C.S.

INDUSTRIES (Agriculture)
(Miscellaneous)
LIVE STOCK (Agriculture)
MISCELLANEOUS
(Control of Stores, etc.)
(Miscellaneous)

No. 43/43.

19 43.

Secretary of State.

SUBJECT.

19 42.

23rd November.

Memorandum on the question of raising Seed Potatoes in the Dependencies.

Previous Paper.

MINUTES.

1. S. of S. Circular Note of the 23rd November, 1943.

(2)

N. of A. To sec (1), pl.
Adv. Forces.
1/4/43.

(3)

H.C.S. This subject is one in which we could supply all that is required. We have the climate to produce as good as the best Scotch Canadian or New Zealand seed potatoes.
I cannot imagine where the idea arose that fresh blood has to be introduced at frequent intervals to maintain our potato production. Virus diseases are almost non existant in our potato fields & I have not observed Phytophthora blight in the Colony. There is Potato Wart (Synchytrium) & an apparent bacterial rot of tubers which has not been identified but neither would prevent the production of a good quality of seed potato of immune varieties.
The limiting factor at present is the restricted area of available cultivated

Subsequent Paper.

soil. If seed potatoes were provided I believe we could produce — by arrangement with certain stations, perhaps by instruction under some suitable order to — said potatoes from 20 acres at least, within the next 12 months — probably 100 Tons.

There is no real reason why — with a little assistance from the military, other source of labour, Hill Cove, Pebble Is Teal Inlet, Chartres & Darwin should not be able to produce between 5 & ten acres a piece if seed potatoes are made available Each of these stations has a tractor. - Fuel & fertilizer would be necessary.

The usual cause of unsatisfactory crops in potatoes is attributable to virus diseases — These diseases are spread largely by aphides & we have no aphides on potatoes in this colony.

I would suggest that certified Seed of N.Z. origin being in the same hemisphere would be most satisfactory

J.H.R. 2/4/42.

N.B. -

IF ANYTHING IS TO BE DONE A START SHOULD BE MADE WITHIN A FORTNIGHT.

J.H.R.

(4)

4.E.

I think there is the germ of a very good idea here, though there are some difficulties to overcome. We might consider the possibilities of starting it ourselves near Stanley with the help of the military in order to overcome labour difficulties.

I cannot trace any report from here & we do not know where the misinformation in para 2. came from. I have asked Mr Gibbs to come to A.E.'s Office at 10.30 to-morrow morning in case you think a discussion might be fruitful.

H.B. 2/4.

Read. (5) At the discussion it was decided first to establish definitely the possibility of growing seed-potatoes sufficient to keep the Colony supplied & to leave any proposal for establishing an export trade until this has been done & we have made ourselves definitely self-supporting.

H.B. 5/4

P.A.

C.S.O. No. 43/43.

Inside Minute Paper. *Sheet No. 2*

6 Circular Note from S. of S. of 25. 8. 43.

(7)

D/Ag

For your comments on (6a) – (6d).

KB
25-X-43

(8)

A.C.I.

Noted. We have planted about 5 ac of potatoes at Darwin & are at present preparing the ground at Elizabeth Downs for a further 4 or 5 acres. Frost will I think be our greatest enemy

1/11/43.

(14)

MEMORANDUM.

In the light of difficulties which have been experienced in providing seed potatoes for Colonial requirements, the question of the possibility of raising seed potatoes in the Dependencies themselves has lately been considered.

In a number of Dependencies the opinion is that satisfactory crops of potatoes cannot be grown from locally raised seed; moderate crops are obtained for the first year from such seed, but they rapidly decline when replantation from subsequent crops is made. In consequence it is the practice to rely on importations of seed potatoes from the United Kingdom or Canada in order to maintain local potato growing industries. The reason for this is not altogether clear; the usual view is that in tropical countries the cause may be climatic, but this would appear to be negatived by the fact that, on the one hand, similar experiences are reported from the Falklands where the climate is similar to that of the islands off the coast of Scotland and, on the other, that in certain parts of tropical Africa seed potatoes of acclimatised types apparently can be, and are, successfully grown.

