

Evaluation of Bibb (Butterhead) Lettuce Cultivars for Hydroponic Production in Saskatchewan Greenhouses

Lettuce has excellent potential as a greenhouse crop in Saskatchewan. This project evaluated cultivars of bibb-type lettuce for their suitability for hydroponic production in the greenhouse. Performance factors evaluated included speed of development, tolerance of biotic (disease and insects) and abiotic stresses (heat, cold, low light and nutrient imbalances), as well as head size, appearance, texture and flavor. A total of 53 cultivars were tested over 25 production cycles which ran from January 2012 through June 2014. The lettuce was grown utilizing a nutrient film technique hydroponic production system. Cultivars that produced looser heads tended to be higher yielding and had fewer problems with tipburn than the semi-head types. Of the loose head types - **Red Sails** (Johnny's Seed), **Two Star** (Stokes) and **Simpsons Elite** (Stokes) consistently produced large attractive heads with good flavor and minimal tipburn. **Optima** (Osborne Seeds), **Adriana (Johnny's)**, **Natalia** (Paramount) and **Santoro** (Rijk Zwaan) were the best semi-head types – combining good yields and appearance with only moderate grade out to tipburn.

Red Sails (Johnny's) – was outstanding for taste, yields and appearance. The only limitations to this cultivar are that it forms a relatively loose head and its color (mauve tips on green leaves) is not “traditional”.



Two Star (Stokes) – produced excellent yields, but its flavor and overall appearance were only average. Two Star produces a relatively open type head.



Simpsons Elite (Stokes) – very large loose heads with mild flavor. Minimal tipburn



Optima (Osborne) – was the best cultivar with a standard semi-head configuration. Optima was less susceptible to tipburn than most semi-head types but often had some tipburn – especially under conditions that drove rapid growth. Optima looked very good with nice bright green soft texture leaves. Its flavor was consistently excellent. .



Adriana (Johnny's) – consistently produced very large attractive light green semi-heads. Adriane was also fairly resistant to tipburn. Its main limitation was its flavor which was mild with significant bitter notes.



Natalia (Paramount) – small but very uniform compact heads. Good texture and flavor. Moderate tipburn.



Santoro (Rijk Zwaan) – medium sized light green attractive heads. Moderate tipburn.



For more detail see the full report on the Evaluation of Bibb Lettuce for Hydroponic Production in Saskatchewan Greenhouses:

<http://veg.usask.ca/wp-content/uploads/Evaluation-of-Greenhouse-Bibb-Lettuce-Full-Report-2014.pdf>

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