



NORTHEAST AGRICULTURE RESEARCH FOUNDATION

2012 Harvesting Oats and Barley as Yellowfeed

Allan Foster, SMA Forage Specialist, Tisdale

ABSTRACT:

The project objective is to demonstrate the use of glyphosate to preserve standing oats and barley until it dries down enough to be cut for hay. Seeding at the Prince Albert CLC site took place in late June and as a result the crops did not mature to a point that it was felt the treatments would provide any useful results not data was collected from the P.A. site. Approximately one quarter acre of each oats and barley was seeded in late May of 2011. At the proper greenfeed cutting stage one half of each crop was sprayed and the other half was cut as greenfeed. Both the standing yellowfeed and the swathed greenfeed were monitored for moisture content as it dried. When dry, both the yellowfeed and greenfeed were baled. Random yield samples were taken from the yellowfeed prior to spraying and prior to cutting to determine if yield was lost while the crop stood. Feed samples were taken from each of the oats and barley treatments prior to cutting of the greenfeed and spraying of the yellowfeed. Feed samples were also taken once the spray treatment and swath treatments were dry to determine quality loss from the time of spraying or cutting until baling. It is very important to note that this is a demonstration trial, statistical analysis was not carried out and differences may or may not be significant. Results from this demonstration indicate similar quality in terms of percent protein and energy of oats and barley from yellowfeed as from green feed. Dry matter appeared to decline from time of spraying of yellowfeed to baling which was not the case in the previous yellowfeed demonstrations. In this project the application of one litre per acre of glyphosate did not speed the dry-down of either oats or barley compared to the swathed treatments. The project was included in forage field day held at the Prince Albert Site on July 17 with 47

participants in attendance. A newspaper interview was provided to the Melfort Journal for an article on the Melfort site.

Project Objective:

The project objective is to demonstrate the use of glyphosate to preserve standing oats and barley until it dries down enough to be cut for hay.

Project Rationale:

Yellow feed is the practice of spraying a greenfeed crop with glyphosate to stop its maturity and to preserve quality until it can be cut and baled. This practice is useful in years when frequent rains during harvest slow the drying of hay and result in loss of quality in the swath. By killing the crop with glyphosate and halting its maturity it can stand for a number of weeks without losing much quality and until it is dry enough to swath and bale. The concern expressed by producers is the crop may lose quality standing and it does not dry sufficiently standing that it can be cut and baled on the same day. If the crop needs to lie in the swath it will be subject to quality loss just as greenfeed would.

Methodology

This project was initially seeded in 2011 but due to poor establishment at both sites the project was terminated and seeded again in 2012. Seeding at the Prince Albert CLC site took place in early June and at Melfort in late May.

At the milk stage for oat and early dough stage for barley, one half of each crop was sprayed and the other half was cut as greenfeed. Both the standing yellowfeed and the swathed greenfeed were monitored for moisture content as it dried. When dry, both the yellowfeed and greenfeed were baled.

Random yield samples were taken from the yellowfeed plots prior to spraying and prior to the final cutting to determine if yield was lost while the crop stood. Feed samples were taken from each of the oats and barley treatments prior to cutting of the greenfeed and spraying of the yellowfeed. Feed samples were also taken once the spray treatment and swath treatments were dry to determine quality loss from the time of spraying or cutting until baling.

Results

It is very important to note that this is a demonstration trial, statistical analysis was not carried out and differences may or may not be significant.

Both the yellowfeed and swathed oats and barley dried down at a similar rate in 2012 at Melfort. Baling of both treatments took about 25 days after spraying or swathing. Dry down took longer than expected given the good drying weather experienced at Melfort in August.

Table 1 gives the total dry matter yield of yellowfeed oats and barley as measured on the day of spraying and the day of baling at Melfort. The yield of both crops decreased from the time of spraying to the time the crop had dried down enough to bale in this project. Similar results were found at the Prince Albert site for oats (Table 2).

Tables 3 and 4 provide the quality of oats and barley sampled at the time of swathing/spraying and again at the time of baling at Melfort and Prince Albert respectively. At Melfort both the percent protein and percent TDN declined over the month the crop either stood as yellowfeed or lay in the swath as green feed. This decline was about the same regardless of

whether the crop was harvested as yellowfeed or as greenfeed. This decline in quality is generally acknowledged in greenfeed as a result of plant respiration after cutting and weathering as the plants dry-down and appears to be similar in yellowfeed.

At Prince Albert there was no trend in either forage yield or for age quality. Oat yield as green feed and yellowfeed declined only slightly from the time of cutting/spraying to baling. Barley yield was not measured due to plots being inadvertently cut before sampling. Protein content of oat increased slightly for greenfeed and decreased slightly for yellowfeed. Protein for barley decreased slightly for greenfeed and increased slightly for yellowfeed. TDN increased for oat and decreased for barley from spraying/swathing to baling for both green feed and yellowfeed.

The results of this demonstration at Melfort and P.A., in 2012 are similar to previous yellowfeed demonstrations in southeastern Saskatchewan which indicated only slight changes in quality from the time of spraying of yellowfeed to the time of cutting. Dry matter appeared to decline from time of spraying of yellowfeed to baling which was not the case in the previous yellowfeed demonstrations.

Table 1: Yield (lb dry matter / acre) of oat and barley crops when sampled at the time of spraying and again at the time of baling at Melfort.

Treatment	Yield (kg D.M. /ha)	
	Sprayed/Swathed	Baled
Oat	10,970	8530
Barley	13,100	10,090

Table 2: Yield (lb dry matter / acre) of oat and barley crops when sampled at the time of spraying and again at the time of baling at Prince Albert

Treatment	Yield (kg D.M. /ha)	
	Sprayed/Swathed	Baled
Oat	4035	3890
Barley	5660	*

* Plots were inadvertently cut prior to samples being taken

Table 3: Protein (% P) and total digestible nutrients (% TDN) of oat and barley crops when sampled at the time of spraying/swathing and again at the time of baling at Melfort.

Crop	Cut	%P	%TDN
Oat green	Sprayed/Swathed	14.42	58.33
Oat yellow	Sprayed/Swathed	13.88	58.53
Barley green	Sprayed/Swathed	13.17	60.46
Barley yellow	Sprayed/Swathed	13.88	61.41
Oat green	Baled	11.76	55.50
Oat yellow	Baled	11.29	55.77
Barley green	Baled	12.56	57.93
Barley yellow	Baled	11.41	58.14

Table 4: Protein (% P) and total digestible nutrients (% TDN) of oat and barley crops when sampled at the time of spraying/swathing (Aug 10) and again at the time of baling (Sept 10) at Prince Albert.

Crop	Cut	%P	%TDN
Oat	Sprayed/Swathed	9.18	53.17
Barley	Sprayed/Swathed	9.18	63.87
Oat green	Baled	9.45	56.21
Oat yellow	Baled	8.42	59.21
Barley green	Baled	8.96	60.13
Barley yellow	Baled	9.46	62.51

Conclusions and Recommendations

The results of this demonstration at Melfort, Saskatchewan in 2012 are similar to previous yellowfeed demonstrations in southeastern Saskatchewan which indicated only slight changes in yield and quality from the time of spraying of yellowfeed to the time of cutting.

Although there was a decline in yield and quality from the time either the yellowfeed was sprayed and the green feed was cut, both the yellowfeed and the green feed experienced the similar level of decline.

Results from this demonstration indicate similar quality in terms of percent protein and energy of oats and barley from yellowfeed as from green feed. However in this project the application of one litre per acre of glyphosate did not speed the dry-down of either oats or barley compared to the swathed treatments.

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