



Introduction and Objective

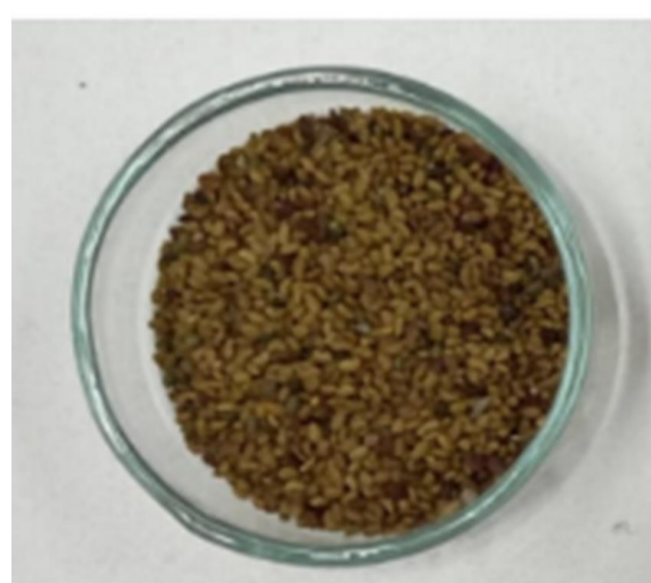
In the last decade, transgenic alfalfa with tolerance to the herbicide glyphosate was illegally introduced to Argentina, causing a great contamination of seeds. The evaluation of these transgenic events could be performed by DNA evaluation. It is essential to have methodologies that allow us to obtain a good concentration and quality of DNA. Although different commercial kits (CK) are available, they are highly costly when many extractions are required. The aim of the present work was to evaluate the efficiency of two economic DNA extraction methods in different tissues of alfalfa (*Medicago sativa L.*)

Materials and Methods

Seeds

Fresh Leaf

Hay



DNA EXTRACTION

Commercial Kit

Potassium Acetate

Precipitation with SDS

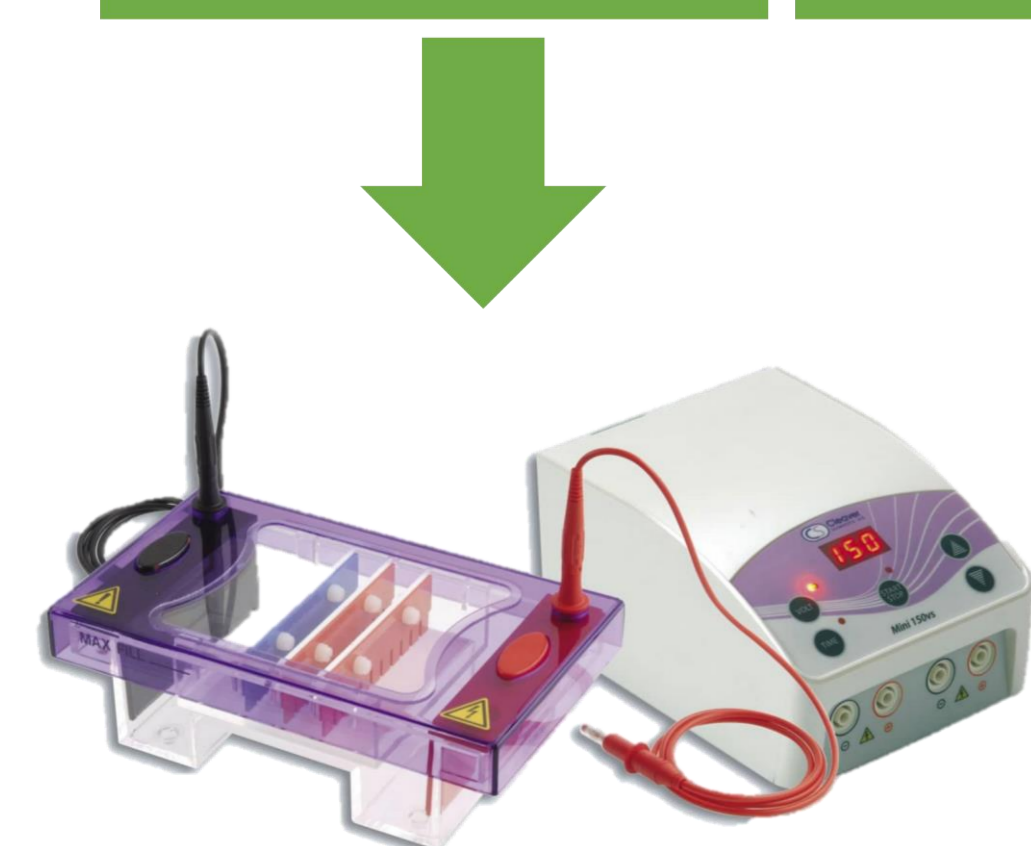
DETERMINATION

Quality

Yield

Purity

Inhibitors



Electrophoresis



Spectrophotometer



Polymerase Chain Reaction (PCR)

Results

Table 1. Yield, purity and amplification results obtained according to tissue and protocol used.

