PERENNIAL RYEGRASS FOR SEED PRODUCTION

This grass seed crop is usually taken for two harvest years, incorporating grazing by stock. Alternatively it can be treated as a straight arable break crop, involving one harvest year only.

Choice of variety apart from the financial return should depend on time of combining and drying in relation to other crops on the farm. Harvesting times can range between mid July to mid August.

The seed crop must overwinter (vernalize) to produce seed, with the result sowings are made as under sowings in the spring, but more often sown direct in the early autumn. Latest recommended sowing date is 15th September.

PREVIOUS CROPPING AND FIELD REQUIREMENTS FOR ENTRY OF A CROP TO PRODUCE CERTIFIED SEED

1. Seed sown must be authenticated Basic seed. Carrying official Basic seed labels. A label must be retained by the grower for reference.

2. Previous cropping for perennial, Italian and hybrid ryegrass seed crops reducing the risk of field contamination with groundskeepers of other varieties of the same species or some other species to a minimum.

Basically

- No crop of same variety in previous year
- No other variety of same species in previous 4 years
- No other Ryegrass species in previous 4 years
- No Cocksfoot, Meadow or Tall Fescue in previous 3 years
- No other grass in previous 2 years

These are the requirements of the seed certification scheme, but in addition, growers should avoid selecting a field for Perennial Ryegrass that has at any time been used for production of Italian or Hybrid Ryegrass.

The main causes of crop rejections are from contamination of crops with ryegrass groundkeepers – Italian or Perennial Ryegrass. Rejections from contaminations average about 1.0% of crops inspected. Ryegrass produces seed in winter cereals – thus control of Ryegrass plants in winter cereals is very important in previous cropping.

Contamination can also occur from:

i. Uncleaned combine harvesting previous cereals or cover crop
ii. Uncleaned bailer on previous cereals
iii. Farm yard manure during previous cropping
iv. Feeding hay on field

3. Isolation

Grasses and Clovers are cross pollinated and the crop must be separated from a source of pollen of another variety, which could cause contamination of the seed produced.

Distance for crops producing certified seed is 50m for crops over 2 ha and 100m for smaller crops. Diploid varieties of Ryegrass and red clover will not pollinate tetraploids varieties. Distance here must be a physical barrier or at least 2m but if possible a 50m distance should be given to reduce possibility of interference with pollination.

Grasses

Any adjoining leys containing any potential pollination hazard must be cut or grazed tightly to prevent heading whilst the seed crop is flowering, if within the isolation distance. The grower must comply with any instructions given by the crop inspector to ensure adequate isolation.

The siting of seed crops must be arranged to give adequate isolation - take particular note of boundary fields.

4. Species, such as Italian ryegrass and Italian type hybrid ryegrass, where the growth characteristics are conducive to the establishment of a second generation of plants after harvest, cannot be entered for second harvest year. Other species may be entered for subsequent harvests provided that the original plant population is maintained.

5. Growing more than one variety of a species on a holding.
   To avoid cross pollination or physical contamination, a grower doing this must supply details of his proposed cropping and facilities.

   The chief criteria are:

   - At least seven days should separate the estimated time of ear emergence of varieties selected.
   - The grower must show that he has satisfactory facilities to avoid a mixture of the varieties at harvest, drying and storage.
   - The varieties should be grown in separate zones of the farm.
   - Harvested see must be stored in clearly separated areas within farm storage buildings and each individual heap must be clearly identified with kind/variety/merchants name.

ESTABLISHING THE CROP – RYEGRASS

SOIL CONDITIONS

- Fine tilth or direct drill
- Roll to consolidate beware capping
- P & K levels 2 if possible

DRILLING

- Choice of drill not as important as its accuracy
- Looking for precision drilling of small seed
- Good calibration essential
- Broadcasting equally effective
- Direct drilling conserves moisture

TIMING

a) - Undersow in spring barley, spring wheat or drill across cereal rows in winter wheat
   - Cover crop not to be kept too dense
   - Short varieties preferred and essential to prevent lodging

b) - Autumn sow but as early as possible to prevent loss of yield
   - Good after winter barley
   - Direct drilling conserves moisture and gives good establishment but increases weed problems
   - Aim to be in before mid-September

SEED RATE / DEPTH

- 9 kg/ha – 13 kg/ha for diploid varieties
- 10 kg/ha – 17 kg/ha for tetraploids
- Low seed rates and an even plant give best seed yields
- Increase seed rate for later sowings or poor seed beds
- Drill not more than 1cm deep
- Roll with Cambridge roller

PLANT POPULATIONS

- 160 – 200 Plants per m^2 is ample
- Populations as low as 100 per m^2 have given good results
- Thick crops depress yield

SEED BED FERTILISERS

- Adjust P & K to bring levels up
- 60 – 75 kg/ha of both taken off by previous cereal crop
- Nitrogen not essential in autumn unless field has ‘0’ status
- Compound giving something like 25 : 75: 75 kg/ha (20 : 60 : 60 units/ac) usually satisfactory

PEST CONTROL

Slugs: likely to be major problem to autumn drilled crops in wet year.
Application of slug pellets prior to drilling preferred.
Additional pellets in drill, if direct drilling.

