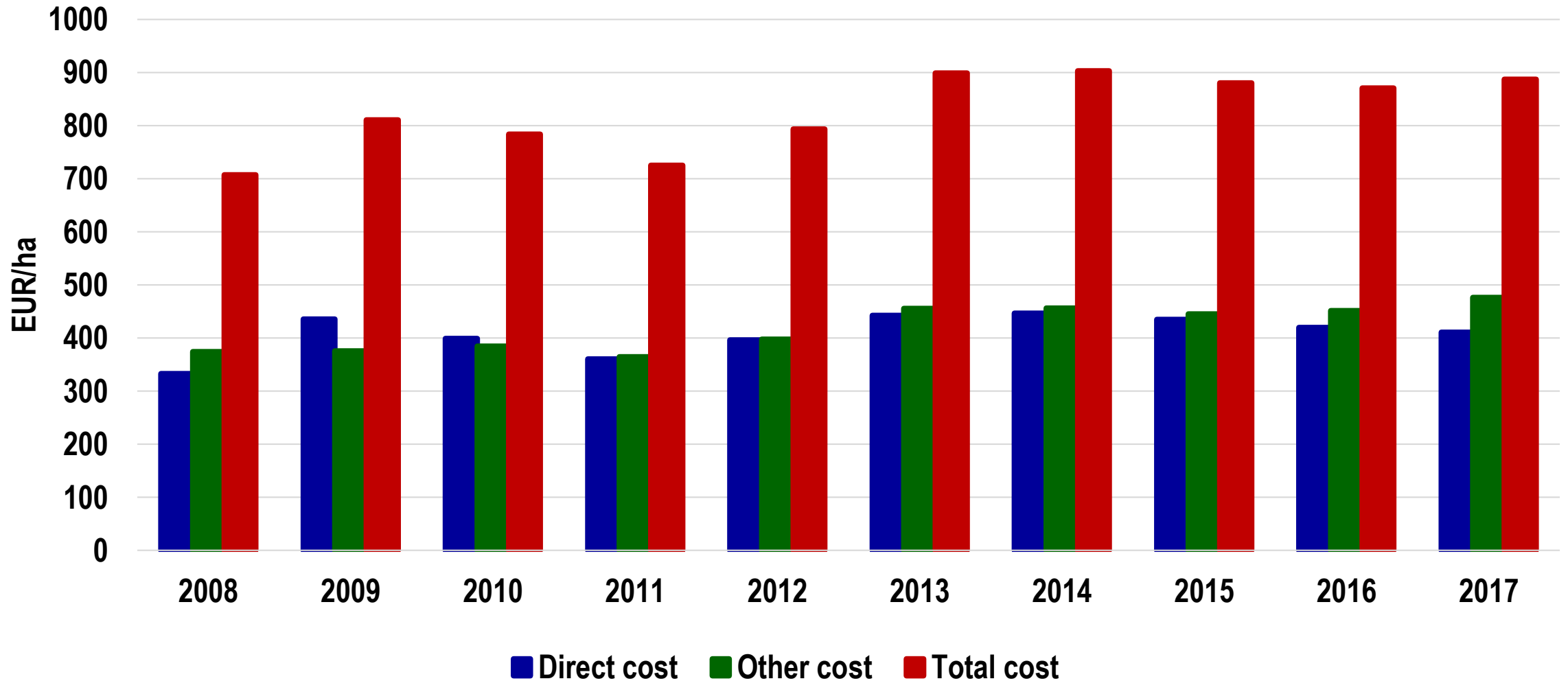


Economics of open pollinating vs. hybrid rapeseed varieties

Paweł Boczar

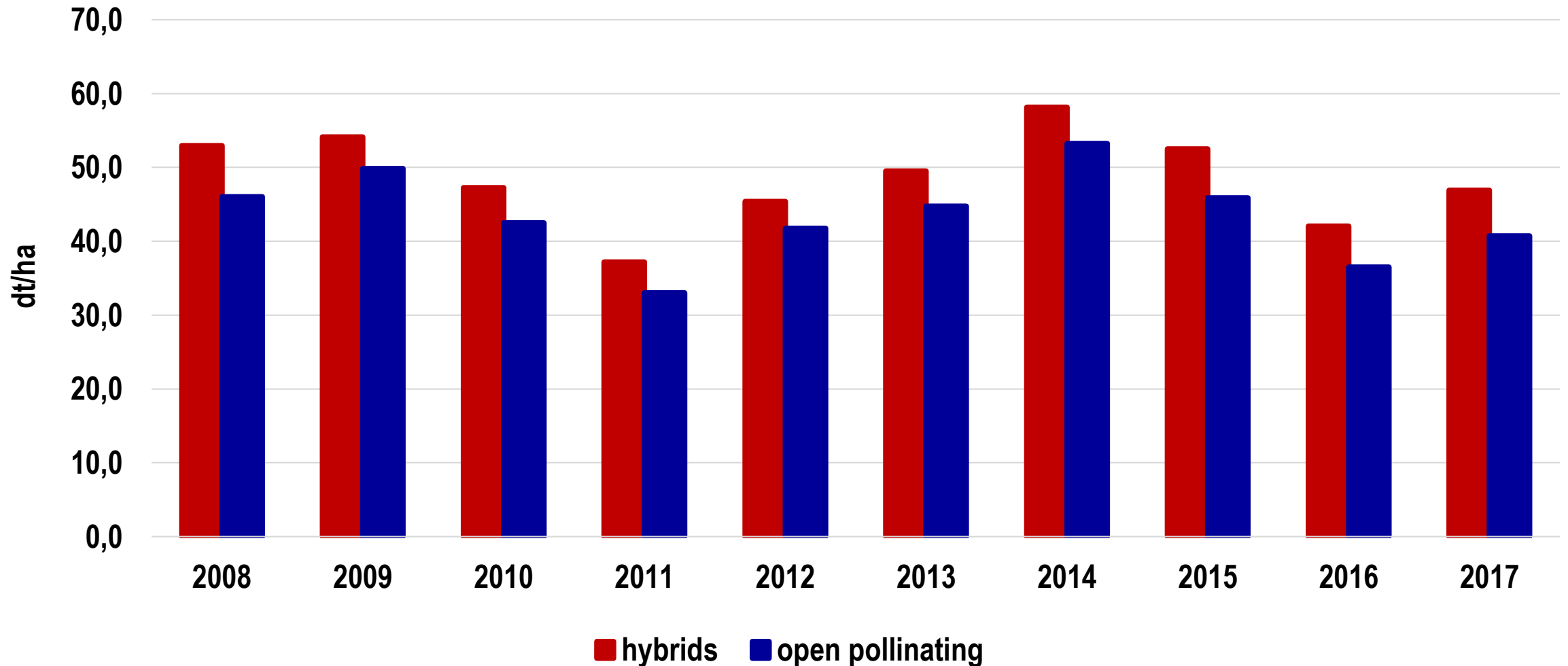
Rapeseed production costs in Poland (EUR/ha¹)



1 EUR=4,3 PLN

Source: own study based on Production, costs and revenue from selected agricultural products in the years Institute of Agricultural and Food Economics, 2010, 2012, 2013, 2015, 2016, 2018.

