The Effect of Concentrated Sulfuric Acid Treatment on the Seed Germination of *Lathyrus latifolius*

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This study was carried out to investigate the effect of concentrated sulfuric acid treatment on the seed germination of two cultivars of *Lathyrus latifolius* ('Rosa Perle' syn. ['Pink Pearl'] and 'Red Pearl'). Concentrated sulfuric acid treatment of more than 5 min resulted in increased seed germination percentages. It is therefore possible to improve the germination of *L. latifolius* seed easily by the use of a concentrated sulfuric acid treatment.

INTRODUCTION

Recently, *Lathyrus latifolius* has shown promise as a cut flower and landscape plant. *Lathyrus latifolius* has a hard seed coat and it is known that seed germination takes a long time using normal sowing techniques, and the resultant germination percentages are frequently low. It is necessary to chip the seed coat prior to sowing (Colin,1996).

In this study, we investigated the effect of a concentrated sulfuric acid treatment on seed germination.

MATERIALS AND METHODS

In this experiment, seeds of *L. latifolius* 'Rosa Perle' and 'Red Pearl' were used. The seeds were soaked in concentrated sulfuric acid for 0, 5, 10, 15, and 20 min. After treatment, the seeds were washed with running water and were transferred in a plastic cup with tap water added to total darkness for 24 h.

After 24 h, the seeds were sown in 9-cm petri dishes on two layers of filter paper moistened with distilled water and placed at 20C in the dark. Germination progress was checked every 24 h.

RESULTS AND DISCUSSION

Table 1 shows the germination percentages of both cultivars. The germination percentage of 'Rosa Perle' was 90%, 4 days after concentrated sulfuric acid treatment for 15 min. Regardless of treatment time, the germination reached 100% 8 days after treatment, compared to 43% germination in 8 days without treatment. Germination of 100% was obtained for 'Red Pearl' using the concentrated sulfuric acid treatments of 10 and 15 min in 5 days after treatment. All seeds germinated within 7 days after the 5-min treatment and within 8 days after the 20-min treatment. Without treatment the germination reached 50% after 8 days.

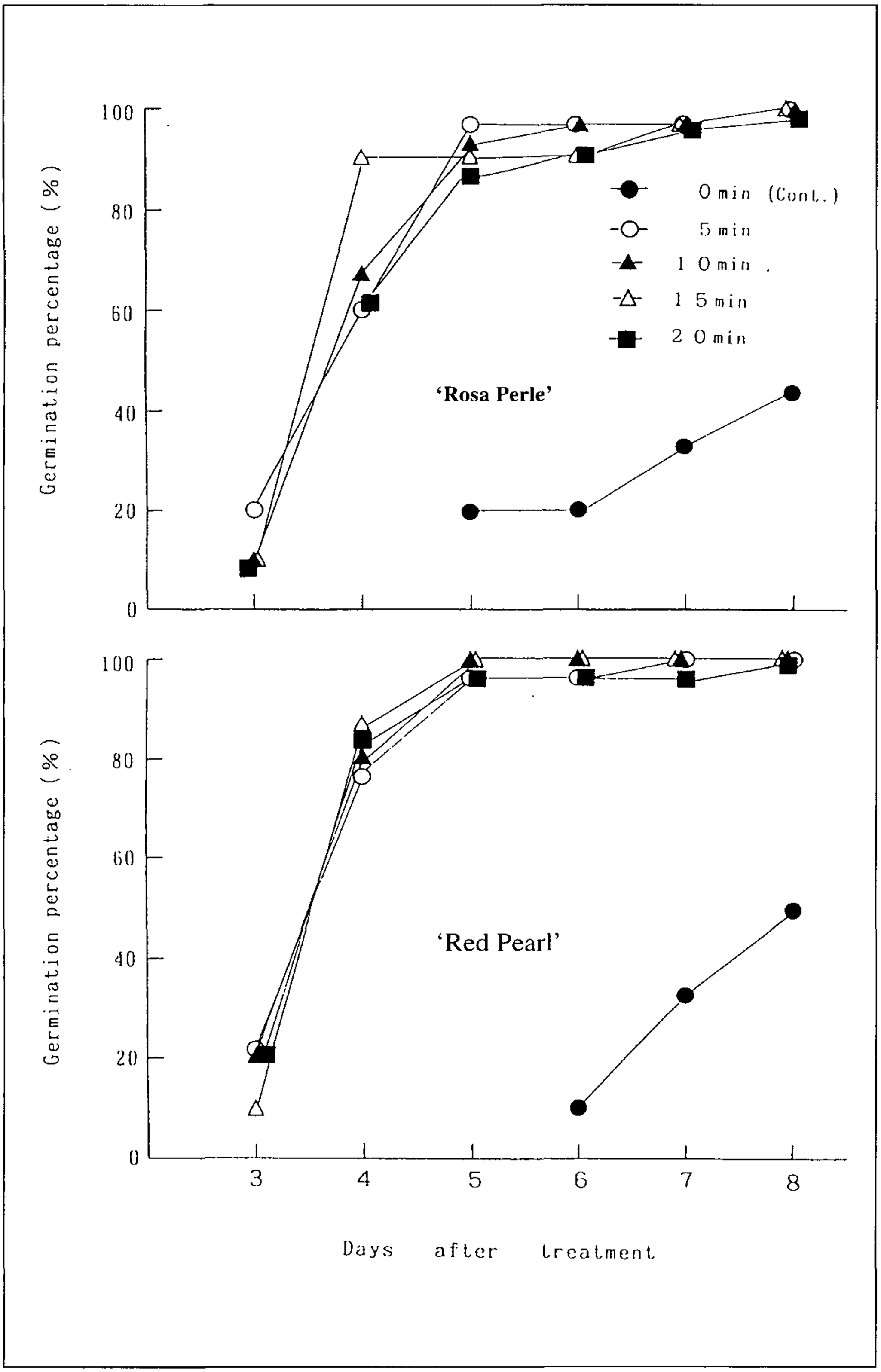

Figure 1. Effect of concentrated sulfuric acid treatment on seed germination of *Lathyrus latifoluis*.

Table 1. Effect of sulfuric acid treatment on seed germination of *Lathyrus latifolius*.

		Days after treatment					
Cultivar	Treatment (min)	3	4	5	6	7	8
'Rosa Perle'							
	0	0	0	20	20	33	43
	5	20	60	97	97	97	100
	10	10	67	93	97	97	100
	15	10	90	90	90	97	100
	20	10	63	87	90	97	100
'Red Pearl'							
	0	0	0	0	10	33	50
	5	23	77	97	97	100	100
	10	20	80	100	100	100	100
	15	10	87	100	100	100	100
	20	20	83	97	97	97	100

These results indicate that seed germination percentages of *L. latifolius* can be increased by concentrated sulfuric acid treatment of more than 5 min. Water absorption increases after the concentrated sulfuric acid treatment.

LITERATURE CITED

Colin, H. 1996. Sowing and care of seedlings. The unwins book of sweet peas. pp. 24-33.