BUYING SEED: THE PITFALLS AND BLUNDERS AND HOW TO AVOID THEM

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INTRODUCTION

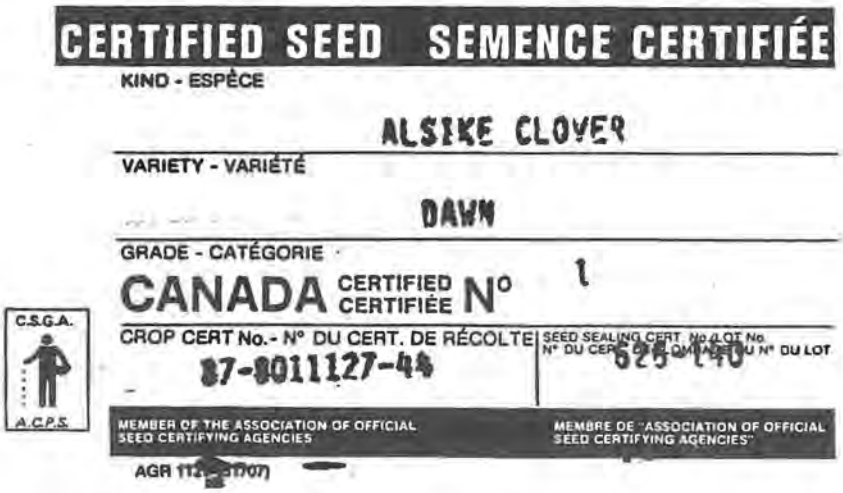
Prairie Seeds Inc. is an Alberta based seed company that has worked with several reclamation projects in the province. David Walker of David Walker & Associates has had several discussions with the author regarding what seed is being bought and used for reclamation in Alberta. There is a lot of inconsistency in the purchasing of seed and problems as a result. These discussions have resulted in this paper.

The focus of this paper is to define the differences between Certified seed and other seed categories, and what certified seed means to reclamation projects. The second part of the paper discusses the problems of buying seed through the tender process or through a purchasing agent who is at arms length from the reclamationist. The final thrust of the paper is how to buy seed, so the client has the full assurance that what he buys is what he wants.

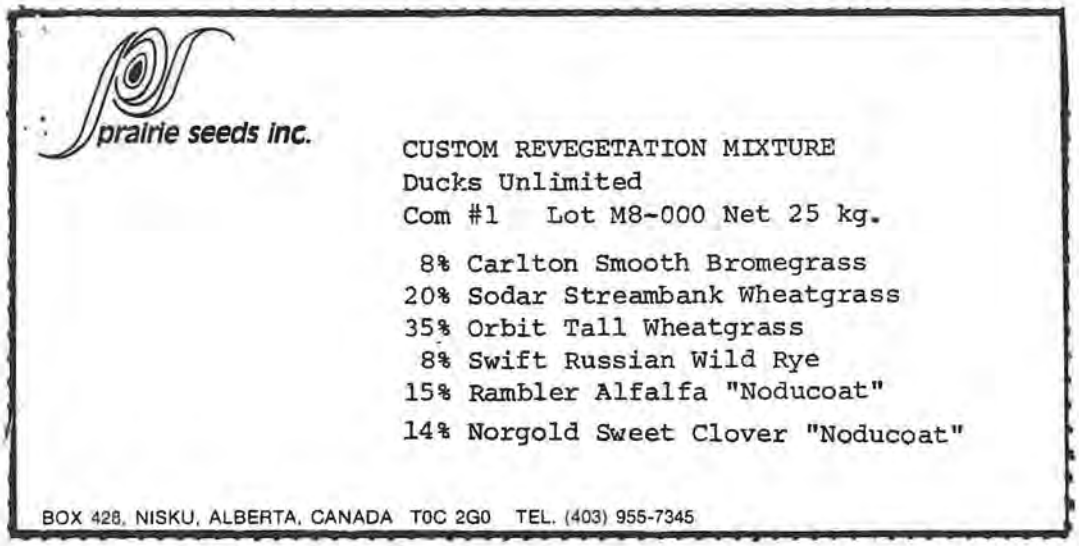
SEED CLASSIFICATION

Seed is categorized as certified or common and further classed as #1 or #2 (please see the attached schedule from the Seed Act). Certified has less total weeds than common seed. Number 1 seed has higher germination than Number 2 seed. The tolerance of these categories to weeds or germination will vary with the type of species as grass or legume or grain in regard to the number of seeds or germination.

