

Cothaithigh Breise a chur ar Fáil

Bíonn i bhfad níos mó mianraí ag teastáil ó bhó bhainne ná ó bhó dhiúil agus ceaptar go bhfuil na buicéid mianraí molásbhunaithe sách maith leis na bunmhianraí a chur ar fáil. Tá seans go dteastóidh cineál eicint d'fhorlónadh fosfáite mar gheall ar na leibhéil ísle fosfáite atá i mbeathú na mbeithíoch. Le linn thogra AranLIFE triaileadh fosfáit a chur ar fáil i mbuicéid líreacáin mianraí agus meastar gur bealach é seo le cinntiú go mbíonn roinnt fosfáite ar fáil ar feadh na bliana agus bíonn na hainmhíthe in ann é a stóráil don am a dteastaíonn sé uathu. Bhí fosfáit sa mbuicéad mianraí molásbhunaithe chomh maith leis na riandúile eile a bhí in easpa - copar, seilíniam agus cóbalt. D'fhéadfadh leibhéil fosfáite na dtáirgí seo a bheith idir 4% agus 9%, dá mbeidís níos airde ná sin ní bheadh blas iontach orthu.

Tá bólaís eile ann a scaoileann amach riandúile go mall agus tá copar, seilíniam agus cóbalt iontu agus seo bealach le heaspa a sheachaint. Cuirtear na bólaís isteach i mbolg an ainmhí. Leánn na bólaís go mall sa mbolg agus soláthraíonn riar leantach riandúile thar thréimhse ama. Leánn na bólaís amach is amach le linn an phróisis seo agus ní bhíonn aon fhuíoll fágtha sa gcogansach. Ba cheart cloí le treoracha an déantóra agus bólaís á n-úsáid.

Achoimre

- Ba cheart i gcónaí forlónadh mianraí a phlé ar dtús le do thréidlia le theacht ar an rud is fearr a d'fheifeadh d'fheirm.
- Is riandúile tábhachtacha iad copar, cóbalt agus seilíniam i mbeathú beithíoch agus nuair a bhíonn beithíoch ró-íseal iontu cuireann sé as don chaoi a ndéanann an beithíoch. Cé go gcuirtear míleán go minic ar easpa riandúile i gcás drochtháirgeachta is minic gur drochbheathú go ginearálta agus/nó péiste nó leith uisce is cúis le gan beithíoch a bheith ag teacht aige fhéin.
- D'fhéadfadh sé tamall a thógáil go dtí go dtagann na comharthaí coitianta a bhaineann le heaspa riandúile chun cinn, b'fhéidir nach dtabharfaí rátaí níos moille fáis ná torthúlacht níos laige faoi deara ach cuireann siad as do bhrabús.
- D'fhéadfadh deacracht a bheith le heaspa fosfáite sa mbeostoc ar Oileáin Árann, cuireann sé as do chuile chineál beostoic ach bíonn sé níos coitianta i seanbheithigh bhainne i ndiaidh go leor laonna mar go n-íslíonn an stór fosfáite le chuile bhreith.
- D'fhéadfadh líreacáin mianraí cuidiú le babhtáí d'easpa mianraí a laghdú. Moltar líreacáin ina bhfuil idir 4-9% fosfáite iontu a úsáid.
- Ná tabhair mianraí beithíoch do chaoirigh go deo, ná an chaoi eile timpeall. D'fhéadfadh caoirigh nimhiú copair a fháil as mianraí beithíoch.
- D'fhéadfadh nimhiú a theacht as an iomarca forlónadh freisin nó a bheith ina chúis le hidirghníomhaíochtaí díobhálacha eile san ainmhí.
- Braitheann an réiteach is fearr ar do chóras feilméarachta, ar chaighdeán na talún agus ar an gcineál stoic atá ar d'fheirm. Faigh comhairle tréidlia i gcónaí faoin gcóras is fearr a d'fheifeadh d'fheirm.

Supplying additional nutrients

The mineral needs of a suckler cow are significantly lower than that of a dairy cow and, in general, molasses-based mineral buckets are believed to be adequate to supply minor minerals. The low levels of phosphate in the cattle's diet means it is likely some form of phosphate supplementation will be required. Supplying phosphate in mineral lick buckets was trialled during the AranLIFE project and it seems to be a way of ensuring some phosphate throughout the year which the animal can store for times of need. The molasses based mineral bucket contained phosphate and the other deficient trace elements copper, selenium and cobalt. Phosphate levels in such products can range from 4% to 9%, higher levels can affect their palatability.