Aphids: only likely to be a major problem in undersown and 2nd year crops when they cause BYDV. Worth controlling.

Vector mites: carriers of RMV. Undersown crops, particularly Italian ryegrass, susceptible. Varietal differences in susceptibility. Close cropping by sheep reduces vectors.

Frit Fly: Thin crops of autumn-sown ryegrass are at risk. Typical white heart. If crop well tillered, unlikely to affect yield. Once damage is obvious and extensive, probably too late to control.

Opomyza: Damage or similar to Frit in early spring. Unlikely to be serious in well-established crops.

Leather jackets/Wireworms: These and other soil pests can be hampered in their movement by good consolidation.

PLANT MANIPULATION

FUNGICIDES
Trials work shows effective, even in absence of disease. Diseases likely to be seen – eyespot, rhynchosporium, mildew, crown rust, dreschlera, etc.

FERTILISERS
First year ryegrass: single application at spikelet initiation. From 100 – 130 kg/ha depending on variety. Tetraploids can tolerate higher nitrogen.

Aim is to keep crop upright for flowering, the lodge, for seed safety.

Second year ryegrass: dependant on control of ryegrass volunteers. From 125- 150 kg/ha usually needed.

Fescue: 75kg/ha N. in the autumn followed by 50 kg/ha in early February. Essential to get it on early – later will reduce seed yield seriously.

PESTICIDES
Aphids can be a problem in some years but only a heavy infestation requires remedial action.

GROWTH REGULATORS
Use of growth regulators has been shown to be highly effective, but care and spot-on timing is required.

DEFOLIATION
Grazing early perennial ryegrass after the New Year is not recommended but possible till end of February with safety if ground conditions permit it.

Late varieties can be grazed till end of March.

Italian and hybrid ryegrass tend to be uneven and are more easily managed at harvest if defoliated in April or early May. Tetraploids, particularly hybrids, should not be cut lower than 3 inches for silage in May. Grazing best finished in 3rd to 4th week of April depending on variety.

ROLLING
Most crops benefit from spring rolling but this should be done as early as possible to prevent crop damage. Grazed fields will have to be rolled in stoney situations as animals kick up stones.

HERBICIDES
All broadleaved weeds, volunteer cereals and most grass weeds can be controlled by selective herbicides. Couch and Bromes cannot be controlled. However, growers should aim to select fields relatively free of wild oats, blackgrass, couch and docks.

HARVESTING
Combining direct 25-30% moisture. Machine adjustments in brief are a reduction in fan output, drum speed and concave settings. Most combine handbooks give grass seed info.

Stripper – headers have been found to be very effective at harvesting grass seed- especially in wet years.

YIELDS
Depending on ploidy, 1 to 2t per ha. Uncleaned seed is calculated at approx. 130 cu.ft. per tonne.

DRYING
Grass seed is usually harvested at higher moisture levels than cereals, therefore should be dried as soon as possible, e.g. not allowed to stand in a trailer overnight. Floor drying over laterals or on a drive-on floor are most common methods. Drying method is similar to oilseed rape, on seed tipped at 2.5-3 feet deep to allow adequate airflow, commencing with cold air before applying limited heat.

STORAGE
Ensure stores are dry, clean and free from mites. Do not store grass seed in areas where sprout suppressant have been used. Grass seed is extremely susceptible to these chemicals.

COLLECTION
- Seed must be at the contract moisture level of 14% or less
- Collection in bulk.
- Growers are asked to hold seed until required for cleaning.
- Seed is ex-farm crop, haulage to merchant's account.

Grass seed crops make a good break from cereals, improving the soil structure. Like most break crops the input costs are low. The establishment costs can be spread across subsequent uses, e.g. ready made grass ley.

There are slight differences in requirements/agronomy for Italian and hybrid ryegrass seed crops; these will be provided to growers of these species on request.

Contract terms and further details given on request.