



Improving the economic value of species mixtures through harvesting and grain separation jointed management

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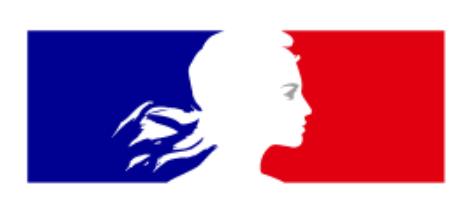
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ReMIX
Species mixtures for redesigning
European cropping systems

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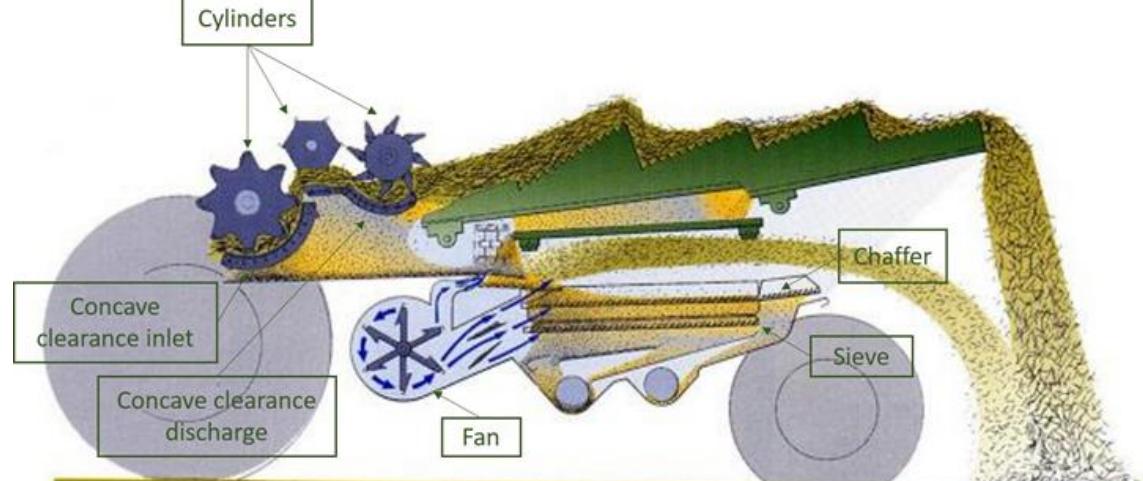
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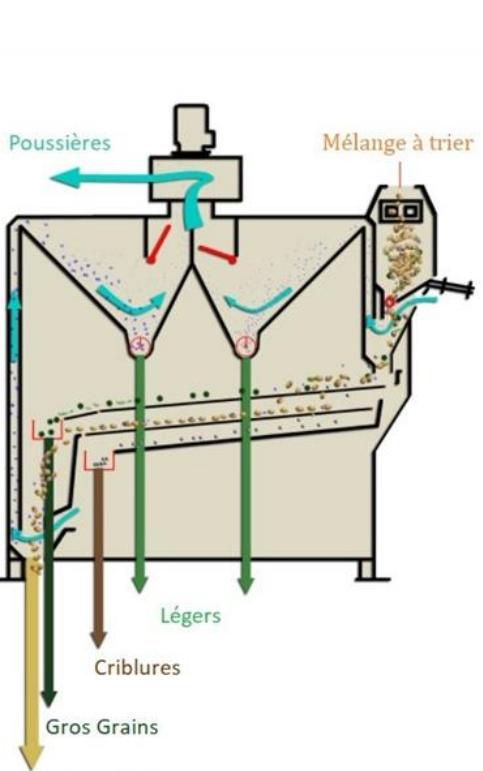
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Laverda M410 used for harvest



SVD100 used for grain separation



Effect of combiner settings on proportion of broken grains



Insufficient quality after a single separation step for wheat-lentil

Improving the economic value of species mixtures through harvesting and grain separation jointed management

Context

- Demonstrated interest of species mixtures (yield, stability, quality)
- Grain separation remains a crucial lock-in for a larger adoption