There is a Blue tag on all certified seed bags. For example a bag of Dawn Alsike Clover (shown below) is identified as Certified seed. It meets the standards and you are assured of the standard quality. A Blue tag does not say if it exceeds these.



Seed mixes cannot be certified at this time. It is like mixing scotch and water. Both may be pure in the beginning, but after they are mixed - it is neither pure scotch or pure water. The tag on the seed mixtures (shown below) must show the percentage of ingredients in the mix. This tag must be attached to every bag of that seed mix. This tag must also show the name and address of the Company that mixed the seed.



WHAT ARE THE DIFFERENCES BETWEEN CERTIFIED AND COMMON SEED?

Two basic areas mentioned are germination and weed content. The third factor is the identification of variety of the species. Certified seed specifies the variety. For example Alfalfa varieties of Anik, Beaver and Rambler, all grow differently: Rambler Alfalfa is creeping, Anik Alfalfa is low growing and winter hardy, Beaver Alfalfa is what grandfather grew for hay. It is only through the identification of these varieties that the growth habit can be determined. This identification is impossible with common seed.

This is analogous to the North American auto industry. If you only specify that you want a Ford (as in species), but haven't mentioned the variety, you may ask for a Ford, pay for a Lincoln and end up with a Pinto.

It should be obvious that seed can always be purchased cheaper in the same way. A seed company pays less for common seed than certified. We also pay less for #2 than #1. If a purchasing agent or tender asks for cheap seed, that is what they get, common instead of certified, #2 rather than #1.

INOCULATION OF LEGUMES

Another misunderstood concept is that of use of legumes in reclamation. Why are legumes used?

Alfalfa, Clover, Cicer Milkvetch, Peas or any legume has the ability to combine with rhizobia in the soil to form nodules on the legume

roots. This symbiotic relationship between the plant and the bacteria produces nitrogen. It has been proven that a well inoculated Alfalfa stand will produce up to 200 lbs. of nitrogen per acre.

Many mine reclamation sites have seen the benefits of Alfalfa or Oxley Cicer Milkvetch on trees planted adjacent to the Alfalfa plants.

The proper procedure for inoculation of the legume seed is quite tricky. Briefly the procedure is as follows:

1. Select the proper rhizobia bacteria inoculant for the legume in question (each legume has a specific inoculant).

2. Mix the seed with a wetter/sticker agent which will allow the inoculant to stick to the seed.

3. Add the inoculant package to the seed.

4. Avoid exposing the bacteria to direct sunlight.

5. Do not mix grasses or other legumes with the inoculated seed. Seed each legume alone and separately from the grass.

Once the seed is properly inoculated there is a danger of the inoculant physically falling off. Also there is a danger of the inoculant drying and losing its viability. For these reasons the inoculated seed should be seeded within three hours of applying the inoculant.

The alternative to this method is the use of "Noducoat" preinoculated seed. This is legume seed that has been inoculated, with the bacteria specific to the legume, sealed onto the seed in a phosphate fertilizer coating. The advantage of this system is briefly:

1. The rhizobia bacteria will be viable for six months under the phosphate coat.

2. The rhizobia bacteria is protected from sunlight.

3. There is a superior number of bacteria per seed.

4. Most importantly, for the reclamation industry, the rhizobia bacteria will be held on physically by the fertilizer coat. This allows the coated legumes to be mixed with grasses and seeded in one operation.

SEED PURCHASING BLUNDERS

TENDERS

The tender system of seed purchase for reclamation projects, as carried out by Provincial or Federal Governments or agencies, rarely succeeds. The reason is, the seed purchaser is far removed from the reclamationist specifying the seed.

Ducks Unlimited, for example, is an agency that tenders out the seeding of their projects. Ducks Unlimited requires specific grasses for their projects (example shown below) for both the reclamation of disturbed areas, and for protection of waterfowl nesting sites. For these reasons their specifications are diverse and complicated. A simple "forestry mix" will not do.

Mixture for Ducks Unlimited

30%	Fairway Crested Wheatgrass
17%	Orbit Tall Wheatgrass
12%	Rangelander Alfalfa "Noducoat"
22%	Walsh Western Wheatgrass
7%	Norgold Sweet Clover "Noducoat"
12%	Carlton Smooth Bromegrass

The construction of a Ducks Unlimited site is put out on tender to backhoe or bulldozer jobbers. These Companies must do the construction of the ponds or dams as well as the re-seeding.

Many of these one operator companies do not consider the seed costs when tendering for the job. They often guess at the cost. When they find out that the Ducks Unlimited specs are 3 or 4 times higher than their guess, the scramble is on.

