

Storing Seeds of the Red Oak Group

By
Carl E. Whitcomb

Handling oak seed in the red oak group is, to a degree, easier than those in the white oak group. Red oak acorns require two growing seasons to mature and a cold stratification period is required by all temperate zone species.

Once acorns fall, they can be collected, treated to kill weevil larvae if necessary, dried and stored in sealed plastic bags at temperatures from 34° to 40°F. Spring planting in Rootmaker™ containers can be done to fit production objectives and climatic conditions. Once the acorns are exposed to 60 to 70°F temperature and moisture, germination proceeds whether you are ready or not.

When a parent tree is found that produces acorns that germinate well and result in vigorous seedlings it would be desirable to have a supply each year. But, one of the practical aspects of acorns of the red oak group is that good acorn crops tend to occur only every other year. The next best thing would be to store acorns from good seed years to be planted during poor seed years. This would mean storing acorns for roughly 16 months.

To study this question, I collected a large quantity of Shumard oak acorns in the fall of 1997. As it turned out, there was a moderate crop of Shumard oak acorns in 1998 and a light crop in 1999. The acorns were stored at 34° to 35°F in Ziploc® plastic bags after being treated for weevils and dried. Acorns collected in 1997 were divided into three groups and planted March of 1998, 1999 and 2000. Acorns from 1998 were planted in 1999 and 2000, while the acorns collected in 1999 were planted in 2000. Germination percent, growth and vigor of seedlings were monitored both in the propagator size Rootmaker™ containers and in 1 gallon Rootmaker™ containers.

During the 1999 growing season, the acorns collected during 1997 and stored for 16 months grew just as well as those collected in 1998 and stored for four months.

During the 2000 growing season the acorns collected during 1997 and stored for 28 months did not germinate. Acorns collected in 1998 and stored for 16 months, germinated and grew well and similarly to that observed during 1999. The acorns collected in 1999 and stored four months germinated poorly. Further, the modest number of seedlings that did result from the few seeds available in the fall of 1999 grew less well than the seedlings from acorns collected in 1998 and stored for 16 months.

This study shows that Shumard oak acorns can be collected during years of heavy acorn production and stored for 16 months without loss of capacity to germinate or seedling vigor if the acorns were properly dried and stored at 34 to 46 degree F. The failure of the 1999 acorns to perform well when planted in 2000 emphasize the importance of storing seeds during good years to avoid poor seed crops and poor performing seedlings.