

Editorial

Improvements In Agricultural Sciences

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The continued scientific efforts to increase the nutritious value of plant-based foods, improve food quality and processing, and invent new eco-friendly organic farming methods, have led to significant progress in the agricultural industry in the past two decades. In 'The Open Agriculture Journal' we publish articles related to all areas of agricultural technology, which are freely available to researchers. In this issue, we have several publications from authors covering various aspects of agri-food quality and testing of various organic farming approaches.

Spatafora and Tringali (2012) [1] reported the identification of value added bioactive compounds in vegetable wastes, and show that vegetable wastes are a promising source of value added bioactive compounds and have potential as lucrative sources of these compounds. The identified compounds can be modified by chemical or enzymatic methods to obtain optimized analogs, food additives, drugs, and cosmetics. Further, they identified bioactive natural products in vegetable waste that are potential sources of lead compounds. Moreover, expert panel assessment of 57 monocultivar olive oils produced from Tuscan germplasm was reported by Cantini *et al.* (2012) [2]. The authors found that the sensory profile of the extra virgin olive oil produced from a single variety is highly affected primarily by the maturity index of the fruits and correlated to both the phenol content and acidic profile. Because these two traits are genotype dependent, the cultivar plays a fundamental role on the oil's overall quality.

Munakamwe *et al.* (2012) [3] studied pea yield in response to the interaction of genotype, population and sowing date, along with weed control. Fully leafed and semi-leafless peas gave similar yields under weed free conditions. Increasing pea sowing rates increased total dry matter and seed yield in weedy environments. The fully leafed variety yielded more than the semi-leafless variety when both were late sown. They further found that increased pea sowing rate improved weed suppression. A 19 year field trial conducted by Scott (2012) [4] on over-drilled legumes and grasses demonstrated that summer sown tall oat grass and spring sown cocksfoot were the most successful of the sown grasses.

Other reports targeted organic farming and ways by which farmers can significantly reduce production costs in

an eco-friendly manner. Salomon *et al.* (2012) [5], analyzed ammonia losses from outdoor pig fattening in Swedish organic farms. They observed that the influence of pigs on ammonia losses appeared to be most pronounced in the latter half of the fattening period, when the pigs excreted maximum amounts of nitrogen. In another investigation, Filippini *et al.* (2012) [6] reported the effect of organic amendments like chicken manure and vermicomposting application on soil quality and garlic yield in central western Argentina. They concluded that to obtain beneficial effects on soil fertility from organic amendment application, wastewater treatment systems must be improved and tillage practice must be reduced. These authors also recommend avoiding the use of chemical fertilizers by favoring the increase of soil humus during the intercropping period, when no irrigation or tillage is needed. On a different note, Barbosa *et al.* (2012) [7] conducted a study to come up with simplified models to estimate slope gradient and vehicle attitude definition based on the measurement of pitch and roll angles of a roving vehicle. Simplified models yield comparable results to published models, but reduce the number of mathematical operations, therefore improving program simplicity and execution speed.

A discussion by Liew *et al.* (2012) [8] brings to attention the encroachment of brush which, due to an increase in the number and density of woody plants and cacti, has frequently been associated with declines in herbaceous plant biomass and ecosystem resilience, resulting in reduced forage availability and therefore lower livestock carrying capacity and economic returns. In Texas, rangelands have been widely transformed by brush encroachment over the past two centuries. Liew *et al.* (2012) [8] conducted an extensive modeling study to evaluate the economic effectiveness of prescribed extreme fire and alternative methods for managing invasive brush species in Texas. The economic analysis indicated that extreme fire was economically superior for restoring rangelands and was the most effective treatment alternative that resulted in positive returns on investment.

Two reports on animal research also appear in this volume. Walker and Drouillard (2012) [9] studied the effects of natural and synthetic catecholamines on gut microflora, and the potential for beta-adrenergic agonists to impact ruminal fermentation. The potential of beta-adrenergic agonists to alter proteolysis could directly influence the type of protein that is considered ideal for diets. Understanding the interaction between catecholamines and microbes in the rumen will enable nutritionists to formulate diets capable of maximizing the response to the compound. A recent investigation of

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Lackova *et al.* (2012) [10] focused on correlating clinical and laboratory findings on calves from birth to 5 days of age in the farm, with the incidence of bluetongue found in heifers after their import from the area of known BTV incidence in France. During clinical examination no clinical signs typical for bluetongue disease were observed. In addition, no differences in the clinical findings of virologically positive and negative calves were found. Differences in the virologically positive and negative animals were likely not influenced by the infection of bluetongue.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflicts of interest.

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