There are also slow release trace element boluses, containing copper, selenium and cobalt to prevent deficiency occurring. Boluses are administered into the animal's stomach. After ingestion the boluses slowly dissolve, providing a continuous supply of trace elements over a period of time. During this process the boluses completely dissolve, leaving no residue in the rumen. Use of boluses should be based on manufacturer's instructions.

Summary

- Mineral supplementation should always be discussed first with your veterinary surgeon to ensure the best approach for your farm.
- Copper, cobalt and selenium are important trace elements in cattle nutrition and deficiency impacts on performance. However whilst a trace element deficiency is often blamed for poor production, poor general nutrition and/or the presence of worms or liver fluke, are often more common causes of poor performance.
- The classic clinical signs associated with trace element deficiencies can be slow to develop, lower growth rates, poorer fertility may go un-noticed but is affecting profit margins.
- Phosphorous deficiency in livestock can be problematic on the Aran Islands; it can affect all livestock but is more common in older cows, after repeated calvings as the animal's phosphorus store is lowered with each calving.
- Mineral licks can help reduce the incidences of mineral deficiency. It is advisable to use licks that include phosphorous, usually between 4-9%.
- Never feed cattle minerals to sheep, and vice-versa. Cattle minerals may cause copper toxicity in sheep.
- Over-supplementation could cause toxicity or cause other undesirable interactions in the animal.
- The best solution depends on your farming system, on land quality and on the type of stock on your farm. Always get veterinary advice as to which regime is best suited to your farm.



Bileog Eolais AranLIFE: MOLTAÍ MAIDIR LE FORLÍONADH MIANRAÍ DO BHEOSTOC INNILTE AR OILEÁIN ÁRANN

AranLIFE Information Sheet: MINERAL SUPPLEMENT RECOMMENDATIONS FOR GRAZING LIVESTOCK ON THE ARAN ISLANDS

CURTHA LE CHÉILE LE CÚNAMH IONSTRAIM AIRGEADAIS LIFE AN CHOMHPHOBAIL EORPAIGH
PRODUCED WITH THE CONTRIBUTION OF THE LIFE FINANCIAL INSTRUMENT OF THE EUROPEAN COMMUNITY



Níltear ag féachaint leis na riachtanais mianraí agus vitimíní uilig a bhíonn ag beostoc innilte na n-oileán a chlúdach sa mbileog eolais seo. Sa mbileog seo gheobhaidh feilméaraí amach faoina príomh-mhianraí a bhíonn in easnamh i bhforáiste agus in ainmhí innilte agus tá na moltaí atá ann bunaithe ar obair anailiseach a rinne an togra AranLIFE.

Ar dtús is ceart i gcónaí easpa mianraí agus forlónadh a phlé le do thréidlia féachaint le theacht ar an rud is fearr a d'fheifeadh d'fheirm.

This information sheet does not attempt to cover all mineral and vitamin requirements of grazing livestock on the islands. The purpose of this information sheet is to inform the farmer of the main mineral deficiencies found in forage and in the grazing animal, and the recommendations are based on analytical work completed by the AranLIFE project.

Mineral deficiency and supplementation should always be discussed first with your veterinary surgeon to ensure the best approach for your farm.



Teastaíonn 17 mianra éagsúil ar a laghad ó bheithigh agus caoirigh le fanacht folláin agus táirgiúil. Teastaíonn cuid mhaith de na mórdhúile ar nós cailciam agus fosfar uathu. Ní bhíonn mórán de na dúile eile, ar a dtugtar miondúile nó riandúile uathu. Nuair a bhíonn easpa mianraí ar ainmhí d’fhéadfaidís a bheith ag fulaingt, nach mbeidís ag teacht acu féin go maith agus nach mbeidís chomh torthúil, rud a laghdódh an teacht isteach airgeadais. I measc na riandúile is tábhachtaí go heacnamúil de tá Copar, Seiléiniam Cóbalt agus laidín. Níl easpa since nó mangainéise chomh dona.