The matter was considered at the Fifty-second Meeting of the Colonial Advisory Council of Agriculture and Animal Health, when the view was expressed that in all probability the position in the Dependencies is very similar to that which occurs in this country and is dependent on the potatoes being infected with virus diseases, although damage by insect pests and unsuitable conditions of storage, as well as the climatic factor, cannot be entirely excluded.

In the United Kingdom seed potatoes can only be satisfactorily produced in places unfavourable for the multiplication and movement of the vectors of the important potato viruses. Until lately the only places where such conditions were known to occur were parts of Scotland, Northern Ireland, Cumberland, North Wales and Pembrokeshire, but recently in Devon and Cornwall similar areas have been found, and seed potatoes of satisfactory quality are now being produced there.

It accordingly appears not unlikely that, if conditions fulfilling this requirement can be found in the Dependencies, it should be possible to grow seed potatoes there. This view is greatly strengthened by evidence that has come to hand very recently that satisfactory seed potatoes are being regularly produced both in the highlands of Kenya and on the Nigerian Plateau. In Kenya the position is said to be as follows: Africans grow a number of so-called "Native varieties of potatoes of which the origin is entirely obscure, but it would seem that they must have originated from an imported strain. The varieties do not appear to agree with any now in cultivation, but the interesting point is that two, at least, are remarkably resistant to potato blight (Phytophthora infestans) which appears to have been recently introduced into Kenya. The Department of Agriculture in Kenya is encouraging the collection of seed of these varieties. In Nigeria the position is that in the area around Jos, and, more recently, in other parts of the Northern Provinces, notably around Kano, potatoes have been grown successfully from local seed for a number of years past. It appears that this industry originated with the mining companies in the neighbourhood of Jos who were anxious to

encourage

encourage the native production of potatoes for consumption by their staffs. For some years these companies were in the habit of importing seed potatoes from the United Kingdom, but latterly these importations have been discontinued and native agriculturists have been successfully growing crops from locally raised seed. The industry has extended and quite recently the Nigerian Government have enacted regulations under the Agricultural Ordinance of 1926 to control the growing and marketing of potatoes, the effect of which is to establish three grades, namely ware potatoes, seed potatoes and chat potatoes. Chat potatoes are tubers too small for human consumption which were being extensively used for replanting. The effect of the regulations is to prohibit the sale for human consumption of any potatoes other than ware potatoes and to ensure that properly graded seed potatoes shall be planted, while chat potatoes are disposed of by the Department of Agriculture and neither sold not returned to the growers. In this way the planting and sale of chat potatoes are prevented.

It would seem accordingly that if, as is suspected, virus diseases constitute the limiting factor to the production of seed potatoes and that they can only be transmitted to an economically significant extent where the vectors are present and active, conditions may exist both in Kenya and on the Nigerian Plateau which are particularly favourable for seed potato production. It may be that the vectors responsible for transmitting the diseases are absent altogether, or that the prevailing conditions are unfavourable for them, since it seems improbable, with the extensive importation of potatoes which has taken place, that virus diseases can have been completely excluded.

It would accordingly appear that in these areas there may be some prospect for the development of raising seed potatoes on some scale to meet the existing needs, and it is suggested that the matter should be fully investigated as soon as possible.

It is suggested also that, if the above interpretation is correct, investigations should be undertaken in other parts of the Colonial Empire with a view to finding other areas where the vectors of virus diseases do not exist, or remain inactive, and where it would be possible to raise crops of seed potatoes. It is thought that the territories where such investigations could best be undertaken would be Palestine and possibly also Cyprus.

The Colonial Advisory Council, when considering the matter, suggested that similar investigations might also be undertaken in Egypt and that the matter might be taken up with the Middle East Supply Centre.