As a result, the bulldozer operator becomes a reclamationist overnight. He buys Timothy, Brome and Alfalfa from the local elevator or even from Prairie Seeds. They ask for a cheap mix, leaving us with no idea of who the contract is for. So we make up a cheap mix.

The alkaline lake bottom clay islands of the Ducks Unlimited project are seeded to Timothy, Brome and anything that is cheap. Naturally, the revegetation is poor.

A typical Government tender goes through even more hands:

1. Specifications of reclamation with the road construction specifications are awarded to the General contractor.

2. General contractor subcontracts to the landscaper.

3. Landscaper subcontracts to the hydroseeder.

4. Hydroseeder buys seed.

5. Seed Company mixes seed according to what the hydroseeder purchases.

For this case it would be more precise to have the seed mix specs done by rumour.

PURCHASING AGENTS

The other source of purchasing problems is with Purchasing Agents. Basically, the problem is similar to tenders. The buyer is too far removed from the reclamationist.

An example of this situation is the reseeding of the ski slopes of Nakiska.

The original seed mix included Western Wheatgrass, Northern Wheatgrass and Coated Legumes for Nakiska. The reclamationist, land engineer and seed supplier were in agreement with what they needed, and what was available.

By the year after seeding more seed was required for other slopes. The project was taken over by the Olympic Organizing Committee. The project went to their Purchasing Agent.

The second and subsequent purchases did not meet the specs....why? Because the purchasing agent didn't know Timothy or Brome from Western and Northern. And he bought what was handy. I know that the source for the additional seed does not have many of the species required in the original mix.

HOW DO YOU BUY SEED? .....AND STILL SAVE MONEY

It is easy. I suggest following the purchasing procedures of the major coal mining companies in the Province. The reclamationists have a very close relationship with their purchasing agents. They work very closely with suppliers directly in order to see what is available and what can be substituted if some seed types are not available.

The only thing the purchasing agent does is order the seed. They do not allow the Purchasing Agent to change the mix or alter ingredients or buy something cheaper. Anybody can make any seed mix cheaper - it costs a lot less to buy an unspecified Ford, than it does a 1988 Lincoln.

The benefit of this system where the reclamationist deals with the seed company, is that if the mix is to be made cheaper because of the budget, then the reclamationist is aware of it. He can change species or varieties - without sacrificing seed quality.

When the seed company knows the customer and where the seed is going, we also have more interest in what seed lots will be used and what is eventually growing.

THAT IS HOW TO AVOID BLUNDERS WHEN BUYING SEED

TABLE IX

Applicable to:

(*a*) Clover, alsike	—*Trifolium hybridum* L.
(*b*) Clover, hop or yellow	—*Trifolium aureum* Poll. (= *T. agrarium* L.)
(*c*) Clover, hop, large	—*Trifolium campestre* Schreber (= *T. procumbens* L.)
(*d*) Clover, hop, small (suckling)	—*Trifolium dubium* Sibth.
(*e*) Clover, Persian	—*Trifolium resupinatum* L.
(*f*) Clover, strawberry	—*Trifolium fragiferum* L.
(*g*) Clover, white (including Ladino)	—*Trifolium repens* L.
(*h*) Medick, black	—*Medicago lupulina* L.
(*i*) Timothy	
—common	—*Phleum pratense* L.
—dwarf	—*Phleum bertolonii* DC. (= *P. nodosum* auct.)

I	II	III	IV	V	VI	VII	VIII	IX
	Maximum Number of Seeds per 25 g except where otherwise stated							
	Noxious Weeds			Seeds of Other Crops				
Grade Name	Primary	Primary Plus Secondary	Total Weeds	Sweet-clover	Brassica Crops including *S. alba*	Other Non-brassica Crops	Maximum Per Cent Ergot or Sclerotia Bodies	Minimum Per Cent Germination
1. Canada Foundation No. 1	0	0	8	0	0	5	1	80
2. Canada Foundation No. 2	0	2	40	1	2	30	2	70
3. Canada Registered No. 1	0	0	8	0	0	5	1	80
4. Canada Registered No. 2	0	2	40	1	2	30	2	70
5. Canada Certified No. 1	0	5	50	10	4	1% by weight	1	80
6. Canada Certified No. 2	0	10	75	25	6	2% by weight	2	70
7. Common No. 1	0	10	75	25	8	2% by weight	1	80
8. Common No. 2	5	20	125	50	10	3% by weight	2	70

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C.B. Powter, compiler

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