"SWEET FLOWERS ARE SLOW AND WEEDS MAKE HASTE"

WILLIAM SHAKESPEARE

Wasaga Beach Sports Park
Photo: Town of Wasaga Beach

OTS HIGHLIGHT
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How to Influence the Sports Field Maintenance Budget

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Why is this topic important? Securing budget resources for sports field and parks infrastructure and maintenance needs strong evidence-based arguments to warrant investment by decision-makers.

Current and Past Fiscally-Based Service Reviews

More than ever, in the midst of the European debt crises that influence government policies across the world, public and private organizations are reviewing their mandates, their scope of operations as fiscal resources become ever more stretched. The days of "silo-based thinking" and protecting budgets and resources solely for defined and specialized interests are coming to an end.

How can turf managers provide proof that their work provides "value for money"? Successive citizen reform movements and questions raised by California's "Proposition 13", the Ontario NDP's "Social Contracts and Rae-Days", the Ontario Conservative government's "Common Sense Revolution" and now even the frustrated 20-something's "Occupy Movement" frame some fundamental shifts in societal perceptions about services and trust in large multi-national corporations and government.

Parks services have enjoyed relatively high levels of citizen support in recent years. Consistently, parks and trails are considered to be amongst the most appreciated municipal services with citizen approval survey ratings topping 80-90%

THE DAYS OF "SILO-BASED THINKING" AND PROTECTING BUDGETS AND RESOURCES SOLELY FOR DEFINED AND SPECIALIZED INTERESTS ARE COMING TO AN END.

(Ref: polls by Environics, Pollara, and 2005 City of Calgary), equivalent to or higher than fire services, libraries and police services.

Moving to an Experience-Based Economy and Maslow's Hierarchy of Needs

Society has moved from an agrarian to the industrial/manufacturing age, then to a service-based economy, and now we may be moving into yet another phase, the "experiential economy", where citizens, beyond making a living through traditional means, want opportunities to "experience" a variety of opportunities accessible to them.

Maslow's Hierarchy of Needs reinforces the concept that beyond basic needs such as food, shelter, and clothing, society desires moving "up the hierarchy" toward self-fulfillment and expression of their ultimate desires. So how does this relate to turf budgets?

Parks, outdoor sports, trails and open spaces have many advantages in relating toward societal self-fulfillment and new experiences. They are generally accessible at the time and place an individual desires. People have an innate need for clean land, water, air and ultimately connection with the land and nature. In a world that is increasingly dominated by electronic gadgets and "smartphones holding

employees on a leash", a walk in the park, bicycling on a trail, taking your dog to a leash-free zone or enjoying a sunset vista and so many other choices can be available to offset obesity, boredom, social isolation and need for relaxation and to reconnect with your natural human rhythm. Properly designed, sports fields should not be considered single uses that bar regular citizens from access and spawn numerous physical infrastructure not necessarily in keeping with local citizen perceptions of quality spaces. Minimizing use of fencing but use of more natural features and barriers may assist in great multi-use capabilities and harmonization of objectives within shared active and passive park areas.

Capitalizing on the Natural Advantages of Parks, Trails and Public Spaces

So what are the kinds of "evidence-based investments" that may buttress requests for turf maintenance resources? People who go to outdoor spaces want an experience that is memorable to their own needs. Rarely can parks staff communicate the number of people visiting parks, when they do so and the value people place upon such visits. Recently infra-red installations can monitor numbers of visitors on pathways to begin to quantify park visitation *(Source: City of Mississauga, 30+ indoor and outdoor installations)* which allow departments to compare total visitation, cost and time of visitation.

Outdoor spaces have the advantage of changing seasons, exposures to nature, the ability to exercise while you are "multi-tasking" your senses! But what spaces become attractive to these desires?

For many years, the PPS movement *(Eleven Principles for Creating Great Public Spaces, The Project for Public Spaces, 2009)* confirmed that successful spaces that have a minimum of 10 different activities or areas of interest within eyesight, have a much higher rating of acceptance and quality. Framing of quality spaces requires the integration of skills amongst parks professionals that include parks/sports turf managers, horticulturalists, arborists and those invaluable parks staff that are "jacks of all trades" facilitating park uses for everything from small to large special events, concerts, picnics, tourism and intensive urban squares.

