary.

The Manager,

Estate L. Williams,

Stanley.

The Falkland Islands Company,Limited.

Stanley. 2nd July,1924.

(26)

401/22

Sir,

I beg to acknowledge the receipt of your letter of yesterday's date,with reference to the distribution of seed potatoes,and, in reply to say, that arrangements have been made to receive and distribute the potatoes on the same terms as last year.

I am,

Sir,

Your obedient servant,

H.H.R. Goodwin

Manager.

The Honourable

The Colonial Secretary.

Stanley.

27

ADDRESS ALL CORRESPONDENCE TO THE MANAGER

GLOBE STORE

ESTATE LOUIS WILLIAMS

GENERAL MERCHANTS

RADIO ADDRESS
"WILLIAMS"
CODES USED:
BENTLEYS
A.B.C. 5TH ED.
A.1.

PORT STANLEY
FALKLAND ISLANDS

10th July 1924

401/22

Sir,

We are in receipt of your esteemed favour of 1st July last, and in reply thereto are pleased to state that we shall be very pleased to attend to the distribution and sale of seed potatoes.

We are, Sir,

Yours faithfully,

p. Estate Louis Williams

Accountant.

The Honourable

The Colonial Secretary

Port Stanley.

(28)

401/22.

21st July, 24

Sir,

With reference to your letter of the 10th July, I am directed by the Governor to thank you for agreeing to distribute the seeds available for disposal to the public. A notice is attached which it may be convenient to display in your Store.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.

for Colonial Secretary.

The Manager,

Estate Louis Williams,

Stanley.

(29)

401/22.

21st July, 24.

Sir,

With reference to your letter of the 2nd July, I am directed by the Governor to thank you for agreeing to distribute the seeds available for disposal to the public. A notice is attached which it may be convenient to display in your Store.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.

for Colonial Secretary

The Manager of the

Falkland Islands Company, Ltd.,

Stanley.

ADDRESS ALL CORRESPONDENCE
TO THE MANAGER

GLOBE STORE

ESTATE LOUIS WILLIAMS

GENERAL MERCHANTS

RADIO ADDRESS
"WILLIAMS"
CODES USED:
BENTLEYS
A.B.C. 5TH ED.
A.1.

PORT STANLEY
FALKLAND ISLANDS

19th September.1924.

Sir,

No.401/22.

We refer to your letter of 1st July last. and now have pleasure in enclosing our cheque for £2-13-5. corresponding to 183 lbs.Seed Potatoes @ 3½d per lb. that are being distributed by this Firm.

We have the honour to be.

Sir,

Your obedient Servants.
p. ESTATE LOUIS WILLIAMS.

Accountant.

THE HONOURABLE

THE COLONIAL SECRETARY.

PORT STANLEY

(31)

401/22.

12th September, 24.

Sir,

I am directed by the Governor to acknowledge the receipt of your letter of the 10th of September, enclosing a cheque for £2 13/5 in payment of the seed potatoes disposed of to the public by your firm, and to thank you for your goodness in carrying out the distribution on behalf of the Government.

2. A Treasury receipt for the amount of your cheque is enclosed herewith.

I am,

Sir,

Your obedient servant,

H. Henniker-Heaton,

Colonial Secretary.

The Manager of the

Estate Louis Williams,

Stanley.

32

401/22.

12th May, 25

Sir,

I am directed by the Governor to enquire whether your firm will be so good as to undertake, as in past years, the distribution of seed potatoes grown by the Government. The quantities available for sale to the public are 275 lbs of Great Scott and 950 lbs of Kerr's Pink, and His Excellency would be glad if you would undertake the distribution of half the quantity available of each variety.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.

for Colonial Secretary.

E. G. Rowe, Esq.,
Auditor-in-Charge,
Estate Louis Williams,

The Manager,

Falkland Islands Company, Limited,

Stanley.

33

The Falkland Islands Co.Ltd

Stanley.

No.401/22

12th May 1925

Sir,

I beg to acknowledge the receipt of your letter of even date regarding the distribution of seed potatoes and to inform you in reply that arrangements have been made to receive & distribute the potatoes on similar conditions to previous years.

I am,

Sir,

Your obedient servant.

for Manager.

The Honourable,

The Colonial Secretary.

Stanley.

34

ADDRESS ALL CORRESPONDENCE
TO THE MANAGER

GLOBE STORE

ESTATE LOUIS WILLIAMS

GENERAL MERCHANTS

RADIO ADDRESS
"WILLIAMS"
CODES USED:
BENTLEYS
A.B.C. 5TH ED.
A.1.

PORT STANLEY
FALKLAND ISLANDS

13th May 1925

Sir,

We beg to own receipt of your favour dated 12th inst. and note that H.E. the Governor desires to know whether this firm will undertake to distribute a certain quantity of seed potatoes, as in former years, about 137 lbs. of Great Scott, and 475 lbs Kerr's Pink.

