Minimum Extent of Utilization

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(**x** = Extent of workload, for example in ha per year)

Costs for external mechanization = Costs for internal mechanization
€/yr contract work = €/yr owned equipment

External mechanization

Inter-company billing rate (ÜVS) in Euro per hectar
x = Extent of workload in ha per year
Total costs in Euro per year (GK)

$\mathbf{x}_{(ha/yr)} \times \text{ÜVS}_{(€/ha)} = \text{GK}_{(€/yr)}$

Internal mechanization

Fixed costs (FK) per year in Euro per year
Proportionally variable costs (PVK) in Euro per hectare
x = Extent of workload in ha per year
GK = Total costs in Euro per year

FK(€/yr) + **x**(ha/yr) × PVK(€/ha) = GK(€/yr)

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Cost balance internal and external work completion

$$FK_{(€/yr)} + \mathbf{x}_{(ha/yr)} \times PVK_{(€/ha)} = \mathbf{x}_{(ha/yr)} \times ÜVS_{(€/ha)}$$

$$FK_{(€/yr)} = \mathbf{x}_{(ha/yr)} \times ÜVS_{(€/ha)} - \mathbf{x}_{(ha/yr)} \times PVK_{(€/ha)}$$

$$FK_{(€/yr)} = \mathbf{x}_{(ha/yr)} \times (ÜVS_{(€/ha)} - PVK_{(€/ha)})$$

$$\text{Minimum Extent of Utilization [X] (ha/Jahr)} = \frac{FK_{(€/yr)}}{ÜVS_{(€/ha)} - PVK_{(€/ha)}}$$