It would seem that such investigations should comprise a critical examination of the reasons underlying the failure to produce seed potatoes, including the existence of virus diseases themselves and the vectors conveying them, together with other disease factors and the search for localities where these unfavourable factors are not present, combined with trials on raising potatoes from seed taken from localities which appear to hold out promise of success.

If

If these points could be followed up it might assist to solve the difficult problem of the supply of seed potatoes for Colonial and Middle East needs at the present time.

1B

Selected papers on the production of seed potatoes.

1. Anon. Seed potatoes: buy certified stocks. - J.Minist. Agric. xlix, pp. 123-124, 1942. Give details of the certificates issued in the British Isles.

2. Bald, J.G. Potato virus diseases; the scientist and the farmer. - Fruit World, Melbourne, xlii, 6, pp. 17-18; 7, pp. 17-18, 1941. Abs. in R.A.M., xx, p. 592.

3. - - & Norris D.O. Obtaining virus-free potatoes. - J.Coun.Sci.Industr.Res.Aust, xiv, pp. 187-190, 1941. abs. in R.A.M., xx, p. 592.

4. Bawden, F.C. Potato virus diseases. - Nature, Lond. cl, pp. 476-477, 1942. Report on a symposium which covered many points of interest in connection with the production of virus-free seed. The papers will probably appear in full in Ann.appl.Biol., xxx, 1943.

5. Caldwell, J. The production of virus-free potatoes in the South-west of England. - Ann.appl. Biol., xxix, pp.265-267, 1942.

6. Cockerham, G. The distribution and significance of certain potato viruses in Scotland. - Scot. J.Agric., xxii, 1, pp.1-11, 1939. Abs. in R.A.M., xviii, p.407.

7. Currie, J.F. Production of high-grade seed potatoes in North Wales - J.Minist.Agric., xl., pp.316-326,1933. Abs.in R.A.M., xiii, p.48.

8. Davidson, W.D. Potato growing for seed purposes. - 236 pp., Dublin Stationery Office, 1937. Price 2s.6d. Abs. in R.A.M., xvii, p.409.

9. Davies, W.Maldwyn. Aphis migration and distribution in relation to seed potato production. - Scient. Hort., v, pp.47-54, 1937. (See also Ann. appl.Biol., xxv, pp.122-148, 1938).

10. Henning, L.J. The basis of potato production. - Fmg. S.Afr., xvii, pp.481-482, 1942.

11. Loughnane, J.B. A survey of the aphis population of potato crops in Ireland in relation to the production of seed potatoes. - J.Dep.Agric. Eire, xxxvii, 2, pp.370-382, 1940. Abs. in R.A.M., xx, p.76.

12. Murphy, P.A. Nature and control of potato virus diseases. - Nature, Lond., cxxxviii, pp.955-956, 1936. Abs. in R.A.M., xvi, p.337.

13.

13. - - Potato virus research and the production of virus-free seed potatoes. - Scient. Hort, vi, pp.215-222, 1938. Abs. in R.A.M., xvii, p.479.

14. Porter, D.R. Relation of virus diseases to potato production in California. - Bull.Calif. agric.,Exp.Sta. 587, 1935. Abs. in R.A.M., xiv, p.714.

15. Samuel, G. Potato planting in relation to health certification. - J.Minist. Agric., xlvii, pp.166-172, 1940. Abs. in R.A.M., xx, p.131.

16. Timson, S.D. The potato. Methods of cultivation in Southern Rhodesia.)- Rhod. agric.J., xxxix, 4, pp. 274-295, 1942.

17. Whitehead, T. The virus problem in relation to seed potato production in North Wales. - Scient. Hort., v, pp.39-46, 1937. Abs. in R.A.M., xvi, p. 551.

18. - - & Currie, J.F. Virus diseases in relation to commercial seed potato production with a study of the aphis population at selected farms by W.Maldwyn Davies. - Ann.appl. Biol., xix, pp.529-549, 1932. Abs. in R.A.M., xii, p.236.

