U.S. Soybeans Update: Current Crop Conditions and 2020 Planting Intentions

Brian Kemp, Iowa Soybean Farmer

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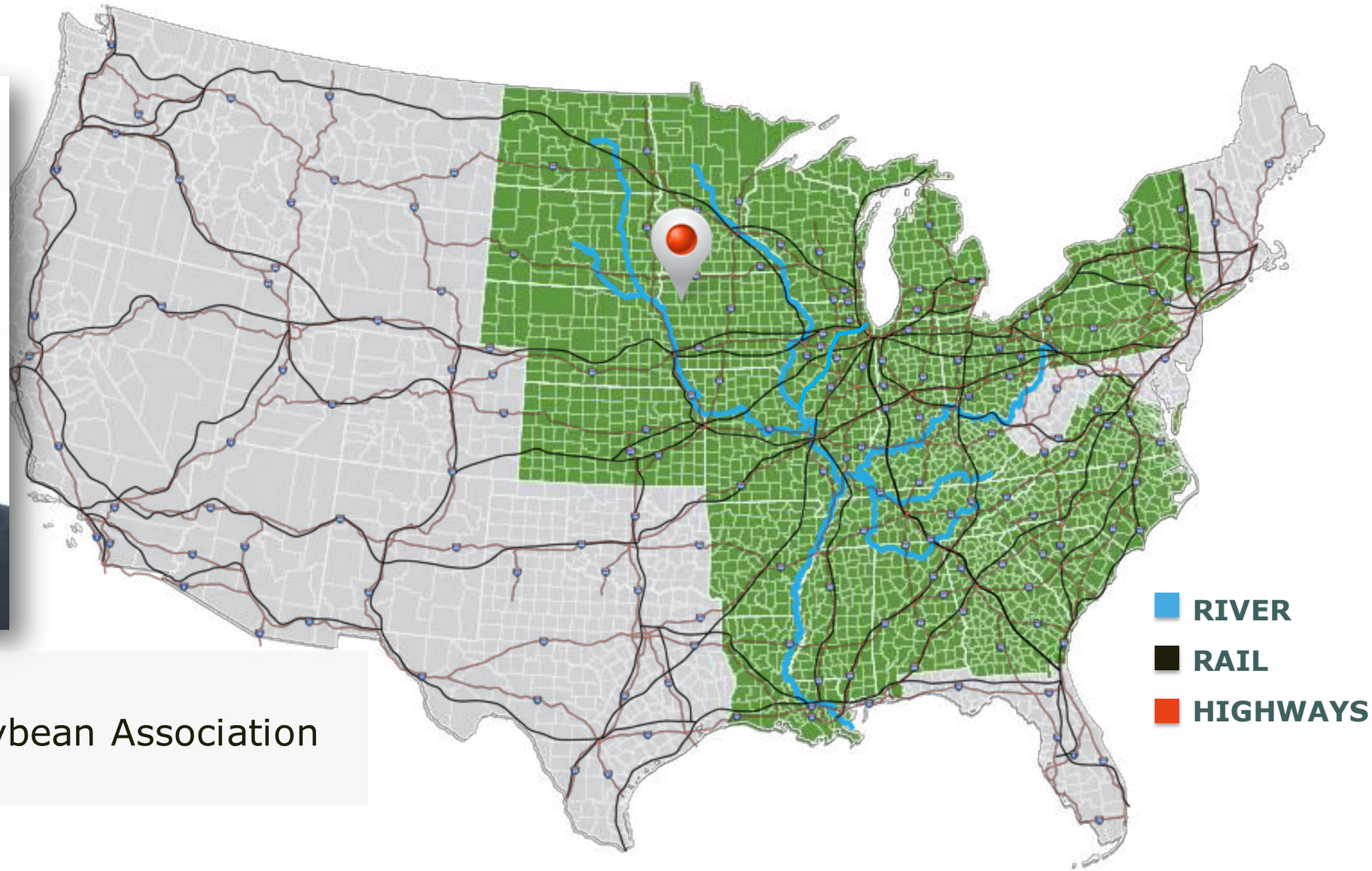

BRIAN KEMP

Director, American Soybean Association
Iowa Soybean Farmer

About My Farm

- 4th generation farmer from Sibley, Iowa
- Raise soybeans and corn with wife Cindy on 1,550 acres (approx. 627 hectares)
- Involved in operation since 1975
- 30 years of management
- Raised daughters Courtney and Andrea on farm


KEMP
Farms
SIBLEY, IOWA


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FARM
owned by the same
family for over
100 years
Farm Bureau
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Sustainability On My Farm

Minimum Tillage | Grass Waterways | Terraces
Conservation Practices | Precision Agriculture Technology

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U.S. Soybeans Crop Progress and Conditions

USSEC
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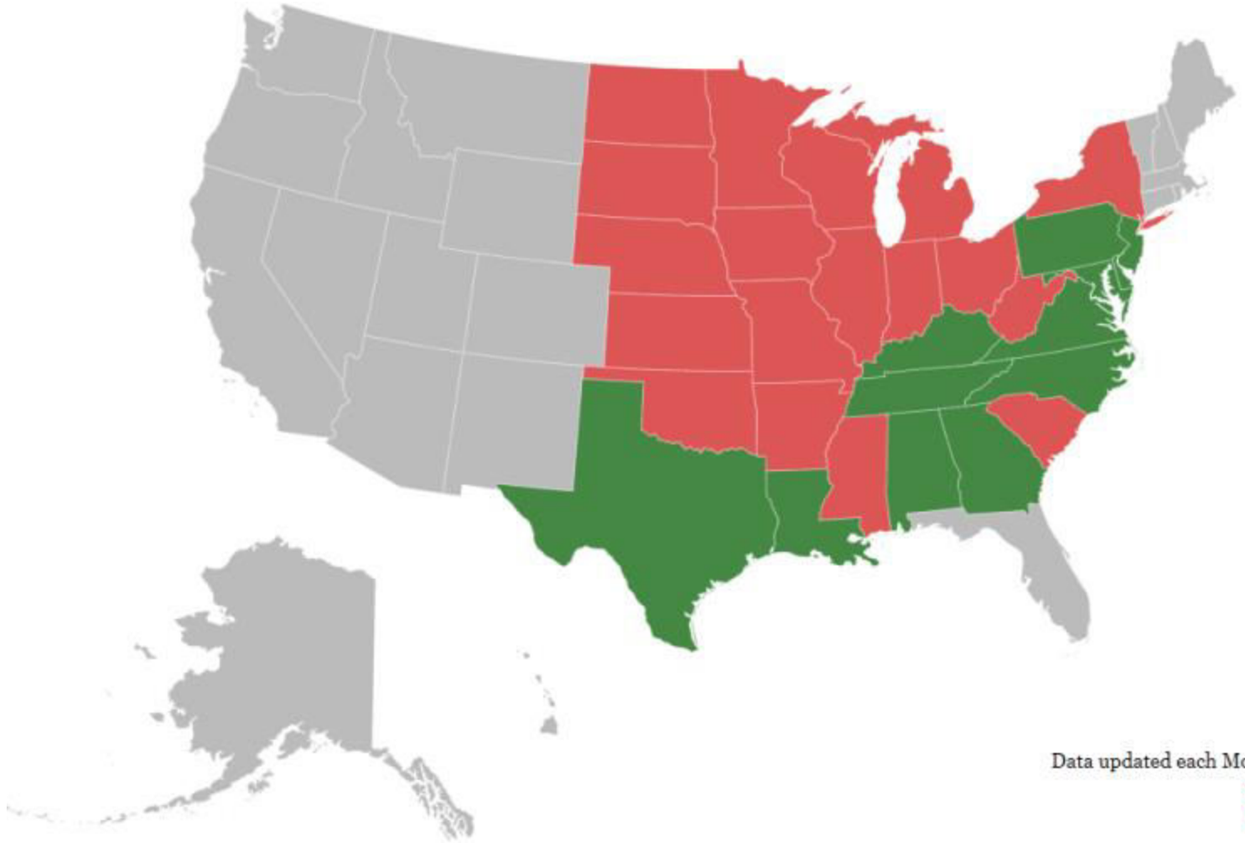
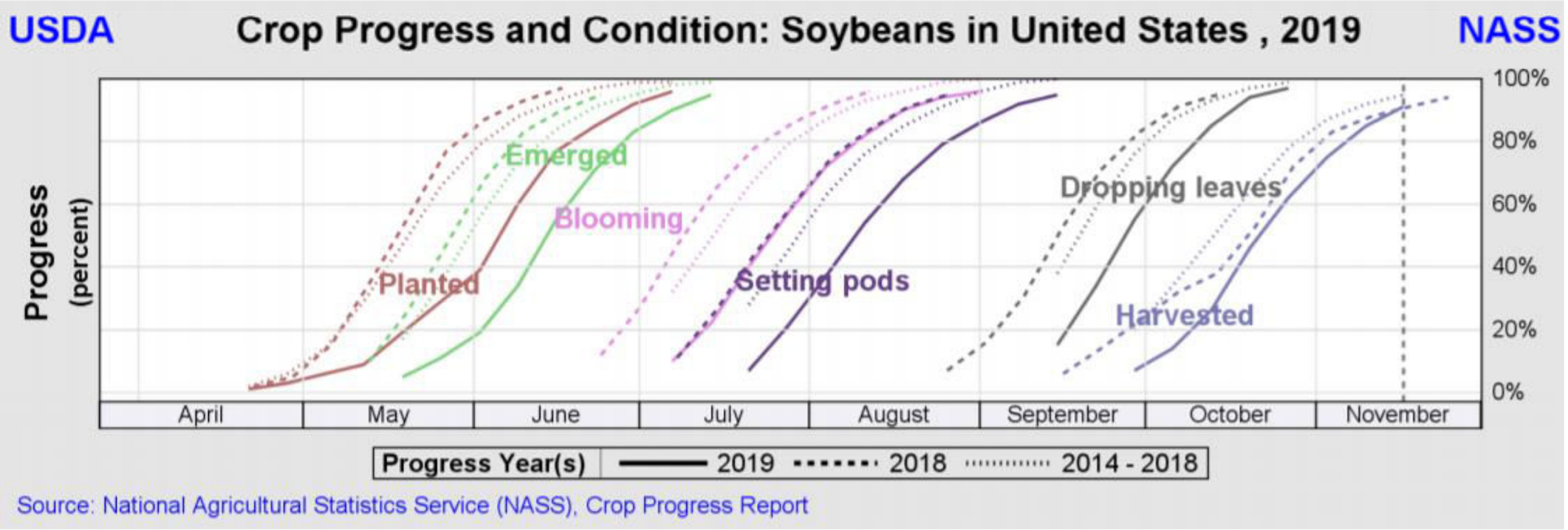
2019 U.S. Soybean Harvest Progress



