Reseeding Without Ploughing

Many soil types and field locations make conventional reseeding inappropriate:
- **Very heavy soils**, if ploughed, can be very difficult to create a seedbed adequate for good grass establishment.
- **Shallow soils**, which cannot be ploughed, dictate the use of surface seeding techniques. The challenge is how to get rid of the previous sward.
- **Soils liable to flooding** need to be reseeded in the spring, to allow the grass to be well enough established before the following winter floods.
- **Fields prone to erosion** can be vulnerable to serious soil wash when ploughed.
- **Ploughing causes loss of the poaching resistance of good turf structure.**

The following techniques have been successfully used in these situations. They offer:
- Lower establishments cost.
- Low risks of soil erosion.
- Establishment grass while maintaining good soil structure on unstable soils (Especially on heavy clays & organic soils).
- The seed bed is more easily consolidated than under conventional cultivations
- Re-established sward is more poaching resistant.
- Re established sward should be relatively free from weeds.

There are three main opportunities detailed below:

**Option 1:** Autumn sward destruction followed by early spring seeding. (See Below)

**Option 2:** Early summer sward destruction followed by immediate seeding. (See p.3)

**Option 3:** Early summer sward destruction followed by Brassicas and autumn reseeding.(See p.3)

**Option 4:** Summer sward destruction followed by Brassicas and spring reseeding. (See p.4)

The operations that need to be implemented if adopting these techniques are detailed on the following pages:

**Option 1:** Autumn Sward Destruction - Early Spring Reseeding

In some areas and on certain soil types spring reseeding may not popular due to the difficulties of creating a seedbed, but this technique should still be considered:

1. Spray any weeds, which are not controlled by Glyphosate, like creeping buttercup, with an appropriate herbicide.
2. Check soil acidity and nutrition and correct with appropriate fertilizer & lime.
3. Correct any soil compaction problems with aerator and/or grassland sub-soiler.
4. Allow the old sward to grow to ±10-15cm. This allows a high leaf area to be achieved before application of Glyphosate, optimising the ‘take up’ of the chemical. This gives more effective control of perennial weeds, like Docks, Thistle & Couch grass. Ideal timing is September-October.

5. Introduced to graze off sward one week to 10 days after spraying. Exact timing of grazing must be in accordance with herbicide manufacturer’s recommendations. The sward may become less palatable if grazing is delayed.

6. The sward should be grazed down tightly, before winter, to remove all top growth, probably by dry stock being ‘fed out’ before housing. If there is any risk of poaching remove stock.

7. By early spring, any remaining leaf should have desiccated to a negligible amount. The soil will be essentially bare, with an easily worked light frost tilth on the top 1-2 cm of soil.

8. In a late spring, especially in fields with more challenging weed problems, there may be a need for additional herbicide pre sowing. (Check with the manufacturer, that the product is suited to use in the pre seeding period.)

9. Select a long-term mixture, which is appropriate to the future requirements of the field and get it delivered well before you are likely to need it.

10. The soil is now ready for shallow cultivation, as soon as soil conditions allow the field to be worked, without risk of compaction (or further flooding).

11. When you are ready to sow your grass. Use light harrows to produce a final tilth. Where there is good frost tilth and minimum residue trash from the previous grass, modern harrow comb can be adequate. Do not work deeper than 2-3 cm, especially on heavier soils.

12. Firm with a Cambridge roll - The field is now ready for broadcasting or drilling.

13. After seeding firm again with a Cambridge roll and follow with flat rolls if necessary.

14. Direct Drilling can be a useful tool in this system. Use a drill with narrow row spacing and cross drill for maximum ground cover. Only use direct drills in ideal soil conditions and seriously consider using slug pellets or the molluscs can have a feast.

Land sown using this technique should be allocated to a grazing regime. Most grasses do not flower in the year of sowing so bulk yield in the first six months can be disappointing. It can produce good excellent grazing of yield of very high quality.