	Precipitation with SDS			Potassium Acetate (KA)			Commercial Kit (CK)		
	Hay	Seed	Fresh Leaf	Hay	Seed	Fresh Leaf	Hay	Seed	Fresh Leaf
Yield (ng/μl)	44.0	245.6	88.7	1465.8	1547.7	2411.6	16.7	33.1	35.5
Purity									
260/280	2.1	2.0	0.6	1.9	2.0	2.0	1.8	1.8	1.5
260/230	2.0	1.4	1.3	1.1	2.2	1.7	2.6	1.2	0.5
Ampl (%)	100	33.33	33.33	33.33	100	0	100	100	100

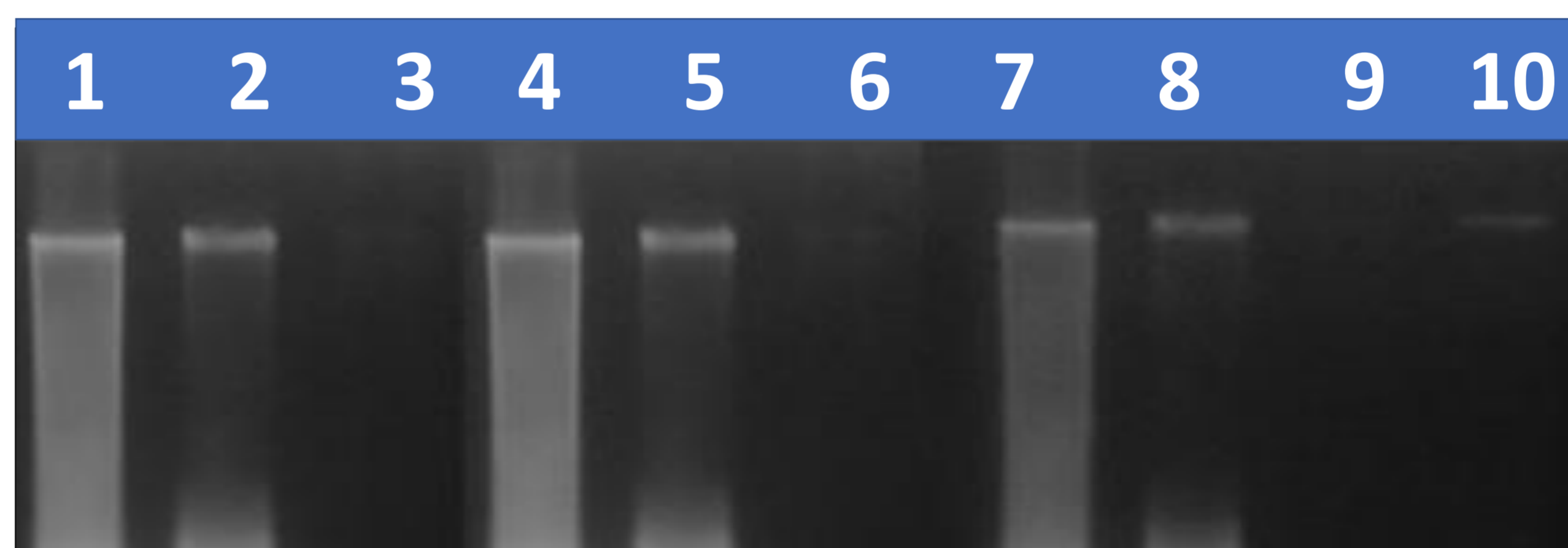


Figure 1. 1% Agarose gel. Alfalfa DNA samples of seeds, hay and fresh leaf. DNA extractions by SDS method (rows 1, 4 & 7), Potassium Acetate method (rows 2, 5 & 8), and Commercial Kit method (rows 3, 6, 9 & 10).

Figure 2. 1% Agarose gel. Amplifications of Alfalfa DNA samples of hay, seeds and fresh leaf. DNA extractions by Commercial Kit method (rows 1, 4 & 7), SDS method (rows 2, 5 & 8), and Potassium Acetate method (rows 3, 6 & 9).



Conclusions

Results suggest that SDS and KA methods could be an alternative protocol for hay and seed efficient as CK, cheaper, faster, and more useful for large-scale DNA extractions.