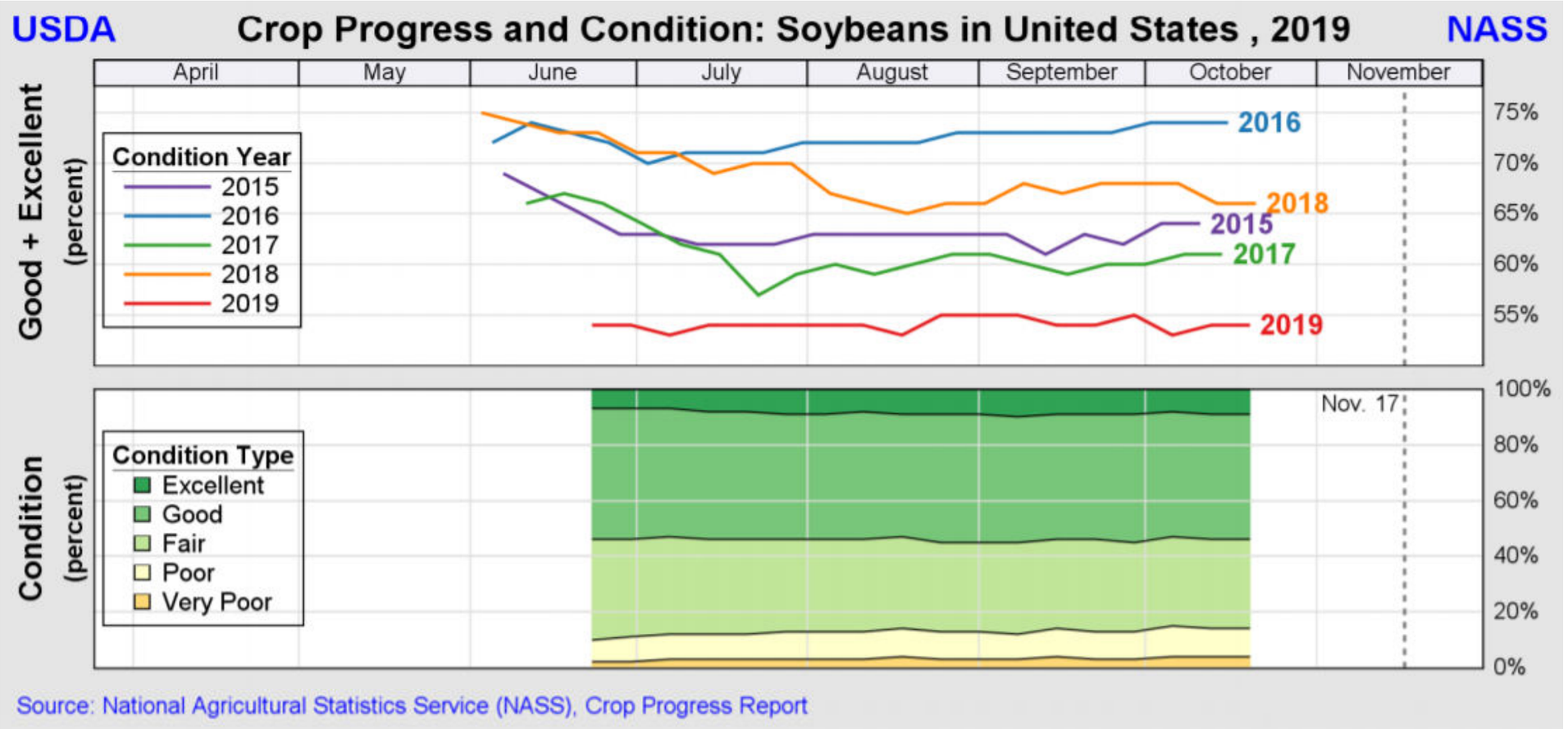
NATIONWIDE
This Year: 91%
Last Year: 94%

IOWA
This year: 95%
Last year: 97%

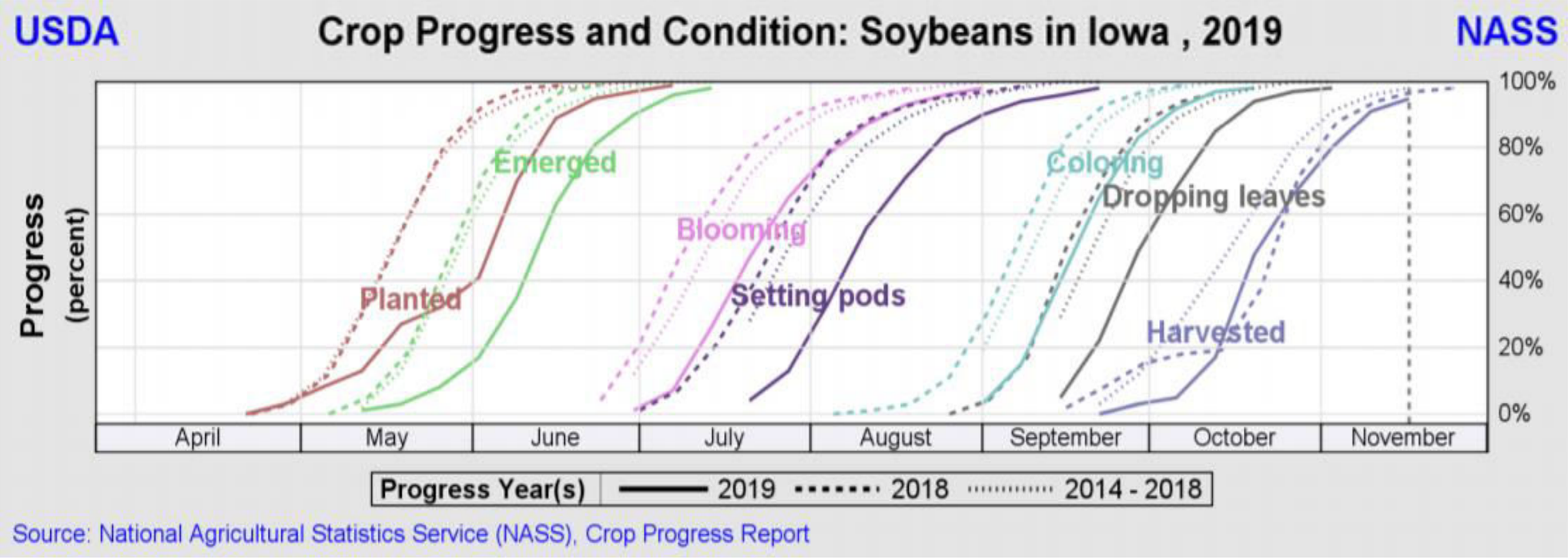
Crop Progress Nationwide (Last 5 Years)



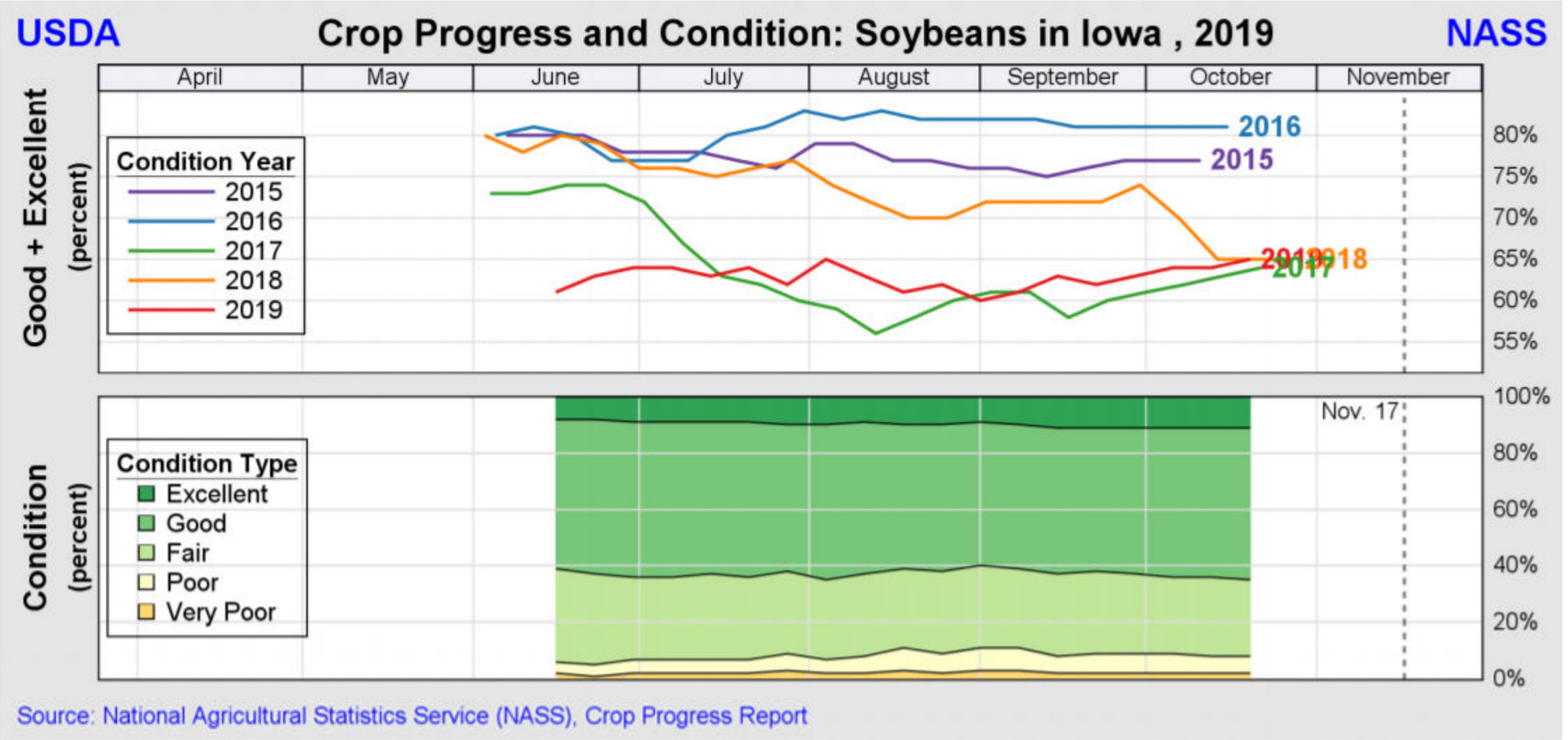
Crop Conditions Nationwide (Last 5 Years)



