

Living Lab of Siliana - Forage Mixture Scenario

i. Small Scale Farm Type

When we introduce forage mixture seeds available in the market with 4 tnd/kg and crop selling price of 5 TND/kg. scenario replaces most of the farm's usual crops with forage mixture, covering over three of the four hectares due to its high profitability (where forage mixture crop doesn't require too much input. Fababean and durum wheat remains as the only other crop. Pesticide use drops sharply, about 74%, and fertilizer use decreases slightly, by around 4%. There is a significant impact on income, which becomes 1,7 times more compared to the baseline, with approximately 9513,553 usd per year. Costs drop by about 52 percent, which is mainly caused by the abundance of the chemical inputs. This scenario reduces chemical inputs substantially and creates serious increase on household revenues.

Land Use

Main crops	Forage mixture (~3,1 ha), faba bean (~1,0 ha), durum wheat (~1.4 ha)
Total Area	4,2 ha
Crop diversity	Three different crops grown across the farm

Farm Activities

Fertilizer use	~247 kg/year -4% increase compared to baseline (~258 kg))
Pesticide use	~79 kg/year -74% decrease compared to baseline (~305 kg)
Labor demand	~6 person/year

Economic

In this scenario, there is no significant gain or loss in the income, since the area introduced for this crop remains very low.

Annual income	~\$9513/year +69% increase compared to baseline (~\$5,616)
Variable costs	~\$478/year -51% decrease compared to baseline (~\$994)

ii. Large Scale Farm Type

When we introduce forage mixture seeds available in the market with 4 tnd/kg and crop selling price of 5 TND/kg. scenario replaces most of the farm's usual crops with forage mixture, covering over three of the four hectares due to its high profitability (where forage mixture crop doesn't require too much input. Fababean and durum wheat remains as the only other crop. Pesticide use drops sharply, about 74%, and fertilizer use decreases slightly, by around 4%. There is a significant impact on income, which becomes 1,7 times more compared to the baseline, with approximately 9513,553 usd per year. Costs drop by about 52 percent, which is mainly caused by the abundance of the chemical inputs. This scenario reduces chemical inputs substantially and creates serious increase on household revenues.

Land Use

Main crops	Formix (~60 ha), chickpea (~14ha), fababean (~8 ha)
Total Area	91 ha (6 ha added for forage mixture, under the olive yards)
Crop diversity	Three different crops grown across the farm

Farm Activities

Fertilizer use	Near zero
Pesticide use	-73% compared to baseline (~1,904 kg vs. ~7,289 kg)
Labor demand	-68% less than baseline (~71 days vs. ~222 days/year)

Economic

Annual income	~\$148,000/year +53% above baseline (~\$97,000)
Variable costs	-47% lower than baseline (~\$10,209 vs. ~\$19,313)