

EVALUATION OF DIFFERENT SEED PELLETS ON PRODUCTION OF PASTURE GRASSES

ANSODARIYA, V. V., VAGHELA, P. O. AND MADARIYA, R. B.

GRASSLAND RESEARCH STATION
JUNAGADH AGRICULTURAL UNIVERSITY
DHARI, TA - DHARI, DIST - AMRELI (GUJARAT), INDIA

E MAIL: vaghelaprakash68@gmail.com

ABSTRACT

The present experiment was conducted during Kharif 2008 to 2011 at Grassland Research Station, Junagadh Agricultural University, Dhari by using Factorial Randomized Block Design with three replication and twelve treatment combinations. The experimental results indicated that the pellets prepare (40000 seed pellets/ha) with 50% soil + 50% FYM (200 kg soil + 200 kg FYM + 4 kg seeds) of Anjan (Dhaman) grass and grow in kharif season for getting higher green and dry fodder yield as well as the highest seed germination per cent.

KEY WORDS: *Evaluation, pasture grasses, seed pellets*

INTRODUCTION

At present, natural grassland area have been degraded through over grazing and care less exploitation of the bio diversity. Therefore, it is most needed to maintain and establishing suitable perennial pasture grasses. The germination and establishment of different pasture grasses are very low. By keeping these in view, the experiment on "Evaluation of different seed pellets on production of pasture grasses" was undertaken with an objective to find out the best pellets soil moisture for germination and yield of pasture grasses.

MATERIAL AND METHODS

The experiment on "Evaluation of different seed pellets on production of pasture grasses" was conducted during Kharif 2008 to 2011 at Grassland Research Station, Junagadh Agricultural

University, Dhari by using Factorial Randomized Block Design with three replication and twelve different treatment combinations.

RESULT AND DISCUSSION

Green fodder

Grasses

The data presented in Table 1 indicated that the effect of different grasses on green fodder yield found significant in individual years as well as in pooled. Significantly the highest green fodder yield 5566 kg/ha was recorded in G₂ (Anjan grass) over years.

Seed Pellets

Effect of different seed pellets on green fodder yield found significant in all the years as well as over the years (Table 1). Significantly the highest green fodder yield 5691 kg/ha was recorded by the treatment P₆ (50% Soil + 50% Saw dust), which was at par with the treatment P₃ (50 % soil +

50 % FYM pellet) (5623 kg/ha) over the years.

Interaction effect of G x P on green fodder yield

The results indicated (Table 2) that the interaction effect of G x P was found significant for green fodder yield during all the individual years as well as over the years. Significantly the highest green fodder yield 6210 kg/ha was found in pooled in treatment G₂P₃ (Anjan grass +50 % Soil + 50% FYM), which was at par with treatment G₂P₆ (Anjan grass + 50 % Soil + 50% saw dust pellet).

Dry fodder yieldGrasses

The data presented in Table 3 indicated that the effect of different grasses on dry fodder yield found significant in individual years as well as in pooled except during 2009. Significantly the highest dry fodder yield 1920 kg/ha was recorded in G₂ (Anjan grass) in pooled analysis.

Seed pellets

Different treatments significantly differ over the year except year 2009 and 2010 (Table 3). The treatment P₆ (50% Soil + 50% Saw dust) recorded significantly the highest dry fodder yield 1977 kg/ha, but it was at par with treatment P₃ (1942 kg/ha) in pooled.

Interaction effect of G x P on dry fodder yield:

The results (Table 4) indicated that the interaction effect of G x P found significant in the year 2008, 2011 and in pooled. Significantly the highest dry fodder yield was 1942 kg/ha obtained in treatment G₂P₃ (Anjan grass + 50% Soil + 50%FYM).

Seed germinationGrasses

The results presented in Table 5 revealed that effect of grasses and different seed pellets on seed germination was found significant in all the year as well as in pooled. The significant highest seed germination of 65 per cent was secured by treatment G₂ (Anjan grass) in pooled.

Seed Pellets

Effect of different seed pellets on seed germination was found significant in all the years as well as over the years (Table 5). Significantly the highest seed germination (68 %) was recorded by the treatment P₃ (50 % soil + 50 % FYM pellet) followed by P₆ (50% Soil + 50% Saw dust) (67 %) in pooled data.

Interaction effect of G x P on dry fodder yield

The results indicated (Table 6) that the interaction effect of G x P found significant in all the years as well as in pooled analysis. Significantly the highest seed germination 68 per cent was found in treatment G₂P₃ (Anjan grass + 50% Soil + 50% FYM).

CONCLUSION

It can be concluded that the farmers of North Saurashtra agro climatic Zone are advised to prepare pellets (40000 seed pellets/ha) with 50% soil + 50% FYM (200 kg soil + 200 kg FYM + 4 kg seeds) of Anjan (*Dhaman*) grass and grow in *kharif* season for getting higher green and dry fodder yield as well as the highest seed germination per cent.

Table 1: Effect of different seed pellets on green fodder yield (kg/ha) of grasses.