Crop Progress In My State (Last 5 Years)



Crop Conditions In My State (Last 5 Years)



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2019 Growing Season Challenges

Photo Credit: National Geographic

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June 2019

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July 2019

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Harvest Challenges

October 2018

April 2019

My 2019 Harvest Outcomes

- ❑ Yield
- ❑ Quality
- ❑ Variations in performance for different varieties
- ❑ Crop Rotation

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2020 Planting Intentions

Photo Credit: John Deere

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My 2020 Planting Intentions

- ❑ Which crops grow best in which fields
- ❑ Which crops are in the highest demand by potential buyers
- ❑ Which crops are best adapted to local weather
- ❑ Rotation of crops to match my equipment and labor availability

Nationwide Planting Intentions for 2020

- The 2020 planting intentions survey by *Farm Futures Magazine* found farmers intend to plant 83.6 million acres (approx. 33.4 million hectares) of soybeans in 2020
  - Somewhat lower than in 2019 (89 million acres; approx. 36 million hectares)
- Affected by fallout from trade and weather issues

U.S. soybean farmers have made a

LONG-TERM COMMITMENT


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SOY EXPORT SUSTAINABILITY LLC
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SSAP
THANK YOU!
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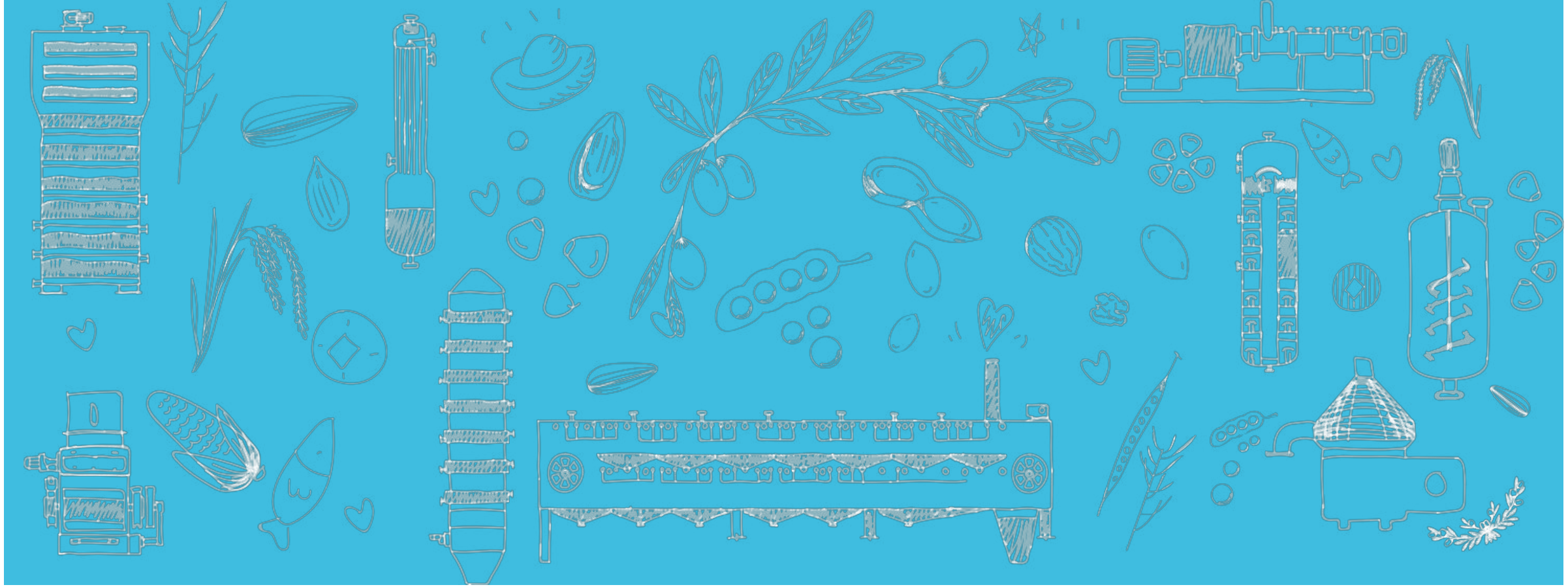

Energy efficiency improvement and cost saving for oilseeds processing

Iven Li

M.A. Sc. Lipid and vegetable protein, Jiangnan University.

R&D of FAMSUN Oils&Fats

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Collaborate · Expand · Strengthen

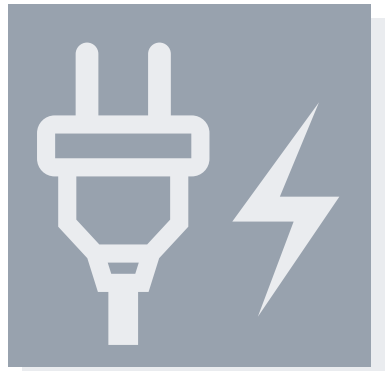
FAMSUN

Integrated Solution Provider

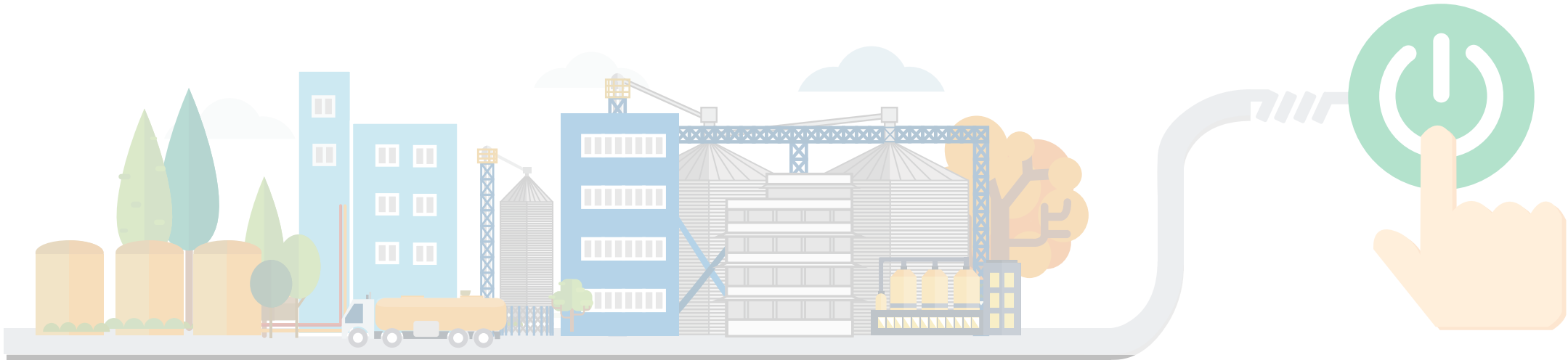
Steam

Solvent

Water



Electricity



Stem Consumption Distribution (Solvent Extraction)