Easpa Mianraí i bhFéarthailte Oileán Árann

Léiríonn sonraí náisiúnta na hÉireann i leith anailís foráiste go dteastaíonn méid áirid forlíonadh rialta ó bheithigh agus caoirigh a bhíonn ar bheathú foráiste le go mbeidh an cothú mianraí is fearr á fháil acu chun an cothromas ceart mórdhúile agus riandúile a chinntiú. Mar gheall ar an gcóras feilmearachta atá ar Oileáin Árann, ithir saorshilteach agus innilt geimhridh ar fhéar le céatadán ard d’ábhar feoite, thuigfeá go mbeadh easpa mianraí ann. Léiríodh é seo in anailís foráiste a déanadh thar thréimhse dhá bhliain ó 2015. I dTábla 1 léirítear na torthaí ó anailís mianraí a déanadh ar shamplaí d’fhéar geimhridh agus féar samhraidh agus cuirtear na torthaí ón bhforáiste ar Oileáin Árann i gcomparáid leis na leibhéil a mholtar do bharrfheidhmiú ainmhithe.

Tábla 1. Anailís mianraí ar fhoráiste as feilmeacha in Oileáin Árann i gcomparáid leis na leibhéil mholta bunaithe ar Ábhar Tirim. (Samplaí foráiste a bailíodh sa tréimhse ó Mhárta 2015 go Feabhra 2017).

	Fosfar Phosphorous %	Copar Copper mg/kg	Seiléiniam Selenium mg/kg	Cóbalt Cobalt mg/kg	laidín Iodine mg/kg	Sinc Zinc mg/kg	Mangainéis Manganese mg/kg	Sóidiam Sodium mg/kg	Clóiríd Chloride mg/kg
Feilmeacha Oileán Árann Aran Island Farms	0.17	6.0	0.1	0.03	3.09	27.4	75	0.46	0.77
Molta Recommended	0.31	10	0.1	0.1	0.5	30	40	0.1	0.25

Is leor iad na mórdhúile cailciam, sóidiam agus maignéisiam atá ar fáil i bhforáiste Oileán Árann. Feictear ón anailís go bhfuil na leibhéil fosfair, copair agus cóbailt atá i bhféarthailte Oileán Árann faoina leibhéil mholta agus go bhfuil seiléiniam idir eatarthu.

Níor cheart brath amach is amach ar anailís foráiste as féin áfach mar go dtagann easpa mianraí isteach faoi dhá chatagóir. Easpa príomha, sin nuair nach bhfuil na leibhéil sách ard sa bhforáiste agus easpa tánaisteach nuair atá neart den mhianra sa bhforáiste ach go gcuireann mianra eile as don chaoi a súitear isteach é. Tá dúile ar nós molaibdéineam, sulfar agus iarann in ann cur as do chopar agus seiléiniam mar shampla trína n-infhaighteacht a laghdú, rud a fhágann easpaí.



Cattle and sheep need at least 17 different minerals to maintain good health and productivity. The major elements such as calcium (Ca) and phosphorous (P) are required in relatively large amounts. Other elements, known as minor or trace elements, are required in much smaller quantities. A deficiency in minerals can lead to animal suffering, poor performance and lower fertility leading to lower economic returns. The most economically important trace elements include copper (Cu), selenium (Se), cobalt (Co) and iodine (I). Deficiencies in zinc (Zn) and manganese (Mn) are less important.

Mineral deficiencies in Aran Island grasslands

The national Irish data for forage analysis indicates that optimal mineral nutrition of cattle and sheep on forage-based diets involves some degree of routine supplementation to ensure balanced inputs of the essential major and trace elements. The Aran Islands’ farming system, with free draining soils and winter grazing of grass with a high percentage of dead material, would indicate that mineral deficiencies are likely. This was reflected in forage analysis taken over a two year period from 2015. Table 1 outlines the results from mineral analysis of winterage and summer forage samples and compares results from forage on the Aran Islands with levels recommended for optimal animal performance.

Table 1. Mineral analysis of forages from farms on the Aran Islands compared with recommended levels based on Dry Matter. (Forage samples collected over the period March 2015-February 2017).

