

# Kiwi Golf Course Management and the NZSTI



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This summer I had the exciting opportunity to visit New Zealand and learn more about turf management south of the equator. Picture Australia's position on the globe, then move southeast towards the Antarctic and you'll have New Zealand accurately placed. The last major land mass to be colonized, New Zealand has climates that range from rainforest to near-desert and from sea-level to mountains over 10,000 ft. tall.

The country has a relatively small population of just under 4 million (about 80% of Wisconsin's population). The main city is Auckland on the North Island. Known throughout the world for the kiwi fruit (originally the Chinese gooseberry), the term Kiwi is commonly used as a reference for the inhabitants of this beautiful and often rugged

country. Though most of the country is relatively rural, New Zealand boasts about 250 golf courses, many of them quite beautiful with scenic backdrops of hills, forests, and mountains. The terrain and hazards vary, though: Arikapakapa Golf Course near Rotorua is in the midst of a geothermal area and is peppered with boiling mud pools and small steam vents scattered throughout the course.

Similar to much of the rest of the world there are no major turf programs at the universities nor does an extension service exist. Instead, education and extension-type activities such as troubleshooting pests and problematic putting greens is performed by the New Zealand Sports Turf Institute (NZSTI). The NZSTI was started in 1949 by the Ministry of

Agriculture and Fisheries in response to industry needs. The headquarters are in Palmerston North on the southern portion of the North Island. A second office is located in Auckland. A small bit of applied research is conducted to solve specific problems if funding can be found. Funding comes largely from those groups or companies which have an interest in the results as no government funding is available. Superintendents, their assistants, and their crews gain much of their knowledge through various fee-based seminars and courses sponsored by the NZSTI. The rest of their knowledge comes from on-the-job training. An aspiring superintendent generally spends at least 3.5 years as an "apprentice" coupled with several levels of correspondence courses before being ready to move into an assistant superintendent position.

Most of New Zealand's golf courses are owned by "incorporated societies" and governed by a Board of Members. A few are municipally-owned; private ownership is very rare. One of the two privately owned clubs I learned of was the Formosa & Golf Harbor Club which is owned by a corporation from southeast Asia. Most crews are relatively small: a superintendent, an assistant, an apprentice, and two to four laborers. Country courses may employ only two people. Salaries are similar to the U.S. with a range from \$30,000 to \$100,000 or so. Greens fees range from \$5 to \$60 with a cart.

Management practices are largely similar to those of Wisconsin. A temperate climate, moderated by oceanic influences,

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provides an ideal setting for cool-season grasses across most of the country. Greens are typically creeping bentgrass and *Poa annua*. The greatest difference is the heavy reliance on browntop (colonial bentgrass) for fairways and sometimes greens. Fine fescues are occasionally mixed in for good measure. The northern part of the North Island is a bit warmer and turf in the countryside, including golf courses, is almost wholly composed of kikuyugrass (*Pennisetum clandestinum*). Kikuyugrass is emblematic of a situation which has recently garnered massive attention in the U.S.: it is a non-native and invasive species. Kikuyugrass is easily recognized by its light green color and often puffy turf. It spreads by both rhizomes and thick stolons. Seedheads can form even on greens that are mowed daily.

Bermudagrass is occasionally used for fairways and tees in the extreme northern part of the country.

Regardless of the turf species, greens are typically mowed 3 to 4 mm height. Golf may be more popular during the summer tourist season but many courses remain open year-round. Green speed is important with speeds of 10 ft or better desired even on greens of colonial bentgrass mowed at 4 mm. Mowing height may be increased during the winter and speeds allowed to slow to as much as 8.5 ft.

Greens are typically irrigated and many golf courses also have irrigated fairways. In urban areas the water is usually from the town while country courses will draw water from wells or reservoirs.

Turf managers in New Zealand seemed to be a very realistic group

of people and relied on tried and true agronomic practices. Like U.S. superintendents, turf managers were extensively well-read and were eager for research-based information. Nitrogen is the main nutrient supplied. Spoon-feeding N in liquid applications is common, particularly on greens. A strong push for organic N sources started several years ago but the bubble burst in 1999 and its use has continued to decline.

Aeration is viewed as an important management tool. Greens are usually core-aerated (hollow tines) 1 to 2 times each year, generally spring and fall. Older greens are usually composed of native soil while newer greens are constructed according to USGA specifications. Holes are backfilled with sand with seed mixed in if needed. Wet or compacted areas on fairways may be verti-drained or



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spiked according to weather and playing conditions. Needle tines may be used on greens several times throughout the year. Topdressing is usually 100% sand. Peat is seldom used for two reasons: it is viewed as a non-sustainable use of a natural resource and is not readily available in much of the country.

Disease, weed, and insect control play only a minor part in golf course management. Access to pesticides is similar to that of the U.S. market with all or most of our products available for use. Auckland has started to restrict spraying in public turf areas but

most golf courses can still use pesticides as long as spray shields are used to reduce chemical drift. The main diseases are dollar spot and Fusarium (i.e., pink snow mold). Annual bluegrass is the most problematic weed. Insect pests appear to be extremely rare.

In general golf course maintenance in New Zealand mirrors our own practices in the states. The country itself was amazingly easy to visit: apart from having to drive on the opposite side of the road, travel and accommodations were similar to the U.S. People were extremely friendly and sharing and prices were great as the exchange

rate is about 2:1 in favor of the U.S. dollar. The most interesting aspect was how the lack of a university-sponsored research and extension program has led to the development of a completely fee-based service in education and outreach in the NZSTI. The turf managers I met had a sincere appreciation and respect for the NZSTI personnel and services. It never ceases to amaze me that no matter how far one travels from the U.S., how common that thread of human decency and friendliness is among people involved in the turf industry. ♣