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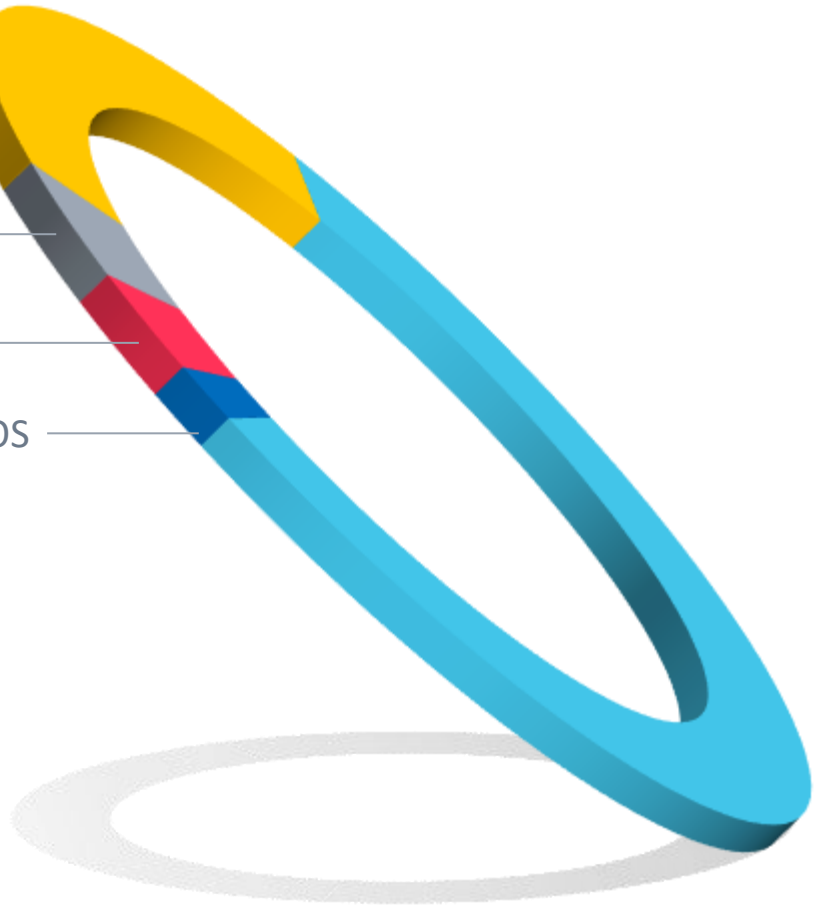
28.5%
Distillation System

5% Effluent boiling

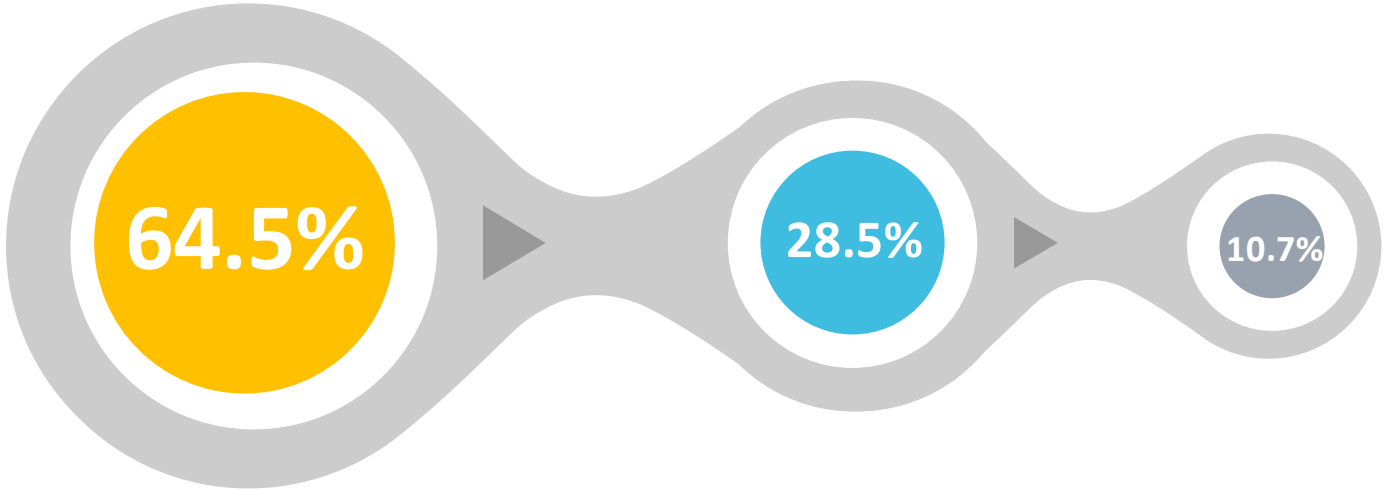
3.7% DC system

2% MOS



60.8%
DT system
Desolventizing

Steam Consumption



The DT system, that is, the remaining solid parts after extracting (spent/ wet meal), consumed almost 65% of the steam in the whole workshop. The main determinant is the amount of liquid solvent contained in the spent meal. Therefore, reducing the solvent carried by the spent meal is the key factor to reduce the steam consumption.

EX-1, Force-draining design extractor

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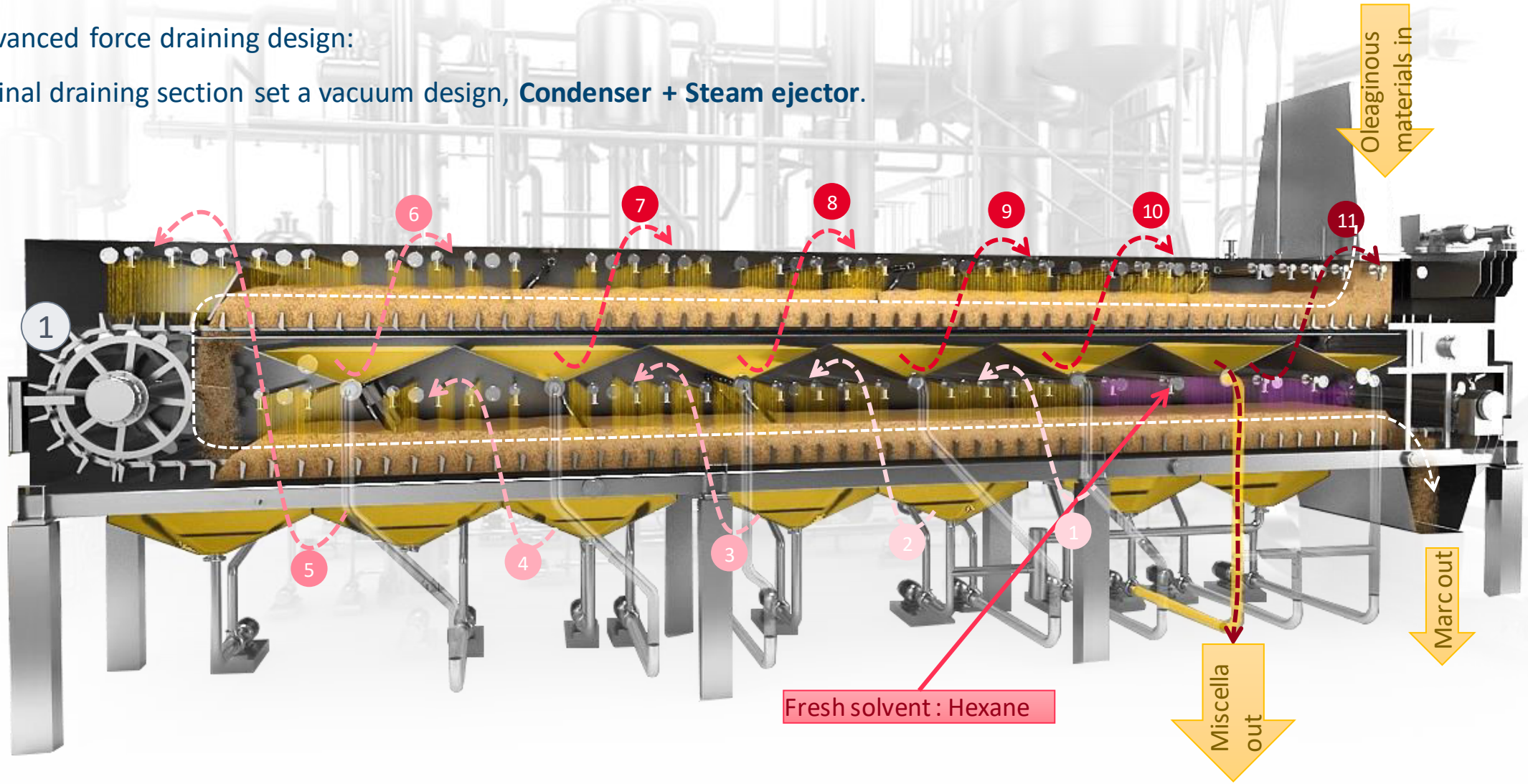
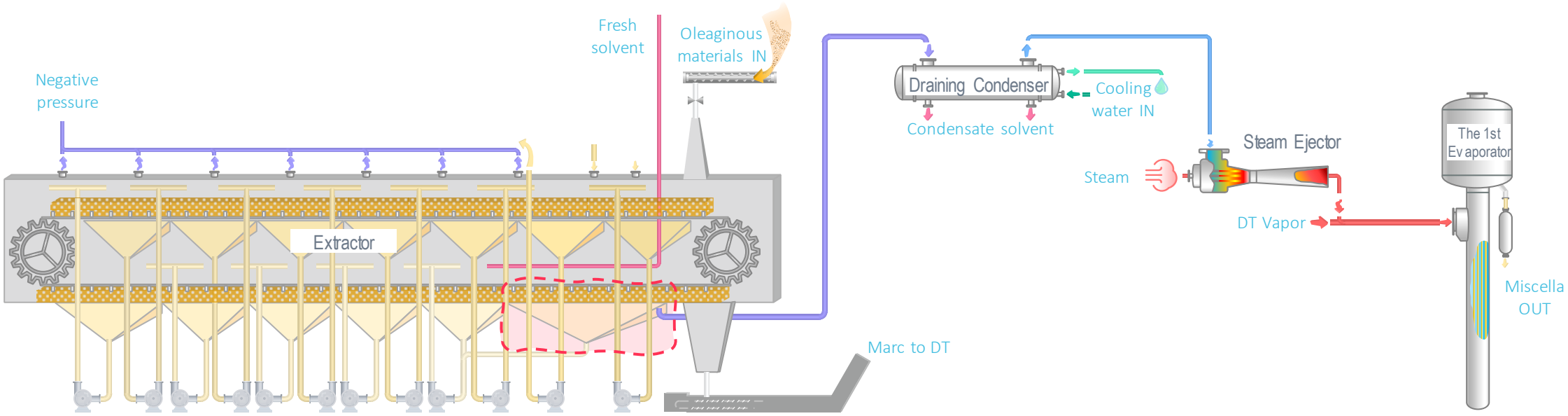
The advanced force draining design:

in the final draining section set a vacuum design, **Condenser + Steam ejector**.



