

13th International Conference on

Agriculture & Horticulture

September 10-12, 2018 | Zürich, Switzerland



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Adaptive but static: Seed yield responses of creeping red fescue (*Festuca rubra* L. ssp. *rubra*) to environmental and management factors in the peace river region of western Canada

Peace River region covering about 230,000 square kilometers around 55° north latitude and 119° west longitude is the north western agricultural frontier of Canada. The cropping environment is typified by long photoperiods during short growing season and predominance of acidic luvisolic soils with poorly developed profile. This region has evolved to be one of the major pockets of seed production of forages and turf-grasses which are exported to 34 countries with major proportion destined to the USA, China, Netherlands, Germany, Poland, Denmark and Argentina. Creeping red fescue seed constitutes major bulk of export with primary use as turf-grass for lawns and golf courses in the temperate regions. Despite being one of the pioneer crops in the region, relatively few publications exist about yield constraints analysis and optimal crop management practices. The knowledge and technology gaps are manifested by the stagnation in seed yield of the crop. This presentation synthesizes the results of studies on creeping red fescue in the Peace River region. Relevant information will also be excerpted from studies about the temperate forage seed crops to identify potential agronomic options and knowledge gaps for enhancing the seed yield of creeping red fescue.



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Recent Publications

1. Fairey N A and Lefkovitch L P (2001) Effect of post-harvest management on seed production of creeping red fescue, tall fescue, and Kentucky bluegrass in the Peace River region of north-western Canada. *Canadian Journal of Plant Science*. 81(4):693-701.
2. Fairey N A and Lefkovitch L P (2000) Effect of method and time of application of nitrogen fertilizer on yield and quality of seed of creeping red fescue. *Canadian Journal of Plant Science*. 80(4):809-811.
3. Fairey N A and Lefkovitch L P (1996) Crop density and seed production of creeping red fescue (*Festuca rubra* L. var. *rubra*). 1. Yield and plant development. *Canadian Journal of Plant Science*. 76(2):291-298.
4. Khanal N et al. (2017) Response of creeping red fescue (*Festuca rubra* L.) seed crop to timing, rate and forms of nitrogen application in the Peace region of western Canada. *IHSG 2017 – Pergamino, Argentina* 5.16(87).
5. Zapiola M L et al. (2006) Trinexapac-ethyl and open-field burning maximize seed yield in creeping red fescue. *Agronomy Journal*. 98(6):1427-1434.

Biography

Nityananda Khanal is a Forage Research Scientist at Agriculture and Agri-Food Canada. He has his expertise in the agronomy of forage, field and horticultural crops with diverse work experience from tropical to temperate region, from subsistence-oriented to mechanized industrial production systems from Canada, Thailand and Nepal. His current research focuses on developing crop management practices for enhancing seed yield and quality of forage seed crops and designing cropping systems with a rational integration of perennial forage seed and annual food crops.

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