But how does the average parks professional gauge what are appropriate investments? Does the turf manager get a chance to speak to those who design parks and sports fields? Do turf staff work closely with horticultural and arboricultural staff to decide what kinds of experiences park and sports field users desire to the point that the human senses, seeing, hearing, feeling, tasting (food concessions) are brought together consciously to relate to meeting the desires of park, trail and specialty space users?

PEOPLE WHO GO TO OUTDOOR SPACES WANT AN EXPERIENCE THAT IS MEMORABLE TO THEIR OWN NEEDS

Find Out What Clients Really Want

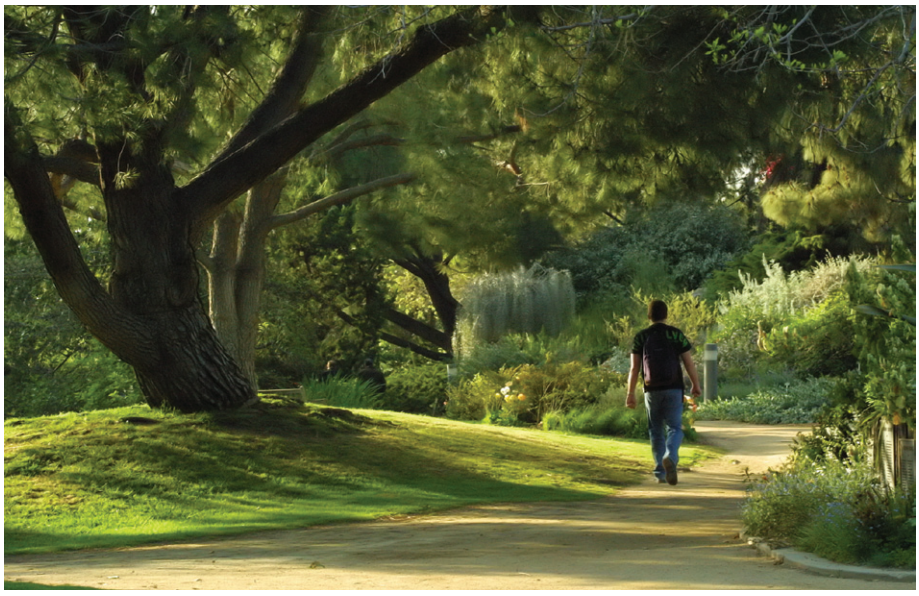
More than ever, parks and turf managers need to reach out to their clientele beyond the traditional user-paying sports groups, to ethnically-diverse populations, to varied age-groupings, to people of different incomes, and use research to ask the actual client what their experience was through a variety of means.

Elected officials have important and difficult jobs. Most of the time these officials want to be re-elected. Elected officials are less likely to cut services that receive detailed and positive feedback from constituents that their needs and wants are being satisfied.

So turf managers need to outreach to community groups or to clientele that they are paid to satisfy and meet the "physical cues" that are important.

In many places, parks may often feature one or two park benches, an under-used playground structure, fenced-in sports field, no pedestrian or trail linkages and little else to make a park "more public". Indeed, in such places, people on park benches are viewed with suspicion, as they must be vagrants, intoxicated or homeless to occupy such a place. Such "parks of desolation" are likely to be viewed as less safe, more forbidding and less valued by citizens.

Contrast that experience with parks that feature "place-making" philosophies ensuring with professional parks managers using multiple disciplines and all of the "toolkits" available to create and sustain outstanding quality parks. Such parks have variety of vegetation, healthy mature trees, attractive pedestrian and cycling options, spaces designed to encourage human



socialization, and feature water, texture, colour, natural features, smells and vistas, cultural and heritage interpretation and preservation and habitats for wildlife.

Park managers need to find ways to document how many users are in parks, using what features at what times. Find ways to ask users what they really value about various aspects of park spaces, trails and features. Link park best practices, benchmarking and continuous improvement to matching your ability to provide what people really want and gain partners who will advocate on your behalf.

Use the incredible example of busy urban spaces such as New York's Central Park which now uses a conservancy model to ensure that citizens in that city do not have to live in "concrete jungles" and can still have picnics, view wildlife, enjoy grass and shade of trees just a walk away from office towers, subways and intensified urban environments.

