Organic Oat Response to Variety, Seeding Rate, and Nutrient Source and Rate

Supplementary Files

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Table S1. A summary of P > F values for main effects and interactions for grain yield, plant population, number of tillers, grain nutrient content, and post-harvest soil (0 to 15 cm) nutrient contents for the organic oat trial conducted near Lamberton, MN in 2015 and 2016. Factors include three oat maturity groups in each year, two nutrient sources (beef manure or composted beef manure), three nitrogen (N) application rates and a no-N control, and two seeding rates. Main effects or interactions were considered significant at $p \leq 0.05$.

Main Effects and Interactions	Yield	Plant Population	Number of Tillers	Grain Nutrient Content						Post-Harvest Soil		
				N	P	K	Ca	Mg	S	NO_3	Bray P-1	K
Categorical variables												
Maturity group (maturity)	<0.001	<0.001	0.139	0.042	0.842	0.013	<0.001	0.032	0.001	0.056	0.587	0.215
Seeding rate (seed)	0.582	<0.001	0.490	0.831	0.441	0.148	0.874	0.789	0.741	0.740	0.594	0.760
Nutrient source (source)	0.950	0.997	0.744	0.749	0.597	0.584	0.494	0.709	0.821	0.633	0.779	0.973
Maturity × seed	0.237	0.492	0.214	0.776	0.129	0.304	0.507	0.420	0.338	0.054	0.835	0.098
Maturity × source	0.987	0.991	0.969	0.987	0.977	0.990	0.962	0.996	0.893	0.947	0.984	0.951
Seed × source	0.860	0.967	0.589	0.887	0.804	0.814	0.820	0.963	0.842	0.703	0.962	0.906
Maturity × seed × source	0.989	0.992	0.993	0.996	0.991	0.996	0.997	0.987	0.996	0.974	0.978	0.994
Regression												
Linear response												
Nitrogen rate (N)	<0.001	0.835	0.009	0.732	0.880	0.749	0.019	0.158	0.508	0.293	<0.0001	0.051
N × maturity	0.484	0.722	0.086	0.529	0.628	0.940	0.159	0.826	0.758	0.493	0.674	0.155
N × seed	0.649	0.231	0.416	0.864	0.274	0.499	0.089	0.211	0.311	0.555	0.928	0.283
N × source	0.320	0.706	0.333	0.050	0.760	0.700	0.854	0.642	0.440	0.029	0.165	0.147
N × maturity × seed	0.209	0.422	0.780	0.645	0.324	0.746	0.231	0.722	0.171	0.009	0.679	0.178
N × maturity × source	0.974	0.949	0.742	0.858	0.775	0.134	0.434	0.738	0.438	0.672	0.987	0.908
N × seed × source	0.613	0.892	0.622	0.665	0.656	0.566	0.487	0.813	0.677	0.651	0.771	0.302
N × maturity × seed × source	0.678	0.977	0.872	0.777	0.839	0.956	0.644	0.792	0.700	0.934	0.918	0.930
Quadratic response												
N	<0.001	0.719	0.207	0.549	0.998	0.699	0.013	0.235	0.498	0.176	0.027	0.000
N × maturity	0.233	0.594	0.056	0.361	0.880	0.899	0.142	0.903	0.671	0.306	0.637	0.313
N × seed	0.723	0.213	0.430	0.677	0.359	0.808	0.016	0.313	0.248	0.471	0.854	0.238
N × source	0.197	0.831	0.306	0.026	0.353	0.203	0.828	0.383	0.346	0.005	0.015	0.174
N × maturity × seed	0.341	0.213	0.776	0.347	0.374	0.807	0.104	0.724	0.118	0.016	0.689	0.300
N × maturity × source	0.989	0.980	0.651	0.802	0.797	0.043	0.294	0.711	0.255	0.857	0.963	0.753
N × seed × source	0.673	0.735	0.379	0.534	0.638	0.598	0.344	0.877	0.679	0.561	0.517	0.109
N × maturity × seed × source	0.729	0.909	0.882	0.747	0.899	0.818	0.428	0.590	0.760	0.627	0.904	0.919