(6D)

EXTRACT FROM THE REPORT OF THE MEETING OF THE COMMITTEE ON AGRICULTURE OF THE COLONIAL ADVISORY COUNCIL OF AGRICULTURE, ANIMAL HEALTH AND FORESTRY HELD ON THE 13TH APRIL, 1943.

Item 2.

The Production of Seed Potatoes in the Colonial Empire (Agric.29)

Dr. Tempany said that as members were informed at the fifty-third meeting of the Council a memorandum on the raising of seed potatoes in Colonial dependencies had been transmitted by the Secretary of State to Colonial Governments concerned. Observations on the memorandum had now been received from a number of Colonies and this had been summarised in a note which had been circulated for the information of members. From the information which had so far been received there appeared to be no grounds for supposing that any insuperable difficulties prevented the development of the production of seed potatoes at suitable points in the Colonial Empire.

Dr. Wiltshire said that the information given in the note was of considerable interest. He described the position of Late Blight in East Africa and drew attention to the remarks of the Director of the East African Agricultural Research Station on this subject. Mr. Hill considered that the introduction of all potatoes into the existing blight-free areas should be prohibited except those introduced through quarantine. Dr. Wiltshire strongly supported this suggestion. He thought that the two native blight-resistant varieties in Kenya offered scope for selection. He was also in favour of the introduction of Scotch seed. He felt that the necessity of spraying potatoes in the tropics in order to control Late-Blight would have to be faced, but seed potatoes were a valuable crop and should be able to stand the cost of spraying.

Sir Geoffrey Evans pointed out that if it were not profitable to spray an ordinary crop of potatoes there would be no market for seed potatoes, and he also referred to the difficulties of obtaining supplies of copper sulphate at present. He also suggested that the effective control of Late-Blight would probably depend on the incidence of the rainfall and in making due allowance for this in the date of planting.

Dr. Wiltshire suggested that if there were difficulties in getting supplies of copper sulphate a fungicidal dust might possibly be manufactured by pulverising crude copper ore. He continued that at the request of Mr. Clay he had written to Professor Reddick of Cornell to enquire whether he had any blight-resistant material he would be willing to send to Kenya, but he had no yet had a reply. He suggested that it would be desirable to carry out an investigation in Kenya on the economics of spraying for blight.

Sir Geoffrey Evans referred to the work which had been carried out in Russia on the use of potato rose ends for seed purposes, some particulars of which he observed had been included in the note circulated to the Committee as Agric.29. He had for some time been investigating at Kew the possibilities of preparing and using this form of potato planting material and said that a satisfactory technique had now been developed. The method consisted of cutting a thin slice from the rose ends of tubers and encouraging the formation of suberin on the cut surface. This was brought about by keeping the slices on damp peatmoss for 15 hours. The slices remained viable for several months. The use of these slices as planting material would result both in a very considerable saving in transport and also in a saving of potatoes for consumption. Their commercial use, however, would depend on the weight of the crop obtained from slices compared with the weight of the crop obtained from ordinary seed potoates. He added that experiments to determine this had been laid down at Kew and during the summer he would be very glad to show these experiments to any members interested.

Professor Engledow, who had to leave the meeting before the discussion of this item, has supplied the following observations:- "The potato can evidently be grown in several of the Colonies and, in some, continuous supply of good, reasonably virus-free, seed potatoes can be arranged. An increase in potato acreage would greatly improve the food supply in most Colonies since for its vitamin C and protein the potato is preferable to some of the indigenous starchy foods. With the new potatoes available from South America, types high in vitamin and protein may be obtainable. On the foundation of increased production in various Colonies for war needs should be built up such an extension of potato growing as will enhance native dietary to the fullest possible extent. Plans to this end should be laid down without delay".

The Committee took note of the information which had been circulated to them and was of the opinion that there appeared to be strong grounds for continuing investigations on the raising of seed potatoes in certain dependencies.

