Plant Growing in Organic Farming


*Plant Growing in Organic Farming* is a monograph with chapters on specific crops and cover crops grown in the Czech Republic. It provides a valuable window into recent research. Although some results have been published in accessible international journals, much of the information is available only in Czech; thus, the present edition is useful to students and to other researchers working in organic dryland systems throughout the world. Dr. Konvalina has assembled a rich and practical collection of information on cultivars, crop management, pest management, and cropping systems for the principal regions of the Czech Republic. Results may prove informative to other researchers, extension specialists, and farmers in areas with similar soils and rainfall patterns at the same latitude in other continental locations.

The first four chapters deal with major cereals: common wheat (*Triticum aestivum* L.), common rye (*Secale cereale* L.), hulled wheats, and naked oats (*Avena sativa* L.). Variety choice, cultural practices, plant protection, and places in the rotation are all summarized. General information is followed by specific results on cultivar yields, conventional vs. organic comparisons, and nutritional qualities. The results from the two systems provide a useful baseline for comparison, although their meaning varies with yields.

The five chapters that follow provide results from research on other key dryland crops and rotations. Three cultivars of buckwheat (*Fagopyrum esculentum* Moench) are compared for yields and nutritional qualities in 2 yr of field testing, and the only differences were in time to maturity, as influenced by weather and mulch practices in soil biology and nutrient cycling, with some influence on weeds and pests. Organic sugar beet (*Beta vulgaris* L.) and fodder beet yields in tests across 3 yr showed significant differences among years and between two plant spacing treatments, and especially under different weed management strategies; energy value, as determined by determinative analyses, was influenced most by years, although the confounding of energy content and yield was not addressed. Field pea (*Pisum sativum* L.) tested across 2 yr in a conventional system without chemical fertilizers and pesticides showed differences in seed size and antioxidant content. Lastly, poppy seeds (*Papaver somniferum* L.) established stand numbers in organic vs. integrated systems were influenced by seed treatment prior to planting, and this also affected pathogen problems in the field. Results of these experiments on principal field crops that are rotated with cereals in Czech farming are considered preliminary, as authors point out the need for testing for additional years and locations to provide credible information to their farmer clients.

The final chapter deals with “catch crops” in the rotation that are sown late in the summer growing season after harvest of the principal annual summer crops, or after winter wheat harvest. They are useful to protect soil from erosion and to capture nitrogen in growing vegetation that reduces leaching of nitrate. Both are important...