	Fosfar Phosphorous %	Copar Copper mg/kg	Seiléiniam Selenium mg/kg	Cóbalt Cobalt mg/kg	laidín Iodine mg/kg	Sinc Zinc mg/kg	Mangainéis Manganese mg/kg	Sóidiam Sodium mg/kg	Clóiríd Chloride mg/kg
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The major elements calcium, sodium and magnesium are adequately provided in the forages of the Aran Islands. The analysis indicates that phosphorous, copper and cobalt levels in Aran Island grasslands are below recommended levels, with selenium and zinc borderline.

However, forage analysis alone should not be used as a complete guide, as mineral deficiency falls into two categories. Primary deficiency, where there is insufficient levels in the forage; and secondary deficiency, where the mineral is sufficient in the forage but another mineral interferes with its absorption. For example elements such as molybdenum, sulphur and iron can interfere with copper and selenium by reducing their availability leading to deficiencies.



Easpa Mianraí i mbeithigh Árann

In éineacht leis an anailís ar na samplaí foráiste taispeánann sampláil fola easpa mianraí freisin, ach ba cheart a bheith cúramach ag léamh na dtorthaí. Bíonn formhór an fhosfair mar shampla á stóráil i gcnámha an ainmhí agus tá sé in ann bogadh isteach i gcóras imshruthaithe na fola nuair a theastaíonn sé agus mar sin d’fhéadfadh neart fosfair spáint suas sa sampla fola cé go mbeadh easpa ar an ainmhí. I gcás sampláil fola do chóbalt chuirfeadh sé duine amú freisin mar gheall ar an gcaoí a n-úsáideann an t-ainmhí é. Ní stórálann siad é agus mar sin bíonn athsholáthar leanúnach riachtanach, m.sh. níor mhór deoch cóbailt a thabhairt do chaoirigh ar na hoileáin chuile 2-3 sheachtain le go ndéanfaidh siad an treisiú is fearr. Thóg AranLIFE, agus iad ag obair leis an tréidlia áitiúil, samplaí fola ó shlám beithíoch ar na trí oileán. Tháinig na torthaí le torthaí na hanailíse foráiste go bhfuil easpa ann de na mianraí copar agus seiléiniam. Bhí an meánleibhéal copair ag an leibhéal b’íochtarai den scála agus suas le haon ceathrú de na beithigh a tástáladh faoin ngnáthleibhéal. Bhí daichead a trí faoin gcéad de na hainmhithe a tástáladh do seiléiniam faoin ngnáthleibhéal.

Bhí torthaí na hanailíse fola mórán mar a chéile le hanailísí a bhí déanta roimhe sin in Éirinn, le heaspa copair ag spáint ar an easpa ba choitianta i mbeithigh mairteola agus gan easpa cóbailt agus seiléiniam chomh coitianta sin. Breathnaíonn sé áfach go bhfuil níos mó easpa fosfair, seiléiniam agus cóbailt ar Oileáin Árann i gcomparáid leis an mórthír. Tá fosfar tábhachtach do chillscannáin, soláthar fuinnimh, crapadh matán, goile maith agus múnúlú cnámh. Bíonn easpa fosfair in ainmhí coitianta i bhféara a fhasann ar ithreacha atá íseal i bhFosfáit, go háirithe nuair a bhíonn go leor seanfhéar sna féara, ar nós féar geimhridh. Tábla 2 - Comharthaí go bhfuil easpa sna beithigh.