Ensure that your public parks and spaces emphasize natural and vegetative solutions that harmonize within a multi-use environment. Minimize situations that can be perceived as "ugly aging physical infrastructure – such as rusting sports field fences keeping non-sport users out". Gain the trust of a wider constituency by offering your services to community groups, set up open houses and invite citizens who would like to get back in touch with the land and may need your advice on good cultural practices.

Dr. John Crompton, distinguished professor at Texas A & M University *(Source: Repositioning Parks & Recreation – The Key the Field's Future Vitality: 2009 Video)* has documented that time after time, investments in quality parks, trails and trees more than offset such investments by increased property assessments, reduced crime rates, greater public presence and feeling of safety, respect and pride in parks by local neighbourhoods.

Parks professionals no longer should be perceived as "open space maintenance custodians". Natural turf, arboriculture and horticulture frame important public spaces and provide colour, texture, cooling and relief from hard surfaces, so prevalent in today's communities.

Full public and professional input to sustainable parks and open designs will move toward understanding and delivering upon what citizens really want and are willing to support financially. Parks staff need the voice of many "communities" to advocate the cause of quality public spaces, places and parks but that can only be done by parks staff willing to step out from rigidly-defined job roles and to get out there to find out what park users "really want". •

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Rhizomatous Tall Fescue and Regenerating Perennial

Rhizomatous Tall Fescue (RTF) and Regenerating Perennial Ryegrass (RPR) have been discussed quite a lot in the turf industry. There are three questions asked: 1.) What is RTF and RPR? 2.) Are they different from conventional tall fescue and perennial ryegrass? and 3.) Can they be used for sports fields?

Rhizomatous Tall Fescue (RTF)

Before we can look at RTF in sports fields, we need to examine tall fescue itself, because not all the tall fescue is the same. Tall fescue [*Festuca arundinacea* Schreber; or *Lolium arundinaceum* (Schreb.) Darbysh.; or *Schedonorus arundinaceus* (Schreb.) Dumort.] is actually a species complex of three different and distinct morphotypes. The three morphotypes are: 1.) Continental (CTF); 2.) Rhizomatous (RTF); and 3.) Mediterranean (MTF). Each of these morphotypes differs significantly morphologically, genetically, physiologically and geographically. It has been proposed that these hexaploid (2*n*=42) tall fescues evolved separately on the north and south sides of the Alps and Pyrenees Mountain Ranges. Part of this proposition is also based on the fact that there is often a lack of observed infertility between crosses of the three ecotypes.

Continental tall fescue (CTF) is the morphotype in which the majority of the turf and forage varieties originate. This northern morphotype evolved in Europe, mainly north of the Pyrenees and the Alps. The other two morphotypes (Rhizomatous and Mediterranean) evolved independently south of the Alps and Pyrenees Mountain Ranges. The southern ecotypes range from Iberia (Spain, Portugal), Northern Africa, and Italy. Also, the RTF and MTF harbor endophytes that are genetically, biochemically and morphologically distinct from *N. coenophialun* which is found consistently in the Continental (northern) ecotype.

CONTINENTAL TALL FESCUE (CTF) IS THE MORPHOTYPE IN WHICH THE MAJORITY OF THE TURF AND FORAGE VARIETIES ORIGINATE.

CTF is winter dormant, summer active, with or without short rhizomes (but inconsistently produces these rhizomes), and contains the *Neotyphodium coenophialum* endophyte. The ancestors of the Continental types are theorized to be *Festuca fenas* Lag. (syn.= *Festuca arundinacea* subsp. *fenas* (Lag.) S. Archang.) (2*n*=28) and meadow fescue (*Festuca pratensis* Huds.) (2*n*=14,28).

The Rhizomatous (RTF) morphotype is found mainly in the Pyrenee Mountains, northern Spain and Portugal. This morphotype is distinguished by the presence of longer and higher number of rhizomes (than either the Continental and Mediterranean ecotypes), summer and late fall active, more active in fall and winter than Continental morphotype in mild temperate climates, but less than Mediterranean morphotypes. The ancestors of the RTF morphotype are theorized to be a *Festuca* fenas-like species and meadow fescue, because the endophyte, morphology, distribution and physiology of the RTF are different from the Continental type. Also, the high degree of sterility often observed in progeny of crosses between RTF and CTF is an indicator that the ancestry of the RTF group is probably different from the Continental TF.