Yields open pollinating vs. hybrid rapeseed varieties



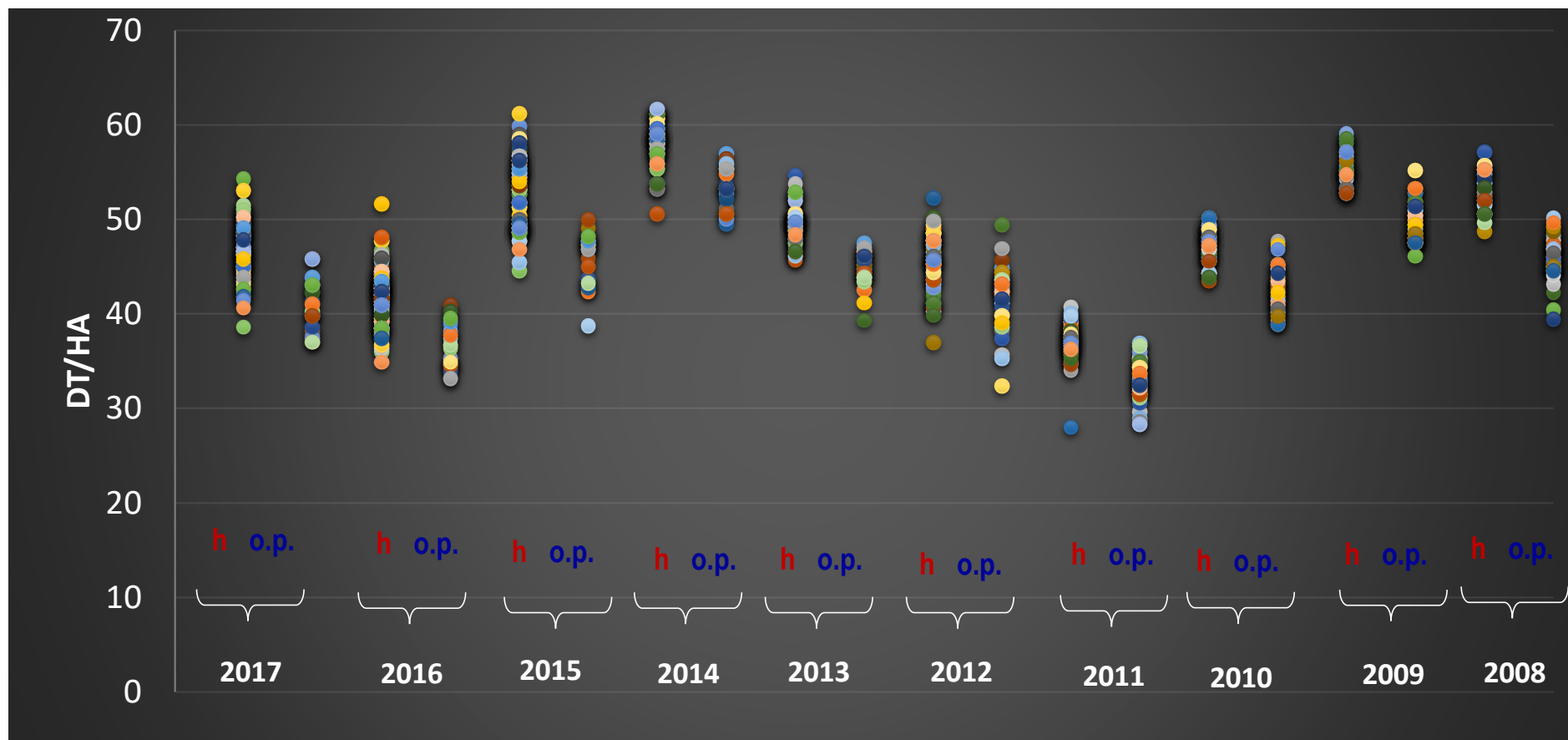
Source: Descriptive lists of plant varieties. The Research Centre for Cultivar Testing, 2011, 2013, 2015, 2018.

Differences open pollinating vs. hybrid rapeseed varieties

Average yield hybrids varieties	48.6 dt/ha
Average yield open pollinating varieties	43.4 dt/ha
Difference in yield	5.2 dt/ha
Seed cost hybrids	60-85 EUR/ha
Seed cost open pollinating varieties	25-35 EUR/ha
Difference in seeds cost	25-60 EUR/ha
Amount of rapeseed to cover the difference	0.7-1.6 dt/ha