Tábla 2. Comharthaí go bhfuil easpa sna beithigh

Mianra Mineral	Comharthaí go bhfuil easpa sna Beithigh Deficiency Symptoms in Cattle
Fosfar Phosphorous	Mall ag fás, goile laghdaithe, marbhánta agus torthúlacht íseal, goin ocrais nó Pica nuair a thosaíonn beithigh ag ithe rudaí ar nós clocha, plaisteach, adhmaid. Slow growth rates, decreased appetite, listlessness and poor fertility and a condition known as ‘depraved appetite’ or Pica, where cattle start eating things like stones, plastic, timber.
Copar Copper	Mall ag méadú in éineacht le sciúradh agus i gcásanna dona tíuchan sna cnámha timpeall ar na hailt. Go minic ceanglaítear neamhthorthúlacht i mbeithigh le heaspa copair. Poor growth and scouring, and in extreme cases a thickening of bones around the joints. Infertility in cattle is also often linked to copper deficiency.
Cóbalt Cobalt	Tugtar ‘pine’ freisin air, nuair a bhíonn easpa cóbailt ann ní dhéanann beithigh go maith agus ní bhíonn goile maith acu. I gcásanna dona bíonn na hainmhithe croite, lag agus anaemach. Also known as ‘pine’, cobalt deficiency results in ill-thrift accompanied by poor appetite. In severe cases, animals become emaciated, weak and anaemic.
Seiléiniam Selenium	Aithnítear easpa seiléiniam go forleathan mar Ghalar ‘White Muscle’, drochthreisiú agus neamhthorthúlacht. D’fhéadfadh easpa seiléiniam cur as d’fheidhmiú atáirgthe freisin. Lack of selenium is mostly widely recognised as White Muscle Disease, ill-thrift, and infertility. Lack of selenium can also cause poor reproductive performance.

B’fhéidir go dteastódh maignéisiam le linn tréimhsí riosca teitine, is éard is cúis le teitine ná titim tobann ar an leibhéal maignéisiam sa bhfuil ach ní fheictear é ach go hannamh sna hoileáin. Tarlaíonn sé de ghnáth do bheithigh bhainne/ d’ainmhithe lachta a mbíonn go leor bainne acu san Earrach nó sa bhFómhar nuair nach mbíonn dóthain maignéisiam á fháil ón mbeathú. Bíonn baint ag rudaí eile freisin leis ar nós aimsir fhliuch.

Mineral deficiencies in Aran Island cattle

Coupled with analysis of forage samples, blood sampling can help to further identify mineral deficiencies; however, you should be cautious when interpreting results. For example, the majority of phosphorous is stored in the animal’s bones and can move into the blood circulatory system when needed, thus blood sampling could indicate sufficient phosphorous, even though the animal is deficient. Blood sampling for cobalt can also be misleading due to the way it is utilised by the animal. It is not stored so it needs continuous replenishment, e.g. sheep need a cobalt drench every 2 – 3 weeks on the islands for maximum thrive. Working with the local veterinary surgeon, AranLIFE took blood samples from cattle in a number of herds across the three islands. The results supported the findings from forage analysis and indicated that the minerals copper and selenium were deficient. The average level of copper was on the lower end of the scale and almost one quarter of the cattle tested were below the normal range. Forty three percent of animals tested for selenium were below the normal range.

The results of the blood analysis are broadly in-line with previous Irish studies; where copper deficiency is the most common deficiency to affect beef cattle, with cobalt and selenium deficiency being less common. However there appears to be a higher level of phosphorous, selenium and cobalt deficiency on Aran Islands compared to the mainland. Phosphorus is important for cell membranes, energy production, muscle contraction, appetite and bone formation. Phosphorus deficiency in cattle is common on pastures growing on low-P soils, particularly when pastures are dominated by dead grass, like winterage. Deficiency signs in cattle are outlined in Table 2.

Table 2. Deficiency symptoms in cattle

Mianra Mineral	Comharthaí go bhfuil easpa sna Beithigh Deficiency Symptoms in Cattle
Fosfar Phosphorous	Mall ag fás, goile laghdaithe, marbhánta agus torthúlacht íseal, goin ocrais nó Pica nuair a thosaíonn beithigh ag ithe rudaí ar nós clocha, plaisteach, adhmaid. Slow growth rates, decreased appetite, listlessness and poor fertility and a condition known as ‘depraved appetite’ or Pica, where cattle start eating things like stones, plastic, timber.
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Seiléiniam Selenium	Aithnítear easpa seiléiniam go forleathan mar Ghalar ‘White Muscle’, drochthreisiú agus neamhthorthúlacht. D’fhéadfadh easpa seiléiniam cur as d’fheidhmiú atáirgthe freisin. Lack of selenium is mostly widely recognised as White Muscle Disease, ill-thrift, and infertility. Lack of selenium can also cause poor reproductive performance.

Magnesium may be required during tetany risk periods; tetany is caused by a sudden drop in magnesium blood levels of magnesium but is rarely seen on the islands. It usually occurs in high-yielding dairy cows/lactating animals in spring and autumn and is associated with decreased availability of magnesium from the diet. Stress factors such as wet weather conditions are contributing factors.