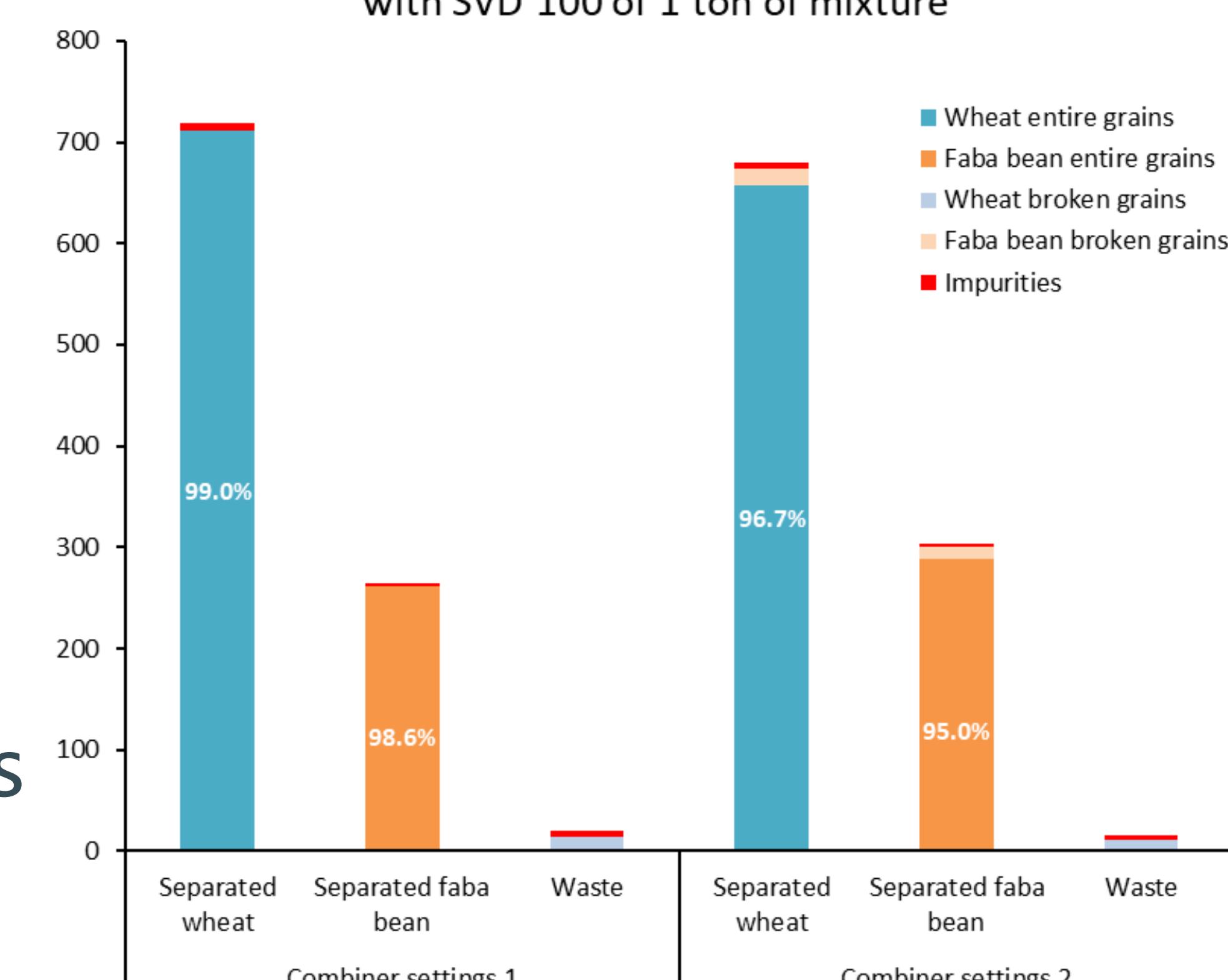
Objectives

- Assess the feasibility of harvesting and separating two species
- Determine harvest-separation settings maximizing economic value

Materials and Methods

- Large field trial on species mixtures with different grains size (wheat–lentil, wheat–faba bean, wheat–lupin, barley–pea, rapeseed–pea)
- Use of existing machines:
 - Combiner Laverda M410 (AGCO)
 - Separator SVD100 (Etablissements Denis)

Dry weight (kg) of entire grains, broken grains and impurities after one step separation with SVD 100 of 1 ton of mixture



Results

- Certain combiner settings limit losses, impurities and broken grains (e.g. settings 1 vs 2 in the figure)
- A single separation step may be sufficient for wheat–faba bean, wheat–lupin and rapeseed–pea
- A second separation is necessary for barley–pea and wheat–lentil

Conclusion

- Harvest can be optimised by efficient settings of current combiners
- The feasibility and efficiency of grain separation depends on:
 - The mixed species (e.g. difference in grain size)
 - The quality of the harvest (e.g. % of broken grains)

Species mixtures can be properly valued economically by optimising harvest and grain separation parameters



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