Developing a Standard Germination Protocol for Partridge Pea (Chamaecrista fasciculata)

Southern Region Referee Report 2011

Background

Partridge pea

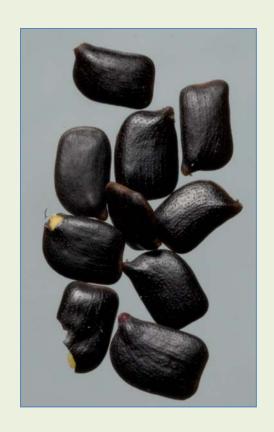
Chamaecrista fasciculata

Fabaceae

Emerging crop

Conservation, Wildlife., Etc...

No standard protocol



Objectives

Survey Labs

Compile Results

Develop Protocol

Acquire Commercial Seed Lots

Distribute with Tentative Procedure

Compile Results

Evaluate Consistency of Method

Materials and Methods

Email Survey

Familiarity, Frequency of Submission, Named Cultivars

Substrate, Temperature, Prechill, Count Dates, Other Information

Preliminary Testing

Summary of Results

20 responses

Relatively few samples submitted for testing

None =
$$7$$
 <5 = 9 5-20 = 3 20+ = 1

$$5-20 = 3$$

$$20+=1$$

Many lots (65%) submitted as named cultivars

9 test methods

Laboratory test methods reported for partridge pea

Sub.	Germ. Temp. (°C)	1st ct. (d)	Final ct. (d)	PC	PC Temp. (°C)	PC Dur. (d)	Special Notes	Labs Rptg Method
Blotter	20-30	7	14	No				4
Blotter	20-30	7	21	No				2
Blotter	20-30	7	21	No			Pre-germ clip	1
Blotter	20-30	7	21	New crop	5	7		1
Towel	20-30	7	14	No				4
Towel	20-30	6	21	No				1
Towel	20-30	7	21	No			Pre-germ clip	1
Towel	20	7	14	New crop	10	3	Paired test (20/20-30)	1
Towel	20-30	21	30	All	7.5	7-10		1

Preliminary Dormancy Breaking Data

Seed Lot	Treatment	Early Germ. (%)	Final Germ. (%)	Hard Seed (%)	Total Viable (%)
Lot A	Control	8	19	18	37
	PC-H ₂ O	48	49	20	69
Lot B	Control	6	13	27	40
	PC-H ₂ O	41	44	30	74
Lot C	Control	1	15	26	38
	PC-KNO ₃	41	43	23	66

Conclusions

Multiple test methods
Equivalent/Consistent?

Physical/Physiological dormancy limits germination

Clipping too labor intensive

Prechilling seems to be easy and effective

Future Direction

Finish Preliminary Data Collection
Substrate
Temperature
Acquire Commercial Seed Lots
Distribute with Tentative Procedure
Compile Results
Evaluate Consistency of Method

Recommend Rules Proposal