Treatments	Green Fodder Yield (kg/ha)				Pooled
	2008	2009	2010	2011	
Grasses					
G₁-Marvel	5206	5073	4910	5170	5090
G₂-Anjan	5783	5282	5515	5685	5566
S.E.m. +	42	37	70	49	50
CD at 5 %	123	108	204	137	141
Seed pellets					
P₁-Control	4215	4838	4740	4950	4686
P₂-Soil pellet	5409	5075	5048	5292	5206
P₃-50% Soil+50%FYM	5902	5570	5425	5596	5623
P₄-50% Soil+50%Compost	5868	5285	5100	5240	5373
P₅-50% Soil+50%Sand	5348	5148	5348	5717	5390
P₆-50% Soil+50%Saw dust	6224	5150	5617	5773	5691
S.E.m. +	73	64	121	81	87
CD at 5 %	213	187	353	238	246
CV %	4.24	4.01	5.66	4.66	5.01
G x P					
S.E.m. +	103	90	171	115	119
CD at 5 %	302	264	500	336	350
Y x G x P					
S.E.m. +					123
CD at 5 %					347

Table 2: Effect of G x P interaction on green fodder yield of grasses over years.

G x P Interaction	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	Mean
G₁	4669	4964	5037	5178	5251	5441	5090
G₂	4702	5448	6210	5568	5529	5941	5566
Mean	4686	5206	5624	5373	5390	5691	
S.E.m. +	123						
C.D. at 5 %	347						

Table 3: Effect of different seed pellets on dry fodder yield (kg/ha) of grasses

Treatment	Dry Fodder Yield (kg/ha)				Pooled
	2008	2009	2010	2011	
Grasses					
G₁-Marvel	1735	1593	1499	1871	1674
G₂-Anjan	2004	1638	1821	2216	1920
S.Em. +	30	27.75	37	48	49
CD at 5 %	88	NS	107	141	219
Seed pellets					
P₁-Control	1405	1563	1602	1831	1600
P₂-Soil pellet	1803	1568	1567	1785	1681
P₃-50% Soil+50%FYM	2094	1735	1752	2188	1942
P₄-50% Soil+50%Compost	1956	1620	1617	1929	1780
P₅-50% Soil+50%Sand	1783	1580	1679	2167	1802
P₆-50% Soil+50%Saw dust	2175	1630	1742	2360	1977
S.Em. +	52	48	64	83	49
CD at 5 %	152	NS	NS	244	146
CV %	6.80	7.28	9.37	9.98	8.61
Interaction G x P					
S.Em. +	73	68	90	118	43
CD at 5 %	215	NS	NS	345	137
Interaction Y x G x P					
S.Em. +					89
CD at 5 %					NS

Table 4: Effect of G x P interaction on dry fodder yield (kg/ha) of grasses over years.

G x P Interaction	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	Mean
G₁	1572	1608	1670	1689	1684	1824	1674
G₂	1629	1753	2214	1872	1921	2129	1920
Mean	1600	1681	1942	1780	1802	1977	
S.Em. +	43						
C.D. at 5 %	137						

Table 5: Effect of different seed pellets on seed germination (%) of grasses.

Treatment	Year wise seed germination(%)				Pooled
	2008	2009	2010	2011	
Grasses					
G₁-Marvel	63	56	64	64	62
G₂-Anjan	68	61	67	67	65
S.E.m. +	0.16	0.17	0.15	0.13	0.23
CD at 5 %	0.46	0.49	0.45	0.38	1.05
Seed pellets					
P₁-Control	51	53	61	61	56
P₂-Soil pellet	67	57	64	65	63
P₃-50% Soil+50%FYM	71	64	69	69	68
P₄-50% Soil+50%Compost	69	58	65	66	64
P₅-50% Soil+50%Sand	67	57	64	64	63
P₆-50% Soil+50%Saw dust	70	63	68	67	67
S.E.m. +	0.27	0.29	0.26	0.22	0.21
CD at 5 %	0.79	0.85	0.77	0.66	0.71
CV %	10.1	12.2	9.9	8.4	10.1
G x P					
S.E.m. +	0.38	0.41	0.37	0.32	0.23
CD at 5 %	1.12	1.2	1.09	0.93	0.70
Y x G x P					
S.E.m. +					0.37
CD at 5 %					1.09

Table 6 : Effect of G x P interaction on seed germination percentage in pooled analysis

G x P Interaction	P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	Mean
G₁	56	60	64	63	61	66	62
G₂	57	66	72	66	65	67	66
Mean	57	63	68	65	63	67	
S.E.m. +	0.23						
C.D. at 5 %	0.70						

Table 7: Effect of different seed pellets on plant height, 50 per cent flowering and numbers of tillers/plant of grasses

Treatments	Plant Height (cm)	50 Per Cent Flowering (days)	Number of Tillers/Plant
G₁P₁ Marvel -Control	78	42	13
G₁P₂ Marvel -Soil pellet	78	43	15
G₁P₃ Marvel -50% Soil+50%FYM	77	43	16
G₁P₄ Marvel -50% Soil+50%Compost	79	42	17
G₁P₅ Marvel -50% Soil+50%Sand	78	43	19
G₁P₆ Marvel -50% Soil+50%Saw dust	79	33	19
G₂P₁ Anjan -Control	69	41	14
G₂P₂ Anjan -Soil pellet	69	40	16
G₂P₃ Anjan -50% Soil+50%FYM	70	41	18
G₂P₄ Anjan -50% Soil+50%Compost	70	40	19
G₂P₅ Anjan -50% Soil+50%Sand	70	40	20
G₂P₆ Anjan -50% Soil+50%Saw dust	70	40	20

[MS received: July 2,2014]

[MS accepted: August 21, 2014]