TECHSHEET

Tonga TETRAPLOID PERENNIAL RYEGRASS

GIVE 'EM WHAT THEY WANT!

Tonga Tetraploid Perennial Ryegrass is a high yielding, winter-hardy tetraploid perennial ryegrass. Tetraploids have four sets of chromosomes, which result in larger features such as wider leaves and larger cells. Large tetraploid cells compared to smaller diploid (two sets of chromosomes) cells have a higher ratio of cell contents "the good stuff" versus cell walls "the fiber". **Tonga** is less sensitive to drought and heat than diploid ryegrass varieties. Milk yield and animal gains can be very impressive on **Tonga** whether machine harvested or grazed. **Tonga** is the preferred tetraploid of a number of beef, dairy, and other livestock producers in the United States and Europe, as well as a key component in many of Ampac's Pasture Perfect® mixtures.

Notable Characteristics:

- Alfalfa-equivalent Maturity
- High Yields
- Vigorous growth
- High Energy/Feed Quality
- Very High Sugar Content
- Wider, more succulent leaves than diploid annual ryegrass
- Good Rust Resistance
- Excellent Palatability/Digestibility
- Easy Establishment
- Improved Winter Hardiness
- Useful for Hay/Silage/Greenchop

Applications:

- **Hay and Silage Crop** – Can be planted alone or with other grasses and legumes.
- **Grazing** - Excellent high quality grass or component of pasture mix.

Seeding Rates:

Tetraploid seed is about twice the size of diploid seed. Seeding rates are higher then diploids.
Pure seeding: 35 to 45 #/ acre.
Mixed with legumes: 25 #/acre.
New alfalfa seedings (where alfalfa is to predominant): 2-3 lbs./acre.
Mixed with other grasses: 10 #/acre

Method of Seeding:

Use of a Brillion seeder, a no-till drill or a culti-packer is ideal. Frost seeding and broadcast seeding in early fall timed with moist soil can work well, especially if the animals are allowed to "hoof" it into the existing pasture. Seed to soil contact is vital to having a successful stand. Take caution to not plant the seed more than ¼" deep. **Tonga** establishes rapidly but plants should be firmly rooted prior to first grazing.

Fertility:

Follow soil test recommendations.

Tonga is a high-energy grass. Protein content is highly influence by nitrogen fertility. When available and applicable, consider obtaining some or all of nitrogen needs through a legume such as white clover, Kura clover, red clovers, or birdsfoot trefoil. Otherwise, apply manure or commercial fertilizer at the following rates:

- **Machine harvest**: 50 lb./A nitrogen should be applied at green up and after each cutting.
- **Grazing:** 50 lb/A at the following times: after spring flush, late summer, and late fall.

Harvest and Grazing Tips:

Harvesting ryegrasses with a sicklebar cutter may be difficult. Disc mowers and drum mowers are highly preferred. For high hay quality, cut at boot stage. If grazing, graze at approximately 8 inches. When grazing **Tonga**, reduce grain levels and consider adding more fiber to the ration.

AMPAC seed company

www.ampacseed.com

Performance Data

Penn State Hay trials – Rock Springs, PA

Seeded August 1,1997

Comparison of 8 tetraploid perennial ryegrass varieties

Varieties in this trial include Tonga, Anaconda, Fetione, Impala, Tetramax, Respect, Aubisque, and Rosalin.

Variety	Cut 1 5/8-5/31	Cut 2 6/14-7/5	Cut 3 7/20-8/8	Cut 4 9/19	2000 Yield	1999 Yield	1998 Yield	1998-00 Average	Date of 1st Cutting	Stand 10/2/00
Highest score	1.28	0.92	0.53	0.45	2.41	2.97	4.96	3.26	5/31	93.7
Tonga	**0.87**	**0.49**	**0.38**	**0.25**	**1.99**	**2.91**	**4.64**	**3.19**	**5/15**	**86.9**
Lowest score	0.42	0.39	0.20	0.25	1.47	2.51	4.38	2.93	5/15	86.9
LSD	0.27	0.20	0.19	0.28	0.52	0.47	0.48	0.31		5.2

Additionally, Feed values were taken on the first cut of 2000.
Remember, for ADF and NDF, the LOWER the score the better.

Variety	% Protein	ADF	NDF
Highest Score	16.7	33.8	60.8
Tonga	**13.0**	**27.5**	**54.3**
Lowest Score	10.0	27.5	54.3

Further trial information may be found at *http://forage.cas.psu.edu/docs/species/Rocksprings.html#grass2*.

Ohio State University Forage Performance Trials

Ryegrass Variety Trial - Wooster, Ohio - 1999 Seeding

Ohio. Wooster, Sown 4-7-99

	Yield in Tons DM/Acre in 2000						Maturity[a]		Rust[b]	Vigor[c]	Weeds[d]
Variety	22-May	22-Jun	25-Jul	25-Aug	27-Oct	Total	1st growth	2nd growth	22-Aug	22-Aug	22-Aug
Highest score	2.97	1.54	1.16	1.20	1.36	7.64	4.8	3.6	4.9	4.6	3.8
Tonga	**2.83**	**1.28**	**1.09**	**1.05**	**1.26**	**7.52**	**4.0**	**1.0**	**2.2**	**4.4**	**3.0**
Lowest Score	2.03	0.91	0.88	0.81	0.49	5.44	1.3	1.0	1.9	2.4	0.9
LSD 0.05	0.28	0.29	0.25	0.26	0.30	0.61	0.6	1.8	1.1	1.2	1.0

Data compares Tonga with other ryegrasses including Aubisque, Boxer, Elgon, Grand Daddy, Respect, Session, Barfort*, Prana, Samson, Amazon, Anaconda, Eminent, Sampson, Impact, Norlea and blends BG-34 and BG-16.

[a] Maturity -- 1 = vegetative, 2 = early boot, 3 = initial emergence of inflorescence (head emergence), 4 = complete emergence of inflorescence from boot, 5 = elongated peduncle (stem holding inflorescence).

[b] Rust: 1 = 1-20%, 2 = 21-40%, 3 = 41-60%, 4 = 61-80%, 5 = 81-100%.

[c] Vigor: 1 = least to 5 = most

[d] Weeds: 1 = least to 5 = most

Establishment: Seeded with a Hege 3-point hitch drill with press wheels at 20 lb/a.

Soil type and analysis: Riddles silt loam, pH = 6.13, P = 54lb/a, K = 228 lb/a (11/00).

2000 Fertilization: Ammonium Nitrate (34-0-0) applied 24-March at 225 lb/a and 150 lb/a after cuttings 1 - 4.

Further trial information may be found at http://www.ag.ohio-state.edu/~perf/forage00/s195_t16.html

MORE INFORMATION, TESTIMONIALS, PHOTOS AND TRIAL RESULTS AVAILABLE AT:
www.ampacseed.com/tonga.htm