(6A)

COLONIAL ADVISORY COUNCIL OF AGRICULTURE, ANIMAL HEALTH AND FORESTRY.

Agric.29

Committee on Agriculture.

Production of Seed Potatoes in the Colonial Empire.
(Previous C. A. C. 627)

As members were informed at the 53rd meeting of the Council, the memorandum on the raising of seed potatoes in Colonial Dependencies has been transmitted by the Secretary of State to Colonial Governments concerned. Observations on the memorandum have now been received from a number of Colonies and these are summarised below for the information of members.

Gambia. Such trials as it has been possible to make indicate that seed potatoes do not grow well in the Gambia, but it is not known at present whether this is due to virus diseases or to local climatic conditions. Only an entomologist could say whether the vectors of the viruses are present in the Gambia, but it is possible to indicate this empirically if, as the result of further experiments, it is found that healthy potatoes can be grown in the same plots as potatoes infected with virus diseases. It is too late to experiment further this season, but the Department of Agriculture is trying to obtain an adequate supply of seed potatoes for further trials towards the end of September next in various parts of the Colony.

Kenya. According to the Senior Plant Pathologist good seed potatoes can be produced in Kenya, where potatoes have been grown for many years without frequent importations of fresh stock. It cannot be said that virus diseases are the limiting factor in potato production at the present time. Until the recent epidemic of Blight, certain growers in favoured localities have been able to produce from their own seed good crops for long periods. The crops are not free from virus disease; there is a low percentage of leafroll and severe mosaic and crinkle are occasionally met with. Streak does not occur. It is possible to select from these crops plants showing practically no sign of disease as was done in 1940. The position in the Native Reserves is more complicated, varieties are mixed and so far as is known have not been rejuvenated by the introduction of healthy seed for some years. Although virus diseases are abundant, degeneration has not progressed as far as might be expected if conditions obtaining in say, the South of England occurred. Apparently some of the so-called native varieties have a certain tolerance as they continue to give fair yields and do not show severe virus symptoms.

Little is known about vectors in Kenya. If aphids are the chief insect vectors conditions do not appear to be favourable to their development in many potato-growing areas. In the high districts Aphids are rarely seen on a potato crop. The only aphis officially recorded on potatoes is Aphis solanella Theob. Myzus persicae has been recorded, but not, apparently, on the potato. A species of white fly (Bemisia) and Jassids are frequently numerous on the potato but there is no evidence that they are vectors. The whole subject requires the attention of an entomologist.

In European cultivation degeneration is slow and sufficiently slow to admit of the selection and propagation of apparently healthy plants. In the Native Reserves virus diseases are more widespread and serious and may be spread not so much by insect vectors as by the native custom of planting the smallest tubers. The policy of the Department of Agriculture is to encourage

encourage the planting of the two blight resistant varieties. It is expected, however, that these will be planted chiefly by natives and that Europeans will return to the susceptible and more profitable varieties as spraying facilities become available. The Senior Plant Pathologist has also prepared a scheme for the production of certified seed potatoes in Kenya. This consists in propagating on selected sites imported foundation stock seed (e.g. Scotch S.S. or TS (A)) under direct supervision by the Department of Agriculture. Each plant would be lifted separately and the progeny planted as a unit. From these a number would be selected to provide a nucleus and the remainder multiplied under farm conditions but still under departmental supervision. The crop would be inspected and rogued during growth and the produce bulked for distribution to selected farmers or Government farms as stock. Any farmer who wished to have his crop certified would have to undertake to grow seed from the above stock or from once-grown stock and would have to comply with certain conditions regarding site, distance from other potatoes, cultivations and probably early cutting of the haulm. The crop would be inspected during growth and would have to attain a certain standard of purity and freedom from leafroll and severe mosaic. The Senior Plant Pathologist states that the question of Blight must be taken into consideration. The systematic spraying of crops from now on may be necessary if the cultivation of modern varieties is to be continued. Blight also alters the prospects of improving the general standard of potato crops in the reserves, and possibly the only course is to try and improve by selecting such varieties as Kinongo and Kerai.