If grass is established as soon as ideal conditions prevail, it has a good chance of establishing before a dry spell impedes growth. These established spring reseeds can be very drought tolerant and supply good grazing from mid summer through to the autumn, so production/acre in the sowing year will be better than expected. The long-term benefit is the safe re-establishment of top quality grass swards at lower overall cost with turf structure able to withstand a higher stocking than a conventional re-seed.
Option 2: **Early Summer Sward Destruction - Immediate Re-seeding**

When a field is identified as needing to be reseeded, it needs to be allocated to the cutting area – even if it is a grazing field! (or See ‘New Zealand Approach’ summarised at the end of this document.) Then follow the instructions below:

1. Ideally correct any soil compaction problems with aerator and/or grassland subsoiler during the prior autumn.
2. Check soil acidity and nutrition and correct with appropriate fertilizer & lime.
3. Spray any weeds, which are not controlled by Glyphosate, like creeping buttercup, with an appropriate herbicide.
4. Fertilize for the potential yield of silage from the deteriorated sward – Do not use the full rate, it will not be utilised in a worn out sward.
5. **Select a grass mixture, which is appropriate to the future requirements of the field and get it delivered well before you are likely to need it.**
6. 7-10 days before forecast silage date, spray off the sward with Glyphosate. (Check manufacturers recommendations). Spraying off a silage crop ensures a high leaf area which optimises the ‘take up’ of the chemical and gives more effective control of perennial weeds, like Docks, Thistle & Couch grass.
7. After cutting for silage, correct any soil compaction problems with aerator and/or grassland sub-soiler. The soil is now ready for direct drilling or shallow cultivation.
8. **Direct Drilling can be a useful tool in this system. Use a drill with narrow row spacing and cross drill for maximum ground cover. Only use direct drills in ideal soil conditions and seriously consider using slug pellets or the molluscs can have a feast.**
9. If not direct drilling, using cultivation equipment that is most suited to the soil type, aim is to create a tilth in the top 2-3 cm. This can be a power harrow through to a wire tine harrow can be adequate on some soil types.
10. Once the tilth is produced, firm with Cambridge rolls and sow the grass. Firm again with a Cambridge roll and follow with flat rolls if necessary.

**This technique can also be used later in the season, but care must be taken to control pests like frit fly which can devastate direct reseeds.**

Option 3: **Early Summer Sward Destruction - Brassicas - Autumn reseeding.**

When a field is identified as needing to be reseeded, it needs to be allocated to the cutting area – even if it is a grazing field! (or See ‘New Zealand Approach’ summarised at the end of this document.) Then follow the instructions below:

1. Ideally correct any soil compaction problems with aerator and/or grassland subsoiler during the prior autumn.
2. Check soil acidity and nutrition and correct with appropriate fertilizer & lime.
3. Spray any weeds, which are not controlled by Glyphosate, like creeping buttercup, with an appropriate herbicide.
4. Fertilize for the potential yield of silage from the deteriorated sward – Do not use the full rate, it will not be utilised in a worn out sward.
5. **Select an appropriate Summer Brassica: Rape, Stubble Turnip or Kale treated against Brassica seedling pests and get it delivered well before you are likely to need it.**
6. 7-10 days before forecast silage date, spray off the sward with Glyphosate. (Check manufacturer’s recommendations). Spraying off a silage crop ensures a high leaf area which optimises the ‘take up’ of the chemical and gives more effective control of perennial weeds, like Docks, Thistle & Couch grass.
7. After cutting for silage, correct any soil compaction problems with aerator and/or grassland sub-soiler. The soil is now ready for direct drilling or shallow cultivation
8. If cultivating, use cultivation equipment that is most suited to the soil type, aim is to create a tilth in the top 2-3 cm. This can be anything from a power harrow through to a wire tine harrow. Once the tilth is produced, firm with Cambridge rolls and sow the brassica seed. Firm again with a Cambridge roll and or flat rolls.
9. **Direct Drilling can be a useful tool in this system. Use a drill with narrow row spacing and cross drill for maximum ground cover. Only use direct drills in ideal soil conditions and seriously consider using slug pellets or the molluscs can have a feast.**
10. After the crop has been grazed, check for any perennial weeds, like: Docks & Cooch and creeping thistles - Treat if necessary. Check that herbicides used are suitable for use before reseeding.
11. Late summer/Autumn can be an ideal time to repair soil structure problems consider subsoiling before reseeding.
12. Clean stubble can normally be min-tilled to produce an ideal grass seedbed.