EX-1, Force-draining design extractor



EX-1, Force-draining design extractor

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↓ **20%**

carried solvent

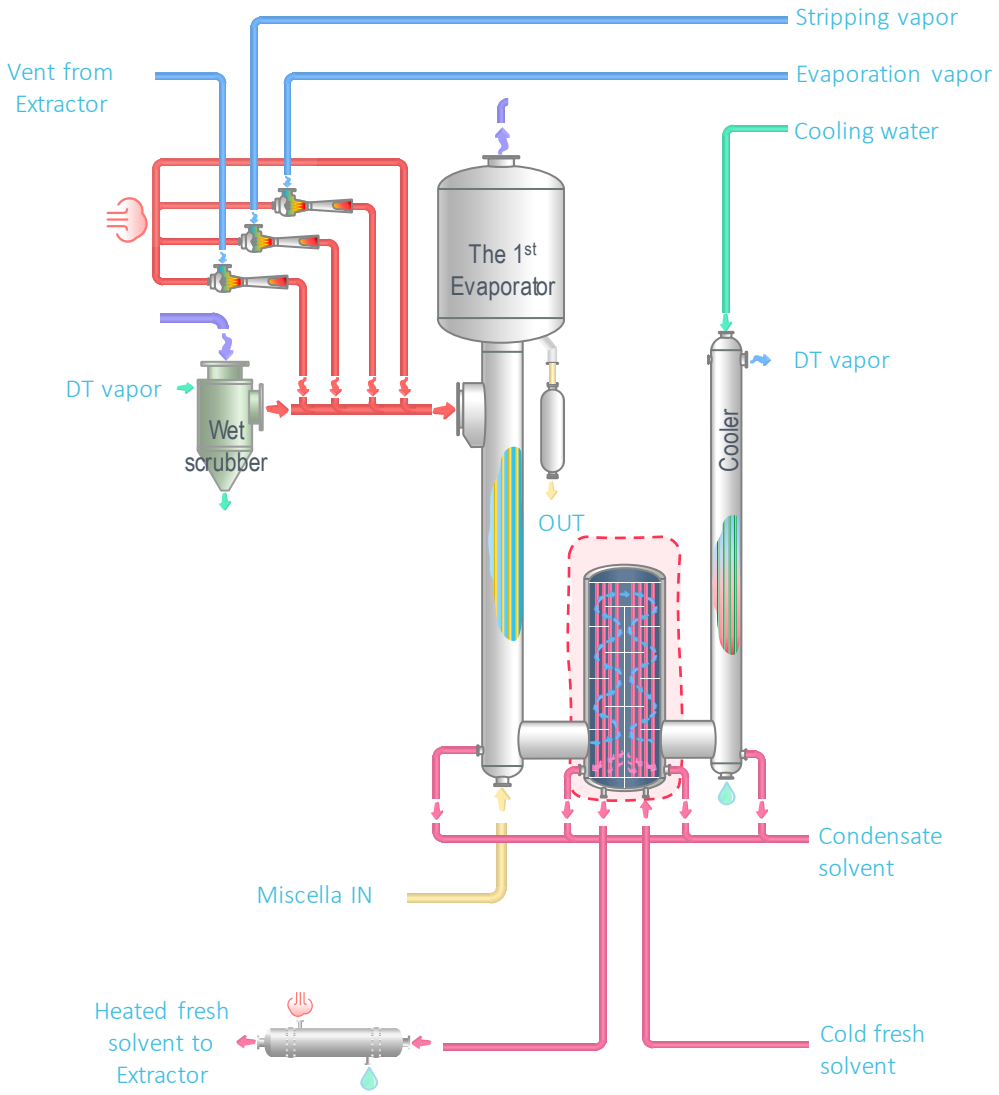
Due to the reduced amount of solvent (from 30% to 25% ,approximately reduce 20%) that the spent meal is brought into the desolventizer (DT), the amount of heat required for desolventizing will also be reduced by approximately 20%.

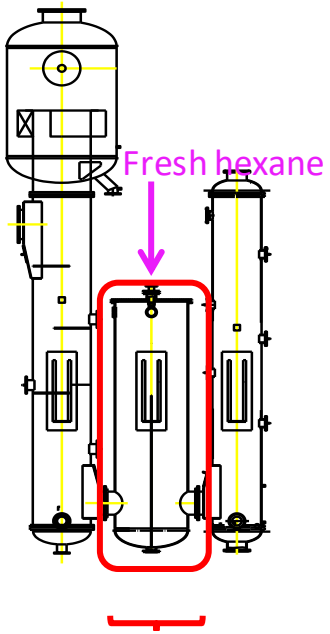
↓ **1/3**

cooling water

The load of DT and evaporation condensate will be significant reduced. Through theoretical calculation, even if a small temp. difference between inlet and outlet of cooling water is adopted, such as 4℃, the circulation volume of cooling water is only 2/3 of the original. Less recirculating cooling water means less power consumption and less supplementary water consumption, and less equipment investment for the entire recirculating water system.

DT-2, DT vapor heat exchanger



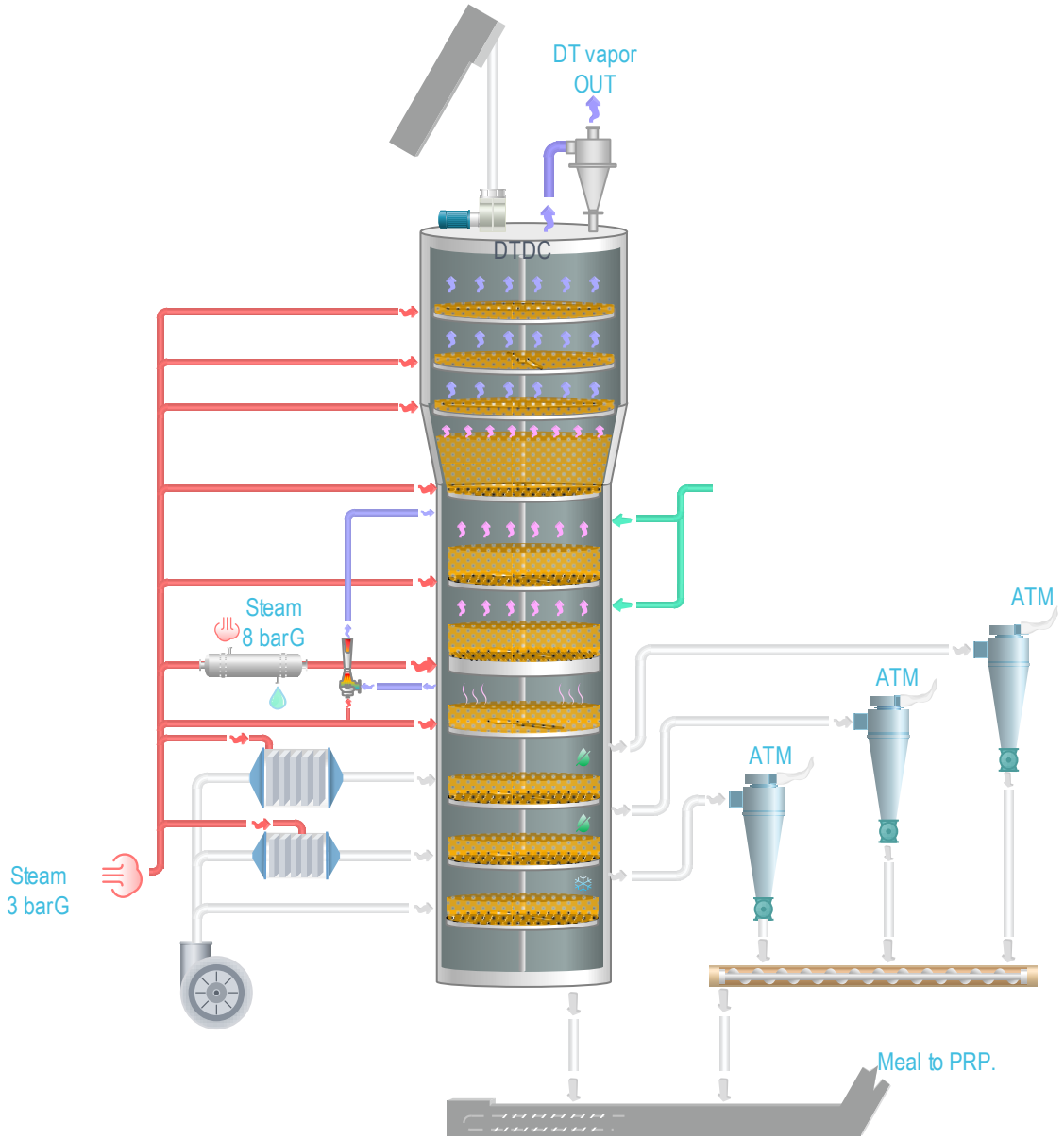


Vapour contactor

Replace the vapor contactor with shell and tube interchanger (2-pass on shell side and 4-pass on tube side) to heat the cold fresh hexane before entering Extractor, which can **save 6~7kg/ton steam**.