We do not foresee any difficulty in falling in with His Excellency's request, beyond the fact that we may not be able to take delivery of the whole amount at one time, as we already have on hand some 450 lbs of Kerr's Pink which we have imported from Messrs Sutton, this year.

In order to facilitate handling we would also suggest that the potatoes be delivered to us in small crates, instead of bags. We have a large number of suitable crates, with loose tops, and shall be pleased to send along a sufficient quantity on hearing where they should be delivered.

We are, dear Sir,
Yours faithfully,
p.p. Estate Louis Williams

The Honourable
The Colonial Secretary
Port Stanley.

35

401/22.

18th May, 25.

Sir,

I am directed by the Governor to acknowledge the receipt of your letter of the 13th May and to thank you for the arrangements made to sell a quantity of the seed potatoes grown by the Government.

2. The arrangement to deliver the potatoes in crates which you offer to supply for the purpose will be quite suitable, and the first lot will be sent to the Globe Store by the carter who delivers the crates.

3. As you are at present disposing of a quantity of the Kerr's Pink variety in the ordinary course of your business, it is thought that it would be more convenient for you to take smaller quantities from the Government than were at first suggested, and arrangements are being made to send 250 lbs of Kerr's Pink and 75 lbs of Great Scott.

4. I enclose a copy of a notice regarding the sale of the potatoes which you may find it convenient to display in your store.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.
for Colonial Secret

E. G. Rowe, Esq.,
Auditor-in-Charge,
Estate Louis Williams,
Stanley.

(36)

401/22.

18th May, 25

Sir,

I am directed by the Governor to acknowledge the receipt of your letter of the 12th May, and to thank you for the arrangements made to sell a quantity of the seed potatoes grown by the Government.

2. As you have verbally indicated your willingness to dispose of a larger quantity than was at first suggestedm arrangements are being made to send to the West Store, 700 lbs of Kerr's Pink and 200 lbs of Great Scott.

3. I enclose a copy of a notice regarding the sale of the potatoes which you may find it convenient to display in your store.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.

for Colonial Secretary.

The Manager,

Falkland Islands Company, Limited,

Stanley.

(37)

N O T I C E .

Distribution of Seed Potatoes grown by the Government.

A quantity of seed potatoes of the immune varieties of Kerr's Pink and Great Scott are available for distribution.

These potatoes may be obtained at the West Store (Falkland Islands Company, Limited) and the Globe Store (Estate Louis Williams) at the price of 4d per lb.

Colonial Secretary's Office,
Stanley, Falkland Islands.
15th May, 1925.

37

Hon. Col. Treasurer

Sir,

With reference to this request may I respectfully point out that, owing to the fact that there is no separate Head in the Estimates for "Sale of seed potatoes", it is impossible to supply this information with any degree of accuracy.

The receipts have been credited to "Sale of Stock" & it is impossible to say whether the amounts ~~and~~ or for sale of seed potatoes or the produce.

H. Chen

4/6/25

39.

Colonial Secretary's Office,
Stanley, 15th June, 1925.

Messrs the Falkland Islands Company, Limited.

Dr. to the Colonial Government.

1924.		Per lb.	£.	s.	d.
1 July.	To 2 Cwt. Kerr's Pink Potatoes.	3½d	3.	5.	4.
	" 20 lbs. Great Scott Potatoes	"		5.	10.
	(The above forwarded to Messrs the Falkland Islands Company for sale to public - C.S.Lr.No.401/22 of 1st July, 1924).		£3.	11.	2.

(40)

401/22.

18th June, 25

Sir,

I am directed by the Governor to enclose an account for the seed potatoes which were delivered to the Falkland Islands Company for distribution in 1924, and to request that you will be so good as to make payment to this office.

I am,

Sir,

Your obedient servant,

G. R. L. Brown.

for Colonial Secretary.

The Manager,

Falkland Islands Company, Limited,

Stanley.

No. 1105

THE TREASURY,
STANLEY, FALKLAND IS.

Date 23rd June, 1925.

Received from The Col. Secretary,

the sum of Three pounds, eleven shillings & twopence ——

on account of VIII. Miscellaneous, 9. Sale of Stock.

PAID
25 JUN. 1925

£3=11=2

V. Atkins
for Treasurer

A numbered receipt should be obtained for all Money paid to Government.

Waterlow & Sons Limited, London Wall, London.

No. 1487

THE TREASURY,
STANLEY, FALKLAND IS.

42

Date 23/12/25.

Received from Hon Col Secretary

the sum of Thirteen pounds two shgs & 6d

on account of Sale of seed potatoes.

£13 — 2 — 6

TREASURY
23 DEC. 1925
FALKLANDS

H. Chey
for Treasurer

A numbered receipt should be obtained for all Money paid to Government.

Waterlow & Sons Limited, London Wall, London.