

SEED GERMINATION AND SEEDLING VIGOR OF BIRDS-FOOT TREFOIL AFTER DESICCATION BEFORE HARVEST: USING CLASICCAL AND ACCELERATED METHODS FOR SEED TESTING

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ABSTRACT

Birds-foot trefoil is characterized by the most complex seed production. Seed dispersal and often large losses are a problem that causes low and highly variable yields. This affects the high cost of seed production, and seed losses.

One possibility to prevent crumbling and losing is desiccation of the crop before the full biological maturity. On the other side, the seedling vigor of birds-foot trefoil can be a problem when establishing crops in mixtures with other grasses and legumes.

The aim of this study was to investigate seed germination, seed hardness and seedling vigor after application of desiccant.

After desiccation, with the standard germination test methods, seeds after the three months of storage had a germination of 52 to 70% and hard seed shared of 26 to 34%.

Key words: Birds-foot trefoil, desiccation, seed germination- hard, seedling vigour.

INTRODUCTION

Birds-foot trefoil is a highly adaptable perennial forage legumes and good in nitrogen fixation. It is grown in pure culture or in mixtures with forage grasses mainly in poorer soil fertility and low pH values. Also, it can significantly affect on the soil repair.

Under natural conditions of Central and Southeastern Europe, birds-foot trefoil is located of the different types of meadows and pastures, from sea level to over 2000 m height (Dragomir et al., 2011; Tomić et al., 2011).

However, of the entire legumes birds-foot trefoil is characterized by the one of the most complex seed production. Maturing pods and seeds begins in the lower part of the plant and move to the top. The fully ripe pods break easily and birds-foot trefoil seed is spilled. Shattering occurs along the dorsal and abdominal seam and medium vessels along the pod. Shooting is due to different water content in these tissues.

This problem significantly limits the successful seed production. Thus, seed dispersal and large losses are often a problem that causes very low and variable yields. This affects the high cost of seed production and gathering, and the establishment of the new crop.

The only possibility to prevent crumbling and losing is desiccation prior to maturity. Vigor of seeds in birds-foot trefoil is quite low (Artola et al., 2004). This can be a problem when establishing crops in mixtures with other grasses and legumes.