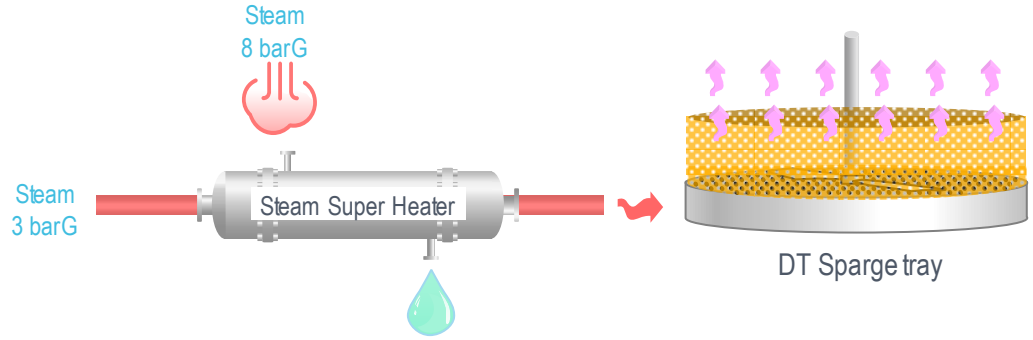
Solvent is heated from 35℃ to 55℃

DT-3, Sparge steam super-heater for DT



Use the super-heating sparge steam will reduce the condensate in meal (use 8~10 barg steam to heat the sparge steam (3 barg)), compare to the normal steam will **save 5%, almost 4kg/ton**.

Super-heating reduce the DC drying required steam, not DT steam.



DT-3, DC Cyclone Vent Control

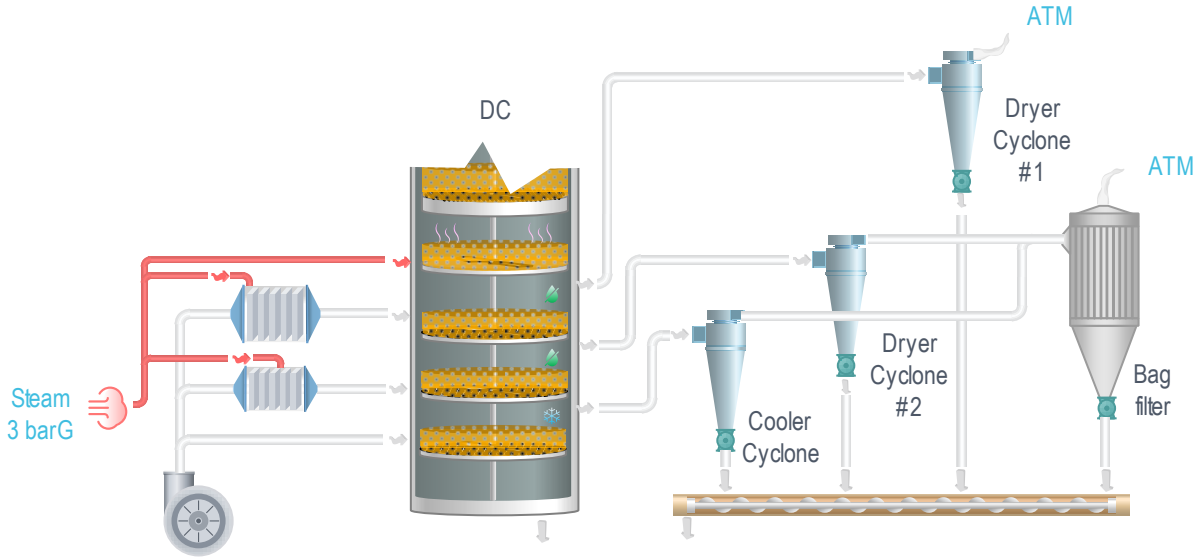
Steam

form Dryer cyclone #1- **Heat recovery**.

Dust

from Dryer cyclone #2 and Cooler cyclone

- **Environmental protection**

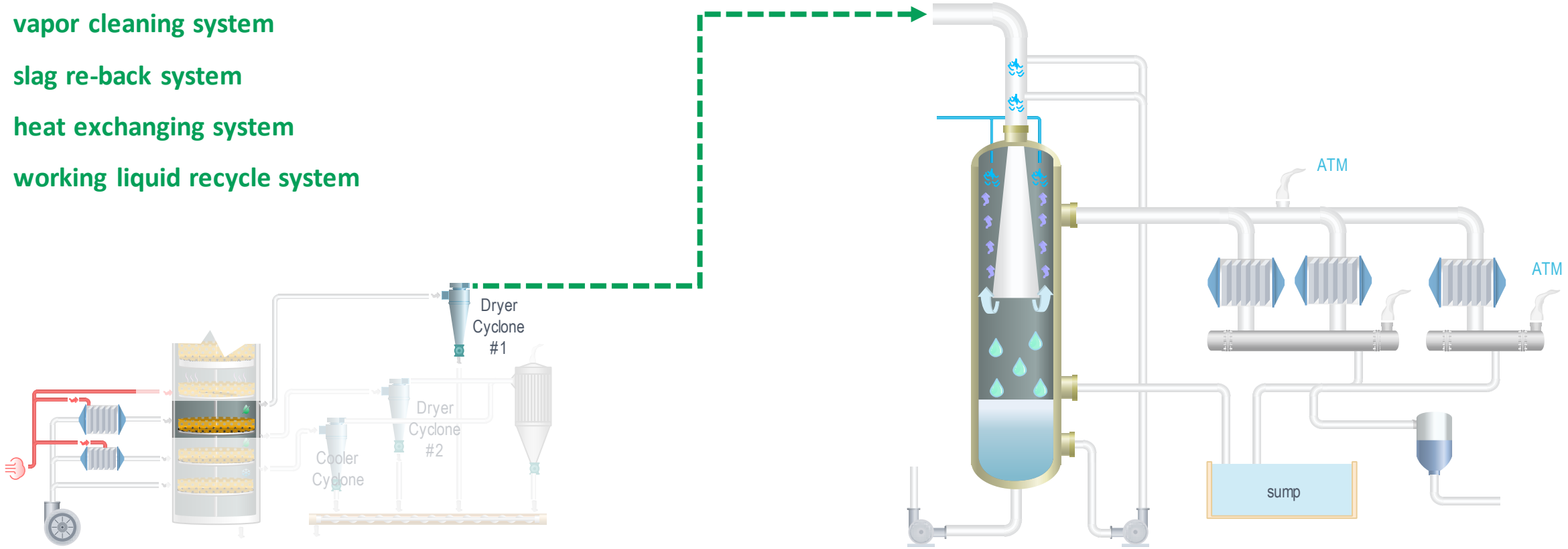


DT-3, DC Cyclone Vent Control

Process: wet vapor from cyclone after cleaning by hot water can be used for heating the air of DC or adding one interchanger to get the hot water as heating source of 1st and 2nd tray of conditioner in preparation.

DC waste vapor recovery includes:

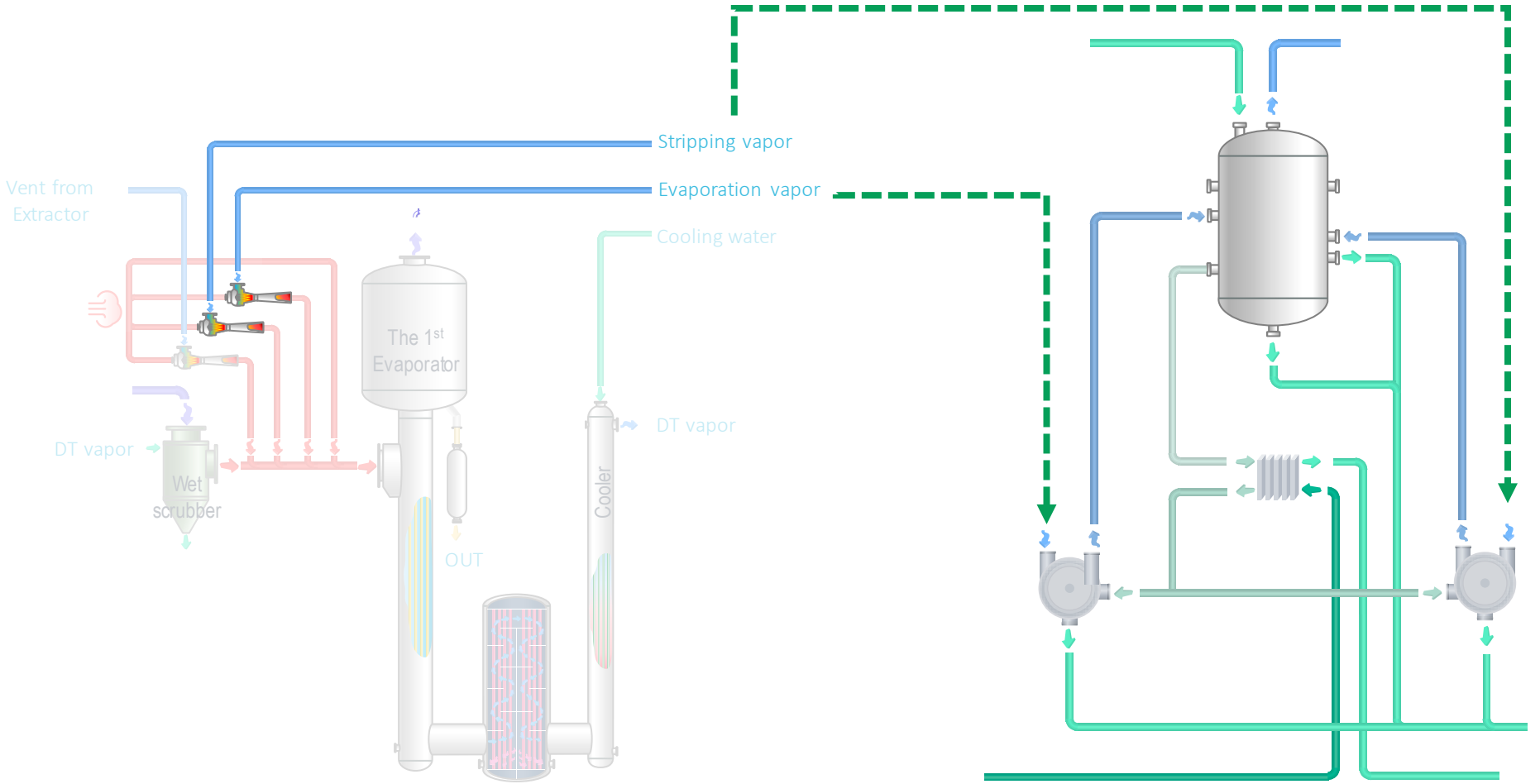
- **vapor cleaning system**
- **slag re-back system**
- **heat exchanging system**
- **working liquid recycle system**

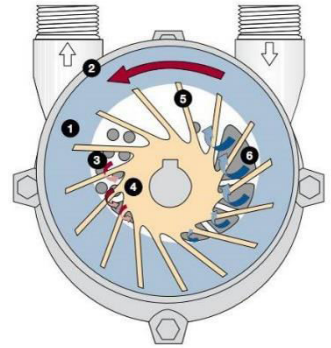


DS-4, Vacuum system-water-ring pump

Adopts water-ring pump to replace the traditional steam ejector can **reduce 7 kg/ton steam**.