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Ryegrass for Sports Fields?

The Mediterranean (MTF) morphotype ranges south of the Alps and Pyrenees, from Iberia (Spain, Portugal), Northern Africa, and Italy. This morphotype is distinguished by being winter active but lack of winter hardiness, summer dormancy, with or with short rhizomes (but inconsistently produces these rhizomes). Currently there are no Mediterranean types known to be used in turf. The few varieties of the Mediterranean ecotype commercially available are used for forage. The ancestry of the MTF is very different from the other two morphotypes (RTF and CTF), with the putative ancestors being even different species than those ancestors of RTF and CTF.

As mentioned, the Continental (CTF) morphotype is the group from which the majority of all turf and forage varieties originate. There are only a few turf varieties known to have been developed from the Rhizomatous tall fescue morphotype germplasm. The Royal Barenbrug Group has released 'Labarinth' (US 6,677,507 B2 patent) and the following varieties developed under that patent: Barspider, BAR Fa7676, BAR Fa 9125, and BAR Fa 9017.

Studies have demonstrated that the RTF morphotype makes significantly more rhizomes and longer rhizomes than CTF morphotypes, even on different soil

THE ANCESTRY OF THE MTF IS VERY DIFFERENT FROM THE OTHER TWO MORPHOTYPES (RTF AND CTF), WITH THE PUTATIVE ANCESTORS BEING EVEN DIFFERENT SPECIES THAN THOSE ANCESTORS OF RTF AND CTF.

Table 1. Number of Rhizomes per Tall Fescue Plant at two locations: Albany and Boardman, OR. 30 plants measured.

	Average
Labarinth	10.2
Kentucky 31+	1.0
Rebel II	0.9
Silverado	0.5
Bonanza	0.6
Shortstop	0.4
Bonsai	0.2
Rebel Jr	0.3

The LSD values for comparing two varieties within the same sampling period and two sampling periods within the same variety at 5% level of significance is 2.4 rhizomes/plant.

Table 2. Average Length* of Rhizomes per Tall Fescue Plant at different Sampling Periods (averaged across two Locations). 30 plants measured.

	Average (cm)
Labarinth	7.3
Rebel Jr	5.0
Silverado	4.8
Shortstop	4.6
Kentucky 31+	4.3
Bonanza	4.2
Rebel II	4.1
Bonsai	3.5

The LSD values for comparing two varieties within the same sampling period and two sampling periods within the same variety at 5% level of significance is 1.9 cm.
*Average data from only plants with rhizomes

types (Table 1 and 2). Rhizome studies have also be conducted on RTF and those CTF varieties that can produce some rhizomes. In one study nine varieties were measured: Labarinth (RTF); F1B (RTF); Blade Runner (CTF); Grande (CTF); Grande II (CTF); Titan (CTF); Titan LTD (CTF); Rendition (CTF) and Barrington (CTF). Twenty-five plants per replication (3 replications) were measured (75 plants per variety) for one year. The characters measured: 1) Number of rhizomes per plant; 2) percentage of plants with rhizomes (at least 1); 3) percentage of plants with more than one rhizome; and 4) average length of rhizome. The results showed that the RTF morphotypes made significantly more rhizomes (at least 20 times more than the CTF rhizomatous varieties), higher percent of plants with rhizomes and longer rhizomes (Tables 3, 4 and 5). The RTF morphotypes will continue to make rhizomes even when mowed as turf.

Since RTF and CTF are different morphotypes we can now ask the question of how the RTF morphotype does on sports fields. Studies have also been conducted on the use of RTF ecotypes on sports fields at the University of Illinois. One of the studies evaluated RTF®, CTF, and Kentucky bluegrass (KBG) sod under mechanical traffic simulations. The traffic machine is a modified Brinkman weighing ~2,000 lbs which

RTF HAS BEEN WIDELY BEEN USED ON SPORTS FIELDS IN USA AND CANADA.

applies both shear force and vertical compression to a depth of ~1/2 inch. Traffic was applied once a week with several passes per week for the month of August. The results were that intense traffic does reduce quality of all the entries studied, but that the RTF® + KBG and KBG sods were the best for traffic and the RTF® without KBG was as good as CTF + KBG. So, the rhizomatous tall fescue morphotype can be used in sports field situations. RTF has been widely been used on sports fields in USA and Canada. It has performed very well and users are re-purchasing RTF® as it performs for them. The root system and the rhizomes make a more stable rootzone on sand based sports fields. This means that less damage is done to those types of fields. RTF® is an asset for sand based sports field situations. For more information go to barusa.com.

