



Farm Management Handbook Update

Department of Agriculture
Falkland Islands Government

November 2007

THIS PAPER WAS PASSED AT THE SEPTEMBER 2007 MEETING OF THE AGRICULTURAL ADVISORY COMMITTEE

Title of Report: Soil Testing and Site selection Guidelines for Cropping/Pasture works utilising Pasture Improvement Programme (PIP) funding

1. Purpose

- 1.1 To improve the establishment, yields and subsequent utilisation of forage crops and pastures via improved site selection and soil testing.

2. Recommendations

- 2.1 That all future first year PIP crops/pasture sites be scrutinised according to the criteria outlined in existing PIP planning plus those contained in this paper. As follows:-
- Farmer to initially identify potential sites based on DOA site selection guidelines (see attachment 1). Each sample must be accompanied with soil test application sheet (attachment 2).
 - A soil sample for each potential site be collected with the sample made up of at least 5 sub-samples, collected according to DOA soil sampling guidelines (see attachment 3).
 - Number of potential sites should be restricted to a maximum of 3 per proposed PIP site (in the first instance).
 - Soil test to be carried out by the DOA for soil pH only, sites below pH 4.6 rejected immediately.
 - There will not be any charge for testing these preliminary soil samples.
 - Based on preliminary soil sample test results, those sites with a pH greater than 4.6 will be further investigated for suitability.
 - DOA to visit farm and look at selected sites matching site selected to guidelines (see attachment 4). A more comprehensive soil test will be taken looking at soil pH, phosphorous, potassium and calcium. Initially a **maximum of 3 sites** may be sampled per intended crop/pasture PIP plan site. There will be a farm cost to the PIP of £10 per sample.
 - Soil test to be reviewed and if acceptable the sites will be approved. The crop/pasture must be approved as per normal via annual PIP plans.
- 2.2 The site selection and soil testing should not be viewed solely on the basis of the initial crop. It should also take into account the long term sustainability and productivity of the final pasture.

3. Background

- 3.1 In 2006/07 approximately 200 ha of improved pasture and 450 ha of forage crops were sown utilising PIP funding.
- 3.2 In 2007/08, farm PIP plans have budgeted on approximately 950 ha of improved pasture and 450 ha of forage crops being sown.
- 3.3 This utilises a large proportion of PIP funding.
- 3.4 On many occasions crop/pasture failure is attributed to adverse seasonal conditions. Whilst this can be the case it is often exaggerated by poor site selection and the utilisation of low fertility acidic soils.
- 3.5 It is a fundamental concept that the majority of plant species require soils with a favourable pH (greater than 5.5). Acidic soils are more limiting in the majority of other nutrients, in particular phosphorous.
- 3.6 Various reports suggest that the average Falkland Islands soil has a soil pH of 4.6.
- 3.7 Changes will be implemented into the 2008/09 PIP planning requirements, on uncultivated ground. Other cases are to be dealt with on a case by case basis at the discretion of the Agricultural Advisor – Agronomy.
- 3.8 Farms that fail to meet primary or secondary soil testing/site selection requirements will be required to “keep looking” for suitable ground if cropping or pasture works are intended. The DOA is currently researching other opportunities for those farmers that cannot meet these requirements, for example: protein supplementation via lupins and managed grazing of native pastures.

DOA Site Selection Guidelines

Listed below are guidelines that should enable farmers to identify “lower risk” sites.

Soil Depth – Ideally one spade blade depth (12 inches) on top of clay. Shallow soils although often slightly more fertile, reduce the ability for roots to develop properly. Shallow soils also reduce the soils moisture holding capacity. As such a crop is more likely to suffer from drought problems in a dry summer, reducing yield and quality of the forage. Deep peat soils generally tend to be more acidic and therefore less fertile.

Stock Water availability – Animals need to drink as well as eat.

Shelter (Animals) – Animals on small areas of crops, still need shelter, shelter could come in various forms. Including valleys, leaving areas of vegetation (cinnamon grass, fachine etc), and these plants may also be able to supply trace elements to the animals.

Shelter (Plants) – In 2006/07 many crops showed the advantage of protection from the prevailing westerly wind. Soil and seedlings are particularly vulnerable in sites open to westerly winds. Sites are also more prone to drying out reducing potential yields and plant quality.

Aspect – North facing slopes catch more sunlight which results in warmer soils and more growth.

Drainage – Most important when feeding brassicas in autumn and winter.

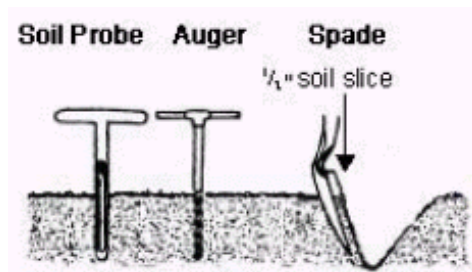
Access – Ease of access for machinery (machinery travel costs), goose control and stock management. The best options are close to settlement, a road or both.

PIP Soil Testing Requirements

Preliminary soil test

The purpose of this initial soil test is to identify and eliminate sites according to the pH of the soil.

1. Using a spade cut a wedge as shown in the diagram below in the right.



2. Along one of the edges remove a slice (no more than the face of the spades depth).
3. Cut of the top inch (approximately) to remove the vegetative layer. This will normally be removed through cultivation and burning.
4. Place sample into a bag.
5. Take a minimum of 4 more samples from the site, insert a label using pencil into bag and label the outside of the bag with permanent marker (easiest to use a number).
6. Add details of the site, sample no, camp etc to soil test application sheet, ticking box labelled primary.

Secondary Soil Test

Initially this will be carried out by a member of the DOA and will look at the samples more accurately in regards to pH, Phosphorus, Potassium and Calcium.

1. Soil Sample to be taken using a soil corer (probe or auger), sample to be taken in a zig-zag pattern to cover a representative sample of ground (below). The more cores taken the better, a minimum of 40 for a sample.
2. As previously insert a label using pencil into bag and label the outside of the bag with permanent marker (easiest to use a number).
3. Add details of the site, sample no, camp etc to soil test application sheet, ticking box labelled secondary.