Set 2 pumps or 1 pump, bypass piping, adjust separately, or 1 for standby.



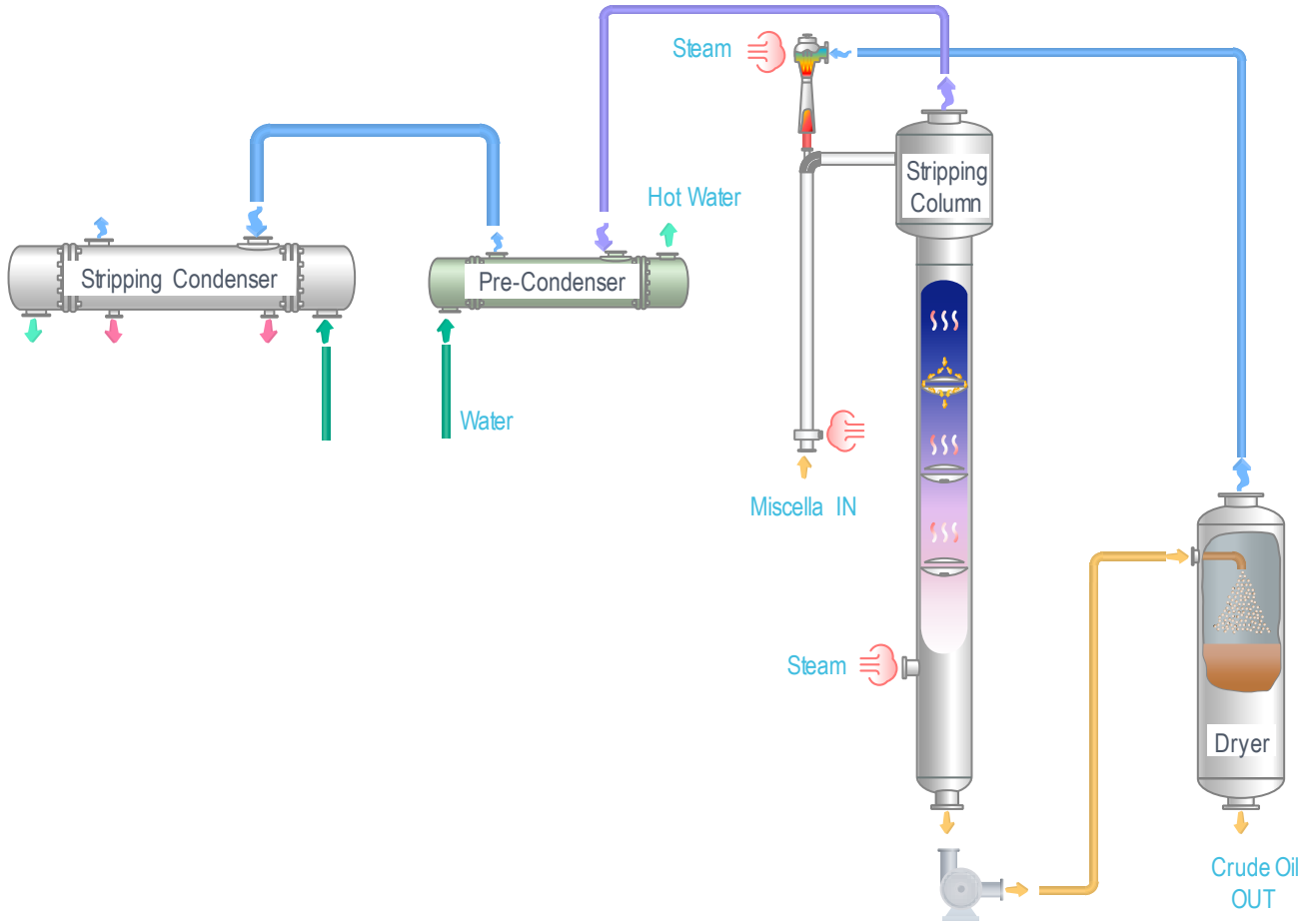


DS-5, Stripping pre-condenser

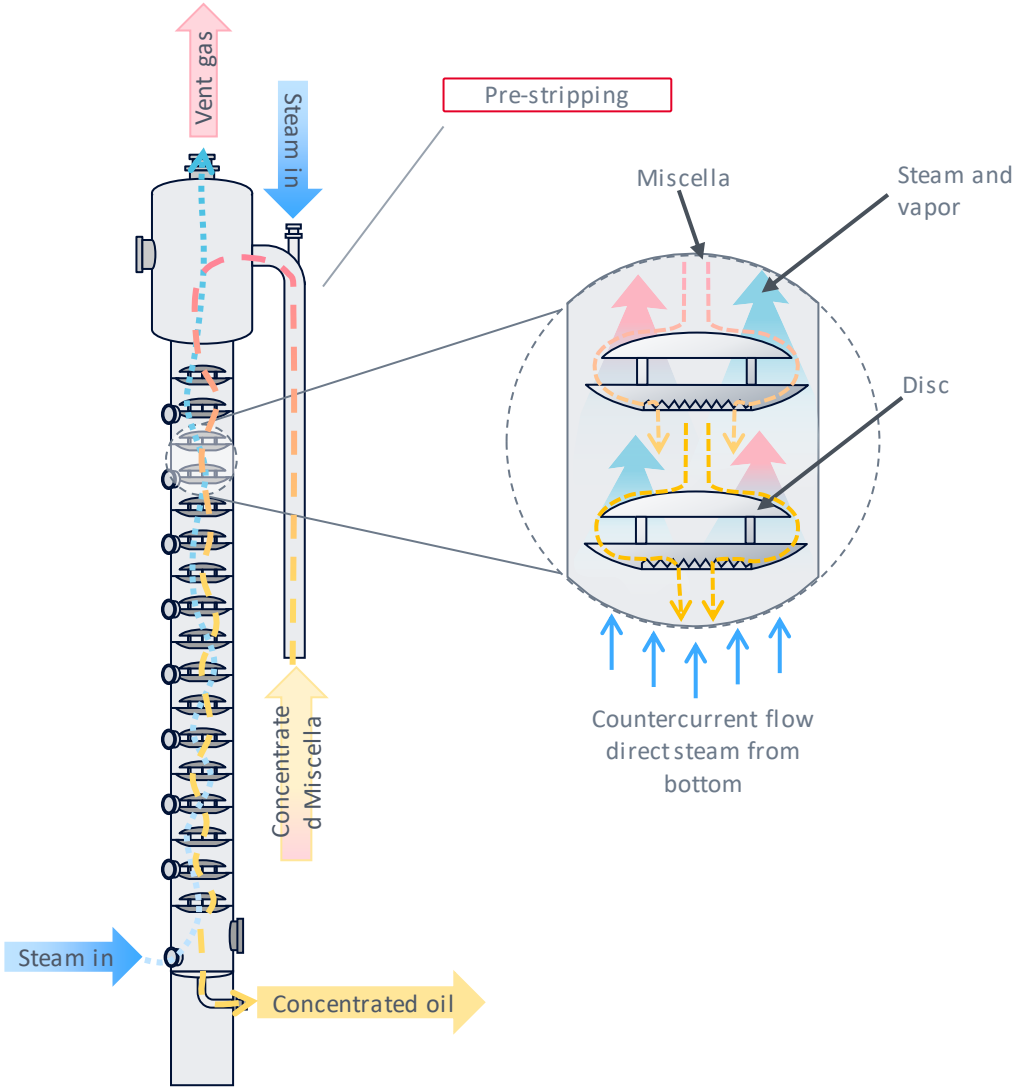
Pre-condenser set before the stripping condenser, can be placed on the top of condenser or alone.