Regenerating Perennial Ryegrass (RPR)
Stoloniferous perennial ryegrass
[*Lolium perenne* L. subspecies *stoloniferum* (Lawson) Wipff]

Regenerating Perennial Ryegrass (RPR) is a subspecies of perennial ryegrass that produces stolons. Stolons can be classified into two types: determinate- and indeterminate-stolons. A determinate-stolon is an above-ground horizontal stem which roots at the nodes and does not produce aerial shoots indeterminately, but the apical apex will eventually terminate with an inflorescence (e.g., referred to herein as *Lolium perenne* subsp. *stoloniferum*). An indeterminate-stolon is an above ground stem which roots at the node and from which shoots are produced progressively

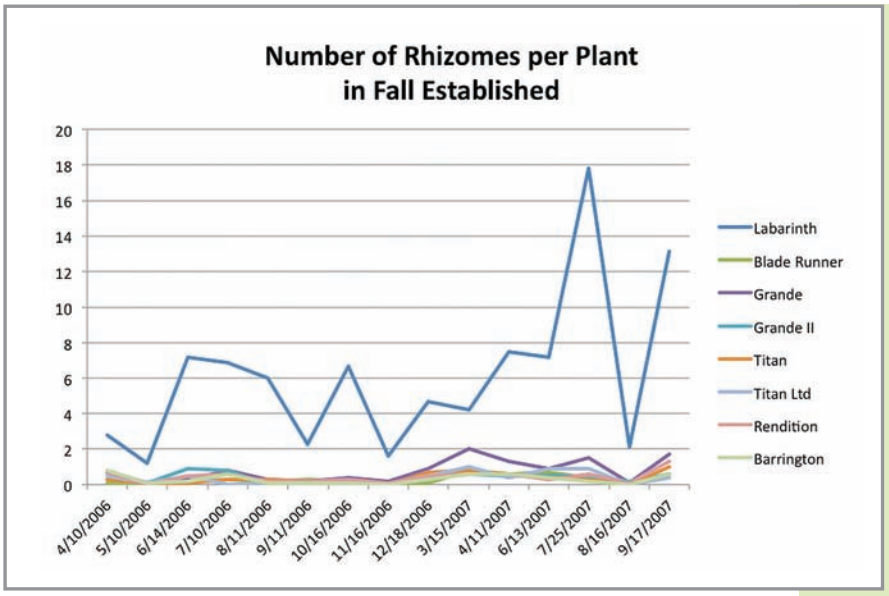

Table 3. Only Labarinth RTF® exhibited a significant number of rhizomes throughout year.

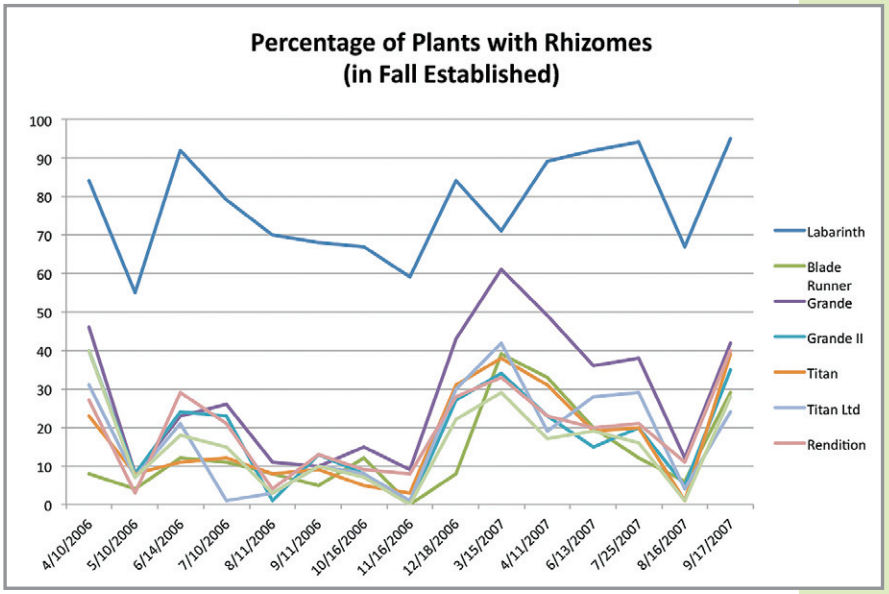

Table 4. Labarinth RTF® plants consistently exhibited greater rhizome production that the other varieties.