1 dt rapeseed = 37 EUR

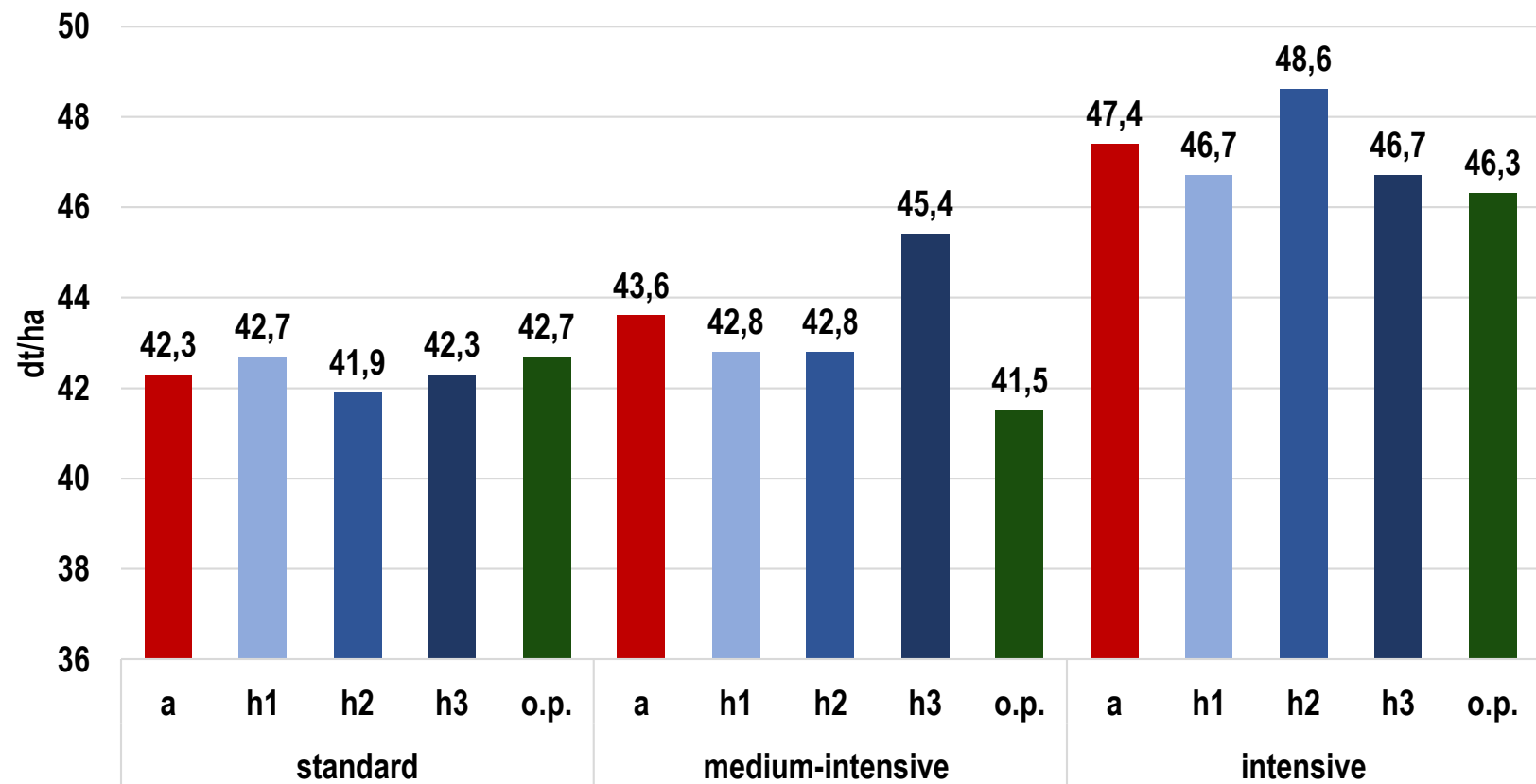
Yields open pollinating vs. hybrid rapeseed varieties



h – hybrids varieties, o.p. – open pollinating varieties

Source: Descriptive lists of plant varieties. The Research Centre for Cultivar Testing, 2011, 2013, 2015, 2018.

Rapeseed yields for different production strategies (Ø 2014-2016)



standard - 166 kg N, 3 x micronutrient

medium-intensive - 154 kg N, 3 x micronutrient, 1x fungicide (during flowering)

intensive - 189 kg N, 3 x micronutrients, 3 x fungicide (autumn, during flowering)

