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SEED QUALITY OF RED CLOVER AND ITALIAN RYEGRASS VARIETIES DURING FIVE-YEAR PERIOD

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Red clover (*Trifolium pratense* L.) and Italian ryegrass (*Lolium multiflorum* L.) are in the conditions of Serbia, according to many researches and experiences from practice, the most productive and highest quality grass-leguminous mixture for fodder production on more fertile soils. Both species can be sown as pure crops. But sowing and growing in a mixture is better because of the well-known benefits of growing legumes (which are nitrogen fixers) and grasses (which have a pronounced need for nitrogen). Studies have shown that these species grown in a mixture also have a positive effect on soil biogenicity. They also have a positive effect on the reduction of weeds in relation to the cultivation of these fodder plants in pure culture.

The initial crop density in all plants, especially dense plants, is achieved by the amount of germinating seeds in the establishment. For sowing in a mixture, the ratio between the number of leguminous plants and grasses is important for achieving the desired ratio in the mixture (legumes: grass).. The ratio in the mixture determines the yield and quality of the feed. Namely, it is generally known that the legume component is of better quality and that the grass component is more productive. There is no doubt that seed germination is the most important indicator of seed quality. And the goal is to maintain high quality seed germination for as long as possible during the seed storage period. But it is also a reality that the seed achieves maximum germination quality during storage and then follows the period of seed aging, which inevitably leads to a decrease in germination, which is different for each species. Of course, the ambient conditions in which the seeds are stored are also of great importance for preserving germination.

The aim of these tests was to examine the quality of seeds during five years of storage through indicators: germination energy and total germination. The seeds of four varieties of red dateline were used in the experiment: K-17, Viola, Kolubara, Sana and Italian ryegrass, three varieties: K-13, Aubade, Draga, K-39 and one populations: P1.

Seeds of the red dateline variety after five years retained an average germination of 64%, with a variation depending on the variety of 20% (Nike 55%, Una 75%). And with pronounced variability expressed through a coefficient of variation of $CV = 14.1\%$.

Seeds of the Italian ryegrass variety also maintained an average germination of 70% after five years, with a variation depending on the variety of 13% (Aubade 67%, K-13 80%). And with pronounced variability expressed through a coefficient of variation of $CV = 8.12\%$.

Key words: cultivar seed Italian ryegrass, cultivar seed red clover, germination energy, germination total

KVALITETA SEMENA SORATA CRVENE DETELINE I ITALIJANSKOG LJULJA TOKOM PETOGODIŠNJEG PERIODA

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Crvena detelina (*Trifolium pratense* L.) i italijanski ljulj (*Lolium multiflorum* L.) su u uslovima Srbije po mnogim istraživanjima i iskustvima iz prakse najproduktivnija i najkvalitetnija trava-leguminozna smeša za proizvodnju krme na plodnijim zemljištima. Obe vrste mogu se sejati kao čisti usevi. Ali je setva i gajenje u smeši bolja zbog dobro poznatih benefita gajanja leguminoza, (koje su azotofiksatori) i trava, (koje imaju izražene zahteve za azotom). Ispitivanja su pokazala da ove vrste gajene u smeši pozitivno utiču i na biogenost zemljišta. Takođe pozitivno utiču i na smanjenje korova u odnosu na gajenje ovih krmnih biljaka u čistoj kulturi.

Početna gustina useva se kod svih biljaka, a posebno gustorednih, postiže količinom klijavog semena u zasnivanju. Za setvu u smeši odnos između broja biljaka leguminiza i trava je značajan za ostvarenje željenog odnosa u smeši (leguminoza:trava). Odnos u smeši određuje prinos i kvalitet krme. Naime opšte je poznato da je leguminozna komponenta kvalitetnija a da je travna komponenta produktivnija. Ne sumljivo je da je klijavost semena najvažniji pokazatelj kvaliteta semena. Te da je cilj da što je moguće duže se održi visok kvalitete semena-klijavost tokom perioda čuvanja semen. Ali je i realnost da seme tokom čuvanja postiže maksimalni kvalitet-klijavosti a zatim sledi period starenja semena što neminovno vodi ka smanjenju klijavosti što je za svaku vrstu različito. Naravno za očuvanje klijavosti od visog značaja su i anbijentalni uslovi u kojima je seme čuvano.

Cilj ovih ispitivanja je bio da se tokom pet godina čuvanja ispita kvalitet semena preko pokazatelja: energije klijanja i ukupne klijavosti. U ogledu je korišćeno seme četiri sorte crvene dateline : K-17, Viola, Kolubara, Sana i italijanskog ljulja, tri sorte: K-13, Aubade, Draga, i jedna populacija P-1.

Seme sorte crvene dateline nakon pet godina zadržalo je prosečnu klijavost 64%, sa variranjem zavisno od sote od 20% (Nike 55%, Una 75%). I sa izraženom varijabilnošću izkazanu kroz koefijent varijacije od CV=14,1%.

Seme sorata italijanskog ljulja takođe nakon pet godina zadržalo je prosečnu klijavost 70%, sa variranjem zavisno od sote od 13% (Aubade 67%, K-13 80%). I sa izraženom varijabilnošću zavisno od sorti izkazanu kroz koefijent varijacije od CV=8,12%.

Ključne reči: enetgija klijanja, sorta semena crvene dateline, sorta semena italijanskog ljuljha, ukupna klijavost