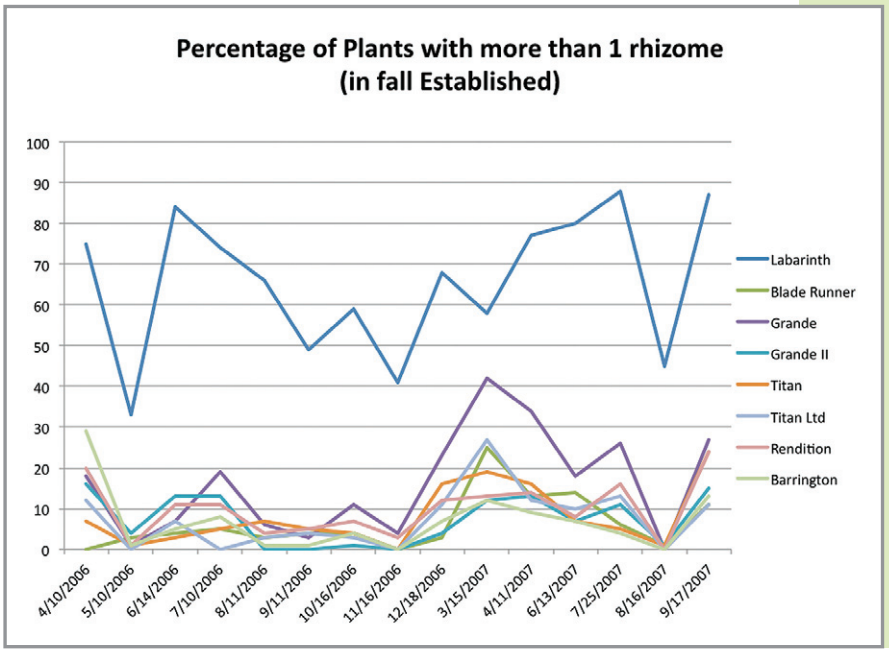

Table 5. Labarinth RTF® produces more rhizomes per plant that the other varieties.

and this horizontal stem will never terminate with an inflorescence, but apical apex remains vegetative (e.g., bermudagrass and creeping bentgrass). See Figures 1 and 2.

Perennial ryegrass is an important species for sports fields. Though perennial ryegrass is one of the most wear tolerant cool-season (temperate) turfgrasses available, the demand for more wear tolerance has increased due to increased use of sports fields, parks, golf courses, and recreational areas. Improvements in summer wear tolerance have been achieved previously indirectly by increasing shoot density. Winter wear on European sports pitches has been reduced partly by empirical evaluation of wear-resistance of ryegrass varieties using artificial wear machines with studded rollers and using those varieties most wear-resistant. These were only evaluations done on finished varieties to determine if some may happen to have some wear tolerance. However, no selections were performed and no new wear-resistant varieties were developed from these studies. Traffic simulation is mainly performed to evaluate the wear-resistance of already released cultivars (e.g., for athletic field research). So, traditionally, especially in the USA, traffic tolerance is only a characteristic determined once a variety has been commercially (or about to be) released, and not part of its developmental history. Whether a variety (not developed for traffic tolerance) has some traffic tolerance, is no indication that it can actually recover from traffic injury. In fact, we see that these varieties are not able to recover from the traffic damage. So, it is critical that perennial ryegrass being used on a sports field is bred from the beginning under traffic stress. Which is exactly the way the RPR, with a strong recuperative ability was discovered; under long term, intense, traffic stress.

The importance and benefit of RPR is only realized because it was developed under intense traffic stress. Subjecting millions of genotypes, for many years,

Figure 1 and 2. Regenerating perennial ryegrass is a subspecies of perennial ryegrass that produces stolons. Here, stolon of *Lolium perenne* subsp. *stoloniferum*.