The Director of Agriculture states that arrangements have been made with the Potato Testing Station, Corstorphine, Edinburgh for the importation in February this year of a small quantity of virus-free seed potatoes of proved quality which will be used as a nucleus for building up stocks for the future provision of high quality seed. It will not be possible at present to give effect to the full scheme for the production of certified seed potatoes as outlined above. He adds that the recent appearance of Late Blight in Kenya has considerably reduced the production of potatoes by both non-Natives and Natives, a position which will not be rectified until the necessary adjustments can be made for the cultivation of the crop. It is probable that under non-native conditions spraying will have to be carried out as a routine measure if the more profitable but more susceptible varieties are to continue to be grown. In native areas where spraying is not practicable attention is being concentrated on the selection and propagation of the so-called "native" varieties which have shown a measure of resistance to the disease.

The Director of Agriculture states in a communication to Dr. Tempany, which has just been received, that the fact that Kenya has continued to produce potatoes for many years without recourse to regular importations of fresh seed is sufficient indication that seed can be produced here and that degeneration is not rapid. He considers, that given the necessary facilities for a scheme for the production of healthy seed a high production of seed could be produced. As far as is known from field observations the chief virus diseases are Leaf Roll and forms of Mosaic Complex ranging from Mild Mosaic to Crinkle. Leaf Drop Streak has not been observed. A number of selections were made in 1940 which on being propagated as units showed only very mild mosaic and could, on further selection, have formed a foundation stock. Although no study has been made of the life history and movement of the insect vectors it is possible that insects other than those responsible for degeneration in England may be implicated. The Entomologist, Dr. Le Pelley, has had considerable experience in virus diseases work on potatoes under Dr. Salaman and the Department

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ment is therefore in a position to undertake the study of the factors concerned in degeneration and to launch a scheme for the production of good seed when the opportunity occurs. The recent outbreak of Late Blight has greatly reduced production and efforts are being concentrated on trying to produce potatoes for both civil and military requirements rather than building up a scheme for seed production.

Amani. The Director of the East African Agricultural Research Station states that owing to the present lack of exact knowledge on the subject, the best course of action would be (1) to select the best and healthiest table varieties from existing mixed stock in those areas still uninfected with Late Blight. Selections for multiplication should be grown in isolation, rogued and harvested earlier than wares. In the meantime the introduction of all potatoes in the blight-free areas should, he considers, be prohibited except in those introduced through quarantine; (2) to carry out full investigations into the degeneration of the potato varieties in East Africa (by Dr. Storey). It is by no means certain that degeneration is inevitable in blight-free areas; (3) to investigate the possibility of carrying out potato breeding in Tanganyika as a long range project by a trained plant breeder, West Usambara, where potatoes are reported to flower and fruit might be a suitable centre, but not for the selection of blight-resistant varieties since that region is still free from Phytophthora infestans. The breeding programme should take advantage of the possibilities offered by the short day species from South America now at Cambridge. The chief potato varieties in East Africa have been bred and selected for temperate long day conditions.

The Director regards the breeding of new varieties for the Tropics as a most necessary undertaking particularly since potatoes have now become an important part of native diet in highland areas and would become so in lower and hotter districts if suitable varieties could be developed. The recent outbreak of Late Blight makes it more important to find new and resistant varieties.

Mr. Hill considers that potato breeding work could appropriately be done by the East African Agricultural Research Station given the necessary staff, but could not be undertaken at Amani for climatic reasons.

Jamaica. The Plant Pathologist states that the production of seed potatoes in the higher potato growing districts should be practicable in theory, but has not been successfully carried out to any extent in practice. Although it is practicable to keep seed from the spring crop to the following autumn crop it cannot be kept until the succeeding spring crop. It is considered doubtful whether the small potato growing industry could economically produce seedpotatoes in competition with imported seed potatoes so easily obtained in peace time.