**Option 4:** **Early Summer Sward Destruction - Brassicas - Spring Reseeding.**
When a field is identified as needing to be reseeded, it needs to be allocated to the cutting area – even if it is a grazing field! (or See ‘New Zealand Approach’ summarised at the end of this document.) Then follow the instructions below:

1. Ideally correct any soil compaction problems with aerator and/or grassland subsoiler during the prior autumn.
2. Check soil acidity and nutrition and correct with appropriate fertilizer & lime.
3. Spray any weeds, which are not controlled by Glyphosate, like creeping buttercup, with an appropriate herbicide.
4. Fertilize for the potential yield of silage from the deteriorated sward – Do not use the full rate, it will not be utilised in a worn out sward.
5. **Select an appropriate Summer Brassica: Rape, Stubble Turnip or Kale treated against Brassica seedling pests and get it delivered well before you are likely to need it.**
6. 7-10 days before forecast silage date, spray off the sward with Glyphosate. (Check manufacturer's recommendations). Spraying off a silage crop ensures a high leaf area which optimises the ‘take up’ of the chemical and gives more effective control of perennial weeds, like Docks, Thistle & Couch grass.

7. After cutting for silage, correct any soil compaction problems with aerator and/or grassland sub-soiler. The soil is now ready for direct drilling or shallow cultivation.

8. If cultivating, use cultivation equipment that is most suited to the soil type, aim is to create a tilth in the top 2-3 cm. This can be anything from a power harrow through to a wire tine harrow. Once the tilth is produced, firm with Cambridge rolls and sow the brassica seed. Firm again with a Cambridge roll and or flat rolls.

9. **Direct Drilling can be a useful tool in this system.** Use a drill with narrow row spacing and cross drill for maximum ground cover. Only use direct drills in ideal soil conditions and seriously consider using slug pellets or the molluscs can have a feast.

10. After the crop has been grazed, check for any perennial weeds, like: Docks & Cooch and creeping thistles - Treat if necessary. Check that herbicides used are suitable for use before reseeding.

11. Late summer/Autumn can be an ideal time to repair soil structure problems consider subsoiling before reseeding.

12. Clean stubble can normally be min-tilled to produce an ideal grass seedbed.

**The New Zealand Approach**

The reason why we suggest that old pastures are killed off with Glyphosate immediately prior to cutting for silage or hay is twofold. Firstly the leaf area to absorb the herbicide is massive, optimising the take up of the chemical. Secondly by taking away the herbage that has been sprayed, you are removing all residual chemical on the leaf. This residual Glyphosate can transfer by touch to the emerging seedlings causing them to die, before they have got going - See the picture to the right where residual grass reduced establishment.

In New Zealand, not much silage is made, but a similar practice of destroying the sward with Glyphosate is practiced. A similar management sequence to that adopted in **Option 1** where the Herbicide is deactivated by a combination of grazing and treading into the soil. This is not normally a manufacturers recommendation in the UK, so take advice from your BASIS qualified agrochemical advisor. See the sequence below.

1. Allow the old sward to grow to ±10-15cm, allowing a high leaf area to be achieved before application of Glyphosate, optimising the ‘take up’ of herbicide. This gives a more effective control of perennial weeds, like Docks, Thistle & Couch grass.

2. Introduce stock to graze off the sward one week to 7-10 days after spraying. Exact timing of grazing must be in accordance with herbicide manufacturer’s recommendations. The sward may become less palatable if grazing is delayed.
3. The sward should be grazed down tightly, before drilling seeds to remove all top growth. Ideally young stock or sheep to reduce risk of poaching remove stock. If conditions are good, dry cows would be ideal.

4. **Direct Drilling can use in this situation. Use a drill with narrow row spacing and cross drill for maximum ground cover. Only use a direct drill in ideal soil conditions and seriously consider using slug pellets or the molluscs can have a feast.**

5. Protect the crop from seasonal pests which effect grass or brassicas with seed treatments, insecticides or seasonal timing. Contact Field Options for further information.