

RYE (*Secale cereale*)  
 Fusarium head blight (scab) – *Fusarium graminearum*  
 Leaf rust – *Puccinia recondita*

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### Evaluation of foliar and spike disease on rye varieties in New York, 2015

Winter rye variety trials were conducted at four locations spread across three counties in western and central New York (Genesee, Monroe, Tompkins). Tompkins County contained trials at two research farms, Ketola and Helfer. Each trial was planted in randomized complete blocks with every plot reproduced in triplicate. Each replicate was a six row plot measuring 13.12 ft by 4.13 ft. In the fall, 200 lb/a 10-20-20 fertilizer (20 lb/A of N) was broadcast over fields, and a topdressing of 150 lb/A 34:0:0 ammonium nitrate (51 lb/A of N) was applied in the spring. A broadleaf herbicide and surfactant were applied in early April to control weeds. Seed were sown at 200 kernels/m<sup>2</sup> between 2 to 9 Oct. Sixteen varieties were planted, and with the exceptions of AC Hazlet and Danko, all varieties were hybrid lines. No inoculum or fungicides were applied. Disease was rated at the Genesee site on 24 Jun. The two fields in Tompkins County were rated for disease on 1 Jul. The Monroe trial had only traces of disease and ratings were not recorded. Leaf rust ratings are percent flag leaf affected averaged over entire plots. The FHB Index is a composite score based on incidence and severity (percent infected heads\*percent area affected/100). Mean ratings from each location were separately subjected to ANOVA, and significant differences were identified using Tukey's HSD test ( $P=0.05$ ).

All varieties included in these trials were susceptible to scab. The hybrid varieties KWS H-145 and H-149 were among those with the greatest scab index, while the traditional Danko and hybrid KWS Livado varieties were among those with the lowest scab index. The leaf rust data displayed is representative of all four trial locations. Pustules were detected on every variety, and none of the varieties displayed any signs of an immune response. The variation in KWS Brasetto seeding density had no discernible impact on disease ratings. Virtually no leaf or glume blotch was observed at any of the four locations. However, as rye acreage increases, it is likely that these diseases, along with scab and leaf rust, will become more prevalent in the field.

| Variety / Location | FHB Index            |    |                   |   | Leaf Rust (%)     |                   |       |   |
|--------------------|----------------------|----|-------------------|---|-------------------|-------------------|-------|---|
|                    | Genesee <sup>2</sup> |    | Ketola (Tompkins) |   | Helfer (Tompkins) | Ketola (Tompkins) |       |   |
| AC Hazlet          | 1.33                 | b  | 0.30              | b | 1.30              | ab                | 3.00  | a |
| Danko              | 0.17                 | b  | 0.41              | b | 0.42              | ab                | 1.00  | a |
| KWS Bono           | 0.26                 | b  | 1.96              | b | 0.36              | b                 | 1.67  | a |
| KWS Brasetto       | 0.23                 | b  | 1.13              | b | 0.47              | ab                | 3.00  | a |
| KWS Daniello       | 0.36                 | b  | 0.75              | b | 0.60              | ab                | 1.00  | a |
| KWS Gatano         | 0.83                 | b  | 0.37              | b | 0.48              | ab                | 1.67  | a |
| KWS Guttino        | 0.37                 | b  | 1.53              | b | 0.67              | ab                | 1.00  | a |
| KWS H-145          | 2.43                 | ab | 8.00              | a | 2.40              | ab                | 1.00  | a |
| KWS H-146          | 0.94                 | b  | 1.73              | b | 1.01              | ab                | 1.00  | a |
| KWS H-147          | 2.34                 | ab | 1.90              | b | 1.13              | ab                | 1.00  | a |
| KWS H-149          | 6.20                 | a  | 3.13              | b | 2.52              | a                 | 1.00  | a |
| KWS H-150          | 1.41                 | b  | 1.47              | b | 2.00              | ab                | 1.67  | a |
| KWS H-151          | 2.31                 | ab | 1.21              | b | 1.54              | ab                | 1.00  | a |
| KWS Livado         | 0.27                 | b  | 0.38              | b | 0.39              | b                 | 1.00  | a |
| KWS Nikko          | 0.30                 | b  | 0.60              | b | 0.77              | ab                | 1.00  | a |
| KWS Rhavo          | 0.35                 | b  | 1.70              | b | 0.34              | b                 | 2.33  | a |
| HSD ( $P=0.05$ )   | 4.68                 |    | 3.07              |   | 2.10              |                   | 2.76  |   |
| CV (%)             | 120.31               |    | 62.07             |   | 68.75             |                   | 56.68 |   |

<sup>2</sup>Numbers within a column followed by the same letter are not significantly different from each other according to Tukey's HSD Test ( $P=0.05$ )