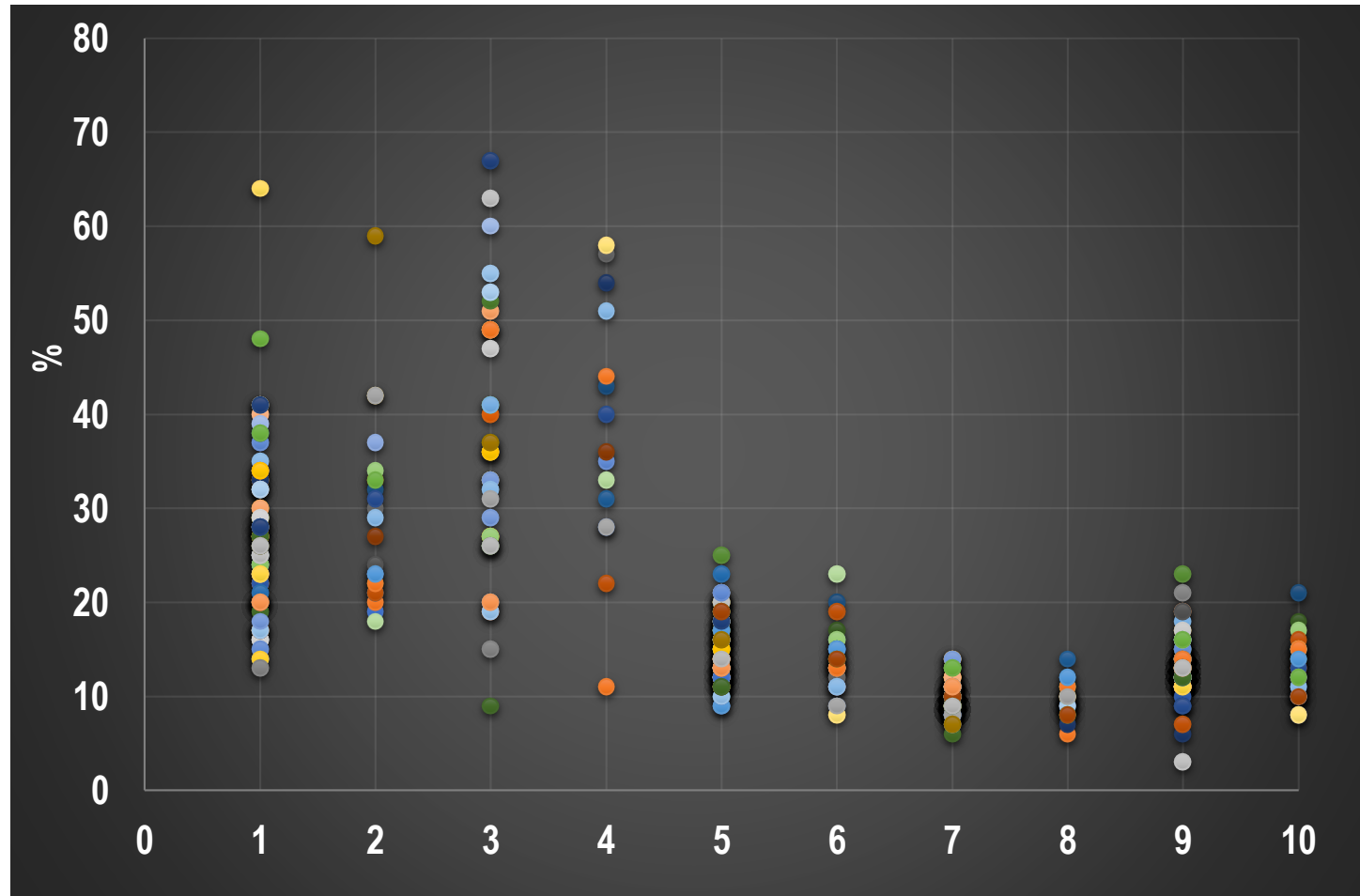
a - average of all varieties, h 1, h2, h3 – hybrids varieties, o.p. – open pollinating variety

Economics of production and seeding strategies (€/ha, Ø 2014-2016)

variants	item	average	h1	h2	h3	o.p.
medium-intensive	cost	43	43	43	43	43
	income	48	4	33	115	-44
	profit	5	-39	-10	72	-87
intensive	cost	112	112	112	112	112
	income	189	148	248	163	133
	profit	77	36	136	51	21

a - average of all varieties, h 1, h2, h3 – hybrids varieties, o.p. – open pollinating variety

Comparison of winter hardiness and healthiness of rapeseed varieties



1. Winter hardiness 2016 h (27%)
2. Winter hardiness 2016 o.p. (29%)
3. Winter hardiness 2012 h (36%)
4. Winter hardiness 2012 o.p. (38%)
5. Sclerotinia sclerotiorum h (15%)
6. Sclerotinia sclerotiorum o.p. (14%)
7. Phoma lingam h (10%)
8. Phoma lingam o.p. (10%)
9. Stalk disease h (13%)
10. Stalk disease o.p. (13%)

Summary

1. In the analyzed period, hybrid varieties compared to open pollinating varieties:
 - yielded higher by 5.2 dt / ha, which allows covering higher costs of seed;
 - they were characterized by better winter hardiness and comparable healthiness;
 - they were more responsive to the increase in yields to increase production intensity;
2. Between the varieties (hybrid and open pollinating) there are significant differences, therefore, in the final selection, apart from the yield potential itself, other features should be taken into account as winter hardiness and healthiness and the variety should be adapted to the intensity of production.