

Benefits Workbook

June, 2023

Disclaimer:

These scenarios are described with a limited number of factors and does not account for all possible aspects of the scenarios. The purpose of the scenarios is to provide inspiration on the magnitude of potential savings.

This is not financial advice nor a guarantee of economic savings by using our services. Cordulus cannot be held accountable for any damages. The document is provided "as-is" and may be subject to errors.

Currency

EUR

Conversion Rate

1.00

Farm Size: Arable Land Coverage / Weather Station (ha)

250

RoundUp Efficiency				Source	Source		Source				
Scenario	Weather Benefit	Conservative Savings / year (EUR)	Maximum Savings / year (EUR)	Conservative Savings	Maximum Savings	Application Hectares (ha)	Roundup Power/Max Cost (EUR / ha)	Activities / Year	Cost / Activity (EUR)	Approximate Cost / Year (EUR)	
Yearly Roundup application in a stubble field to combat grassweeds.	Approximately double the efficacy under correct conditions, which could result in 50% savings by reducing the dose for the same effect. Reduce use to maintain right of use.	647	6,468	5%	50%	250	52	1	12,937	12,937	

Harvest Grain Moisture				Source					Source	Source	Source	Source	Source
Scenario	Weather Benefit	Conservative Savings / year (EUR) (20%)	Maximum Savings / year (EUR) (100%)	Average winter bread wheat yield for Podemus and Informer during field trials (t/ha)	Hectares to Harvest (ha)	Total yield of winter bread wheat (t/ha)	Water Content Before Drying (%)	Water Content After Drying (%)	Dry Matter Loss (kg)	Energy Consumption (kWh)	CO2 emission for Natural Gas (kg)	Gas Volume (m³)	Gas Price (EUR)
Harvest with proper grain moisture and plan drying accordingly.	Equilibrium charts used to estimate grain moisture content using local air temperature and humidity measurements. The farmer harvests with a grain moisture content of 16% instead of 17% leading to less drying. That 1% difference leads to a significant energy and CO2 saving on natural gas.	720	3,598	119	250	29,800	16	15	35,059	49,082	10,013	4,462	3,598

Needless Driving							Source	<i>Estimate</i>	Source			Source	
Scenario	Weather Benefit	Conservative Savings / year / tractor (save 1 trip for 1 tractor per year) (EUR)	Maximum Savings / year / tractor (save 3 trips for 1 tractor per year) (EUR)	Roundtrip distance to field (km)	Traktor speed (km/hour)	Time spent (hours)	Machinery cost per hour (EUR/hour)	Pilot hourly wage (EUR/hour)	Liter Diesel / Ton / Km on road	Total weight (ton) - 10 ton traktor + 3 ton implement and weights	Total diesel consumption (L)	Diesel price (EUR/L)	Roundtrip cost per tractor (EUR)
Avoid wasting time driving to fields with unsuitable weather conditions. Save transport time, fuel, hourly wages, and machine wear.	Often times wind and rain can prevent a range of field activities such as spraying growth regulators, pesticides, herbicides, fungicides. Real-time data and local forecasts help knowing which fields are workable at any time and for how long.	88	265	40	30	1.33	28	24	0.03	13	16	1.2	88

Spraying Half-life							Source		Source		Source			
Scenario	Weather Benefit	Conservative total delay cost (EUR)	Maximum Savings / year (EUR)	Total sprayer capacity (L)	Application rate per hectare (L/ha)	Total coverage per sprayer tank (ha)	Product rate per hectare (L/ha)	Total amount of product (L)	Product price + fee (EUR/L)	Total product price (EUR)	Product 24h Half-Time (maximum)	Conservative frequency of accidents / year ("once every 3 years")	Potential frequency of accidents / year ("once every year")	Refill cost
Avoid delaying the application of mixed chemistry that is subject to aggressive half-life leading to extraneous use of chemistry.	Typically wind conditions are the determining factor when farmers are kept from spraying. Having local readings in working height (2m) allows for remote decision making.	154	461	5,000	150	33	2	66.7	13.8	922.9	0.50	0.33	1.00	461.47

Wash-off Prevention				<i>Estimate</i>	Source	<i>Estimate</i>	Source		<i>Estimate</i>				Source	Source				
Scenario	Weather Benefit	Conservative Savings / year (1 time every 5 years) (EUR)	Maximum Savings / year (1 time every year) (EUR)	Pilot hourly wage (EUR/hour)	Machinery cost per hour (EUR/hour)	Fuel consumption (L/hour)	Fuel costs / hour (EUR/hour)	Total hourly costs (EUR/hour)	Time spent per hectare (hour)	Operations costs / ha (EUR)	Hectares Covered	Water application rate per hectare (L/ha)	Water price per hectare (L/ha)	Product rate per hectare (L/ha)	Product price + fee (EUR/L)	Total input price per hectare (EUR/ha)	Total cost per hectare (EUR/ha)	Total cost per application on 30 ha wheat (EUR)
Avoid wash-off of plant protection leading to extra applications. Example: Proline EC 250 in combat Septoria.	Many products require several hours of dry weather after application. Rain eliminates the effect and can result in wash-off.	360	1,798	24	28	12	14	67	0.125	8	30	150	1.4	0.8	62.8	50	60	1,798

Securing Harvest								Source	Source	Source		
Scenario	Weather Benefit	Conservative Savings / year (EUR) (25% good harvesting hours recovered)	Maximum Savings / year (EUR)	Number of harvesters	Harvester hourly capacity (ha/hour)	Good Harvesting Hours Recovered (hours)	Hectares Harvested	Grain Mass Harvested (t/ha)	Avoided Yield Loss Mass from Breathing Out (1% loss) (t/ha)	Avoided Yield Loss Value (EUR)	Conservative Potential of Recovered Harvesting Hours (%)	Potential Recovered Harvesting Hours (%)
Secure the harvest to prevent excessive dry matter loss by optimising good harvesting hours. A single relocation decision to continue the harvest is basis of our calculations.	Timing of harvest hours to avoid rain and secure the harvest before drying causes the evaporation of water to lead to dry matter loss as well.	493	1,971	2	2.5	12	60	7152	71.52	1,870.65	25%	100%