Little data is available regarding mosaic diseases. It is probable that if potatoes were grown from locally produced seed mosaic would become more serious. The most serious disease of potato in Jamaica is Blight and under certain weather conditions serious losses may occur. Many of the cultivators look on the crop as a gamble.

Dr. Bawden, in commenting on the above information, states that if the use of home produced seed is out of the question for reasons other than virus diseases the use of imported seed would appear to be the simplest solution. The problem of blight calls for local trials with different potato varieties coupled with treatments to hasten maturation. Even under tropical conditions spraying with Bordeaux mixture ought to prolong the life of the haulms considerably and then killing the haulms with acid some

time

time before the crop is harvested ought to safeguard the tubers from rotting. This can only be settled by experiments on the spot.

In connection with Professor Engledow's remarks at the meeting of the Committee held on the 8th September (Item 3(d)(i) of the minutes of the 52nd. meeting also refers) regarding potato planting material, members may be interested to know that Dr. Tempany has recently received a translation of a Russian article on the use of potato rose ends for seed purposes (How to Plant and Cultivate Potato Rose Ends, by V. Kharchenko, Moscow Bolschvik, 1942). The paper describes the method of using for planting purposes the rose ends of tubers intended for human consumption. The possibility of utilising this planting material was shown by T.D. Lysenko. It is stated that the rose ends should be well preserved and should undergo "chitting" before being planted. It is not stated whether the cut surface is treated or not. It is interesting to note that the writer advocates the planting of rose ends on the side and not on the bottom of the drills. An account is also given of the growing of potatoes from "eyes", shoots and potato peelings.

Propagation from "eyes" consists in cutting out the sprouts when 5 or 6 centimetres in length with a small piece of the tuber and after bringing on in a glasshouse or hotbed, planting in the field. Propagation from shoots consists in cutting the young shoots in such a way that every part has some foliage. These are also brought on in a glass house or hotbed before planting in the field. Propagation from "eyes" and shoots is recommended only on a small scale, i.e. for private allotments or for the purpose of multiplying a particular variety of potato; 15 to 20 plants can be obtained from each tuber.

Uganda. Virus diseases have not yet been observed in Uganda. The most serious pest is potato blight which has spread to Kigezi, the main potato growing area, andwhich will probably spread throughout the Protectorate in 1943. It is reported that Mr. Hargreaves has no record of Aphides of potato in Uganda.

Malta. In a recent report on seed supplies, distribution and production, and other matters connected with horticulture, Mr. Skillman states that indications that seeds saved from selected fields of the present early winter crops will yield a reasonable tonnage, but that imported Scotch or Irish seed will yield at least another ton per acre. Seed from this will carry on for at least another three or four seasons, whereas it is doubtful whether local seed would maintain an economic yield after next spring. The reason for this is a probable form of degeneration no entirely attributable to virus diseases.

Three crops of potatoes are grown during the year, spring, summer and winter, the first being the most important.

So far as Mr. Skillman was able to judge during his early inspections, virus diseases are not so prevalent as was first expected. He found that the allegedly three times grown Up-to-Date and local stocks of Fina (a variety resembling "White Beauty of Hebron") comparatively free from virus. There was no sign of the aphis vector Myzus persicae, on the other hand leaf hoppers were common on potato plants in all fields.

/In

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In a supplementary report Mr. Skillman stated that after heavy rains in November it was evident that the winter crop, particularly Up-to-Date, was substantially affected by virus disease, some stocks of Up-to-Date received from Cyprus in the spring showing more than 75% of severe virus. Stocks of Arran Banner were very much better because they originated from Ireland in the winter of 1940/41. Some stocks of Fina contained between 25 and 30% of severe leaf roll mosiac.

The only aphid found on potatoes closely resembles Aphis rhamni.

L. LORD

Secretary.

Colonial Office,
Palace Chambers,
Bridge Street, S.W.1.

7th April, 1943.