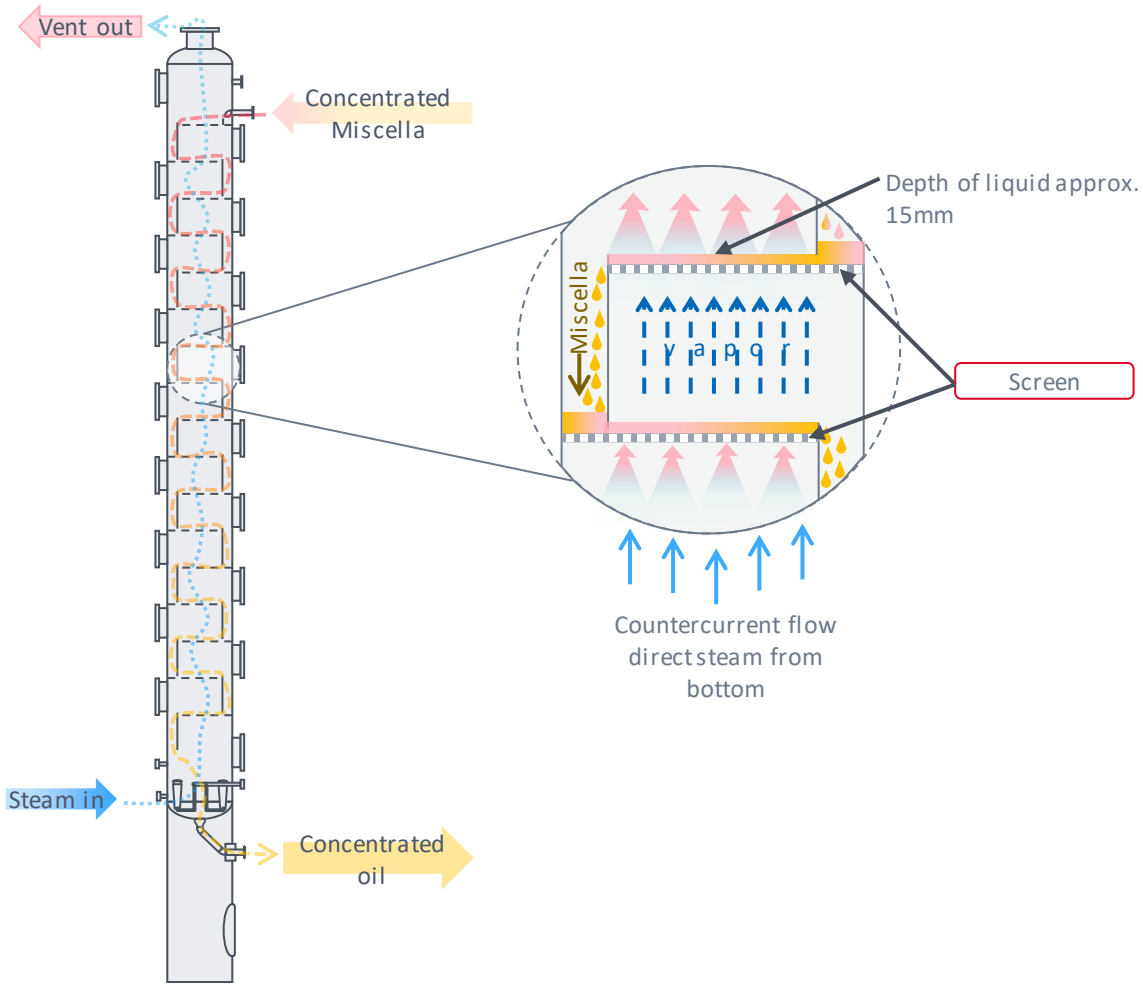
Hot water can be used for heating the air of DC or conditioner in preparation.

By calculation, **approx. 5~6kg steam can be saved.**



DS-6, Pre-stripping and screen type stripper





DS-6, Pre-stripping and screen type stripper

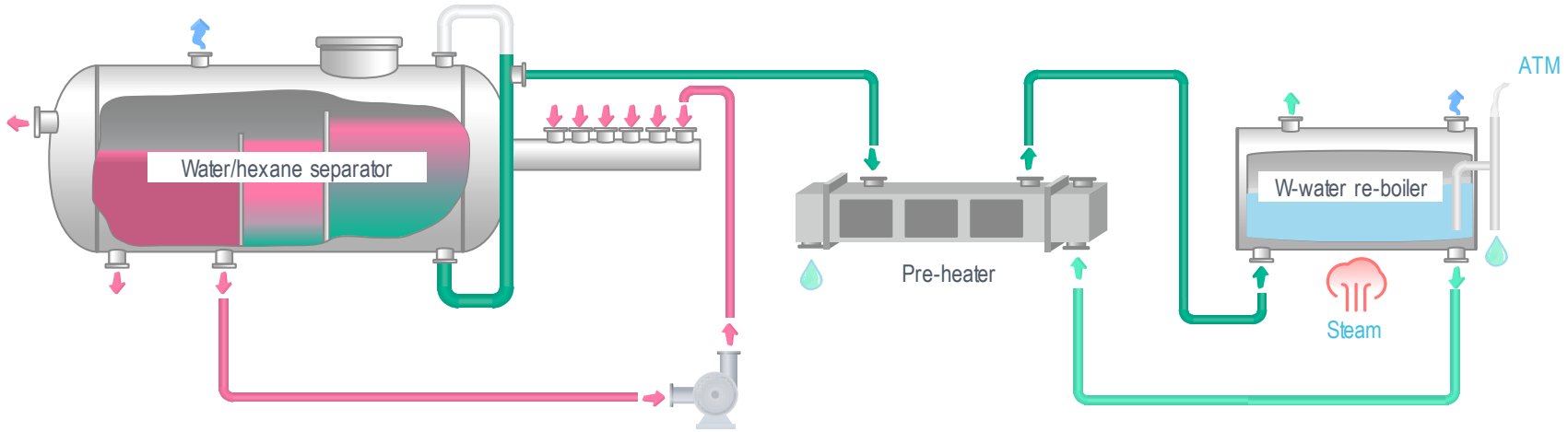
Advantage of Pre-stripping

- **Reduce hexane saturated partial pressure, result in de-solvent easier in stripper.**
- **Premixing the steam and miscella before stripping.**
- **Reuse the flash steam from vacuum.**

Advantage of screen type stripper

- **Reduces the potential for fouling.**
- **Easier to clean when fouling does occur.**
- **Sparge steam rate reduced from 1.75 to about 1.2 kg steam per kg of hexane, almost 30%, 4kg/ton.**

DS-7, Waste-water pre-heater



Wastewater heat exchange

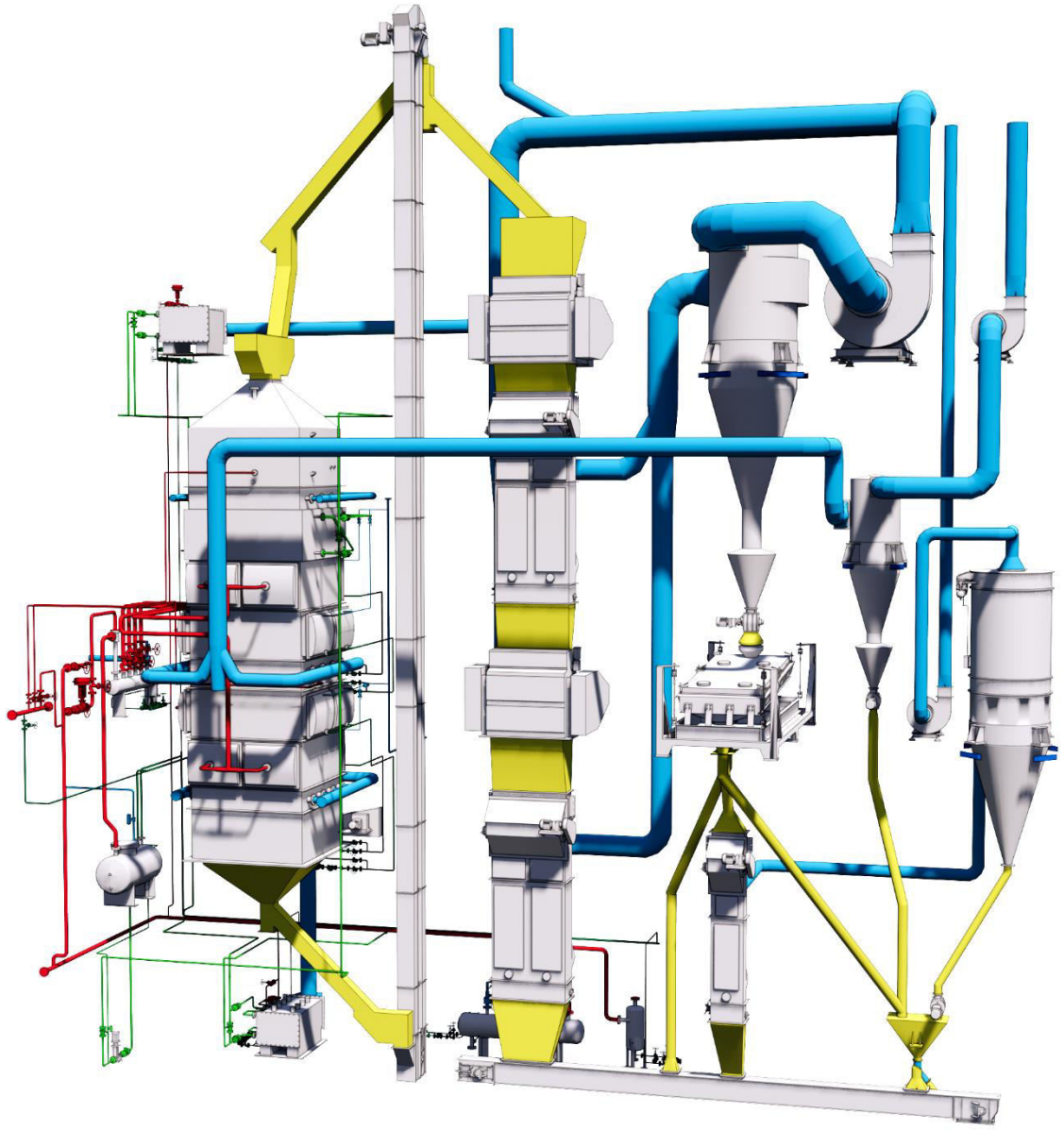
The temperature of the wastewater in reboiler is about 90~95℃, and inlet wastewater is about 50℃, can be exchanged through a horizontal tube heat exchanger.

In summer, the outlet temperature of wastewater can be reduced to about 65℃, and the inlet wastewater temperature can also be increased by about 10℃ compared with that without heat exchange.

DS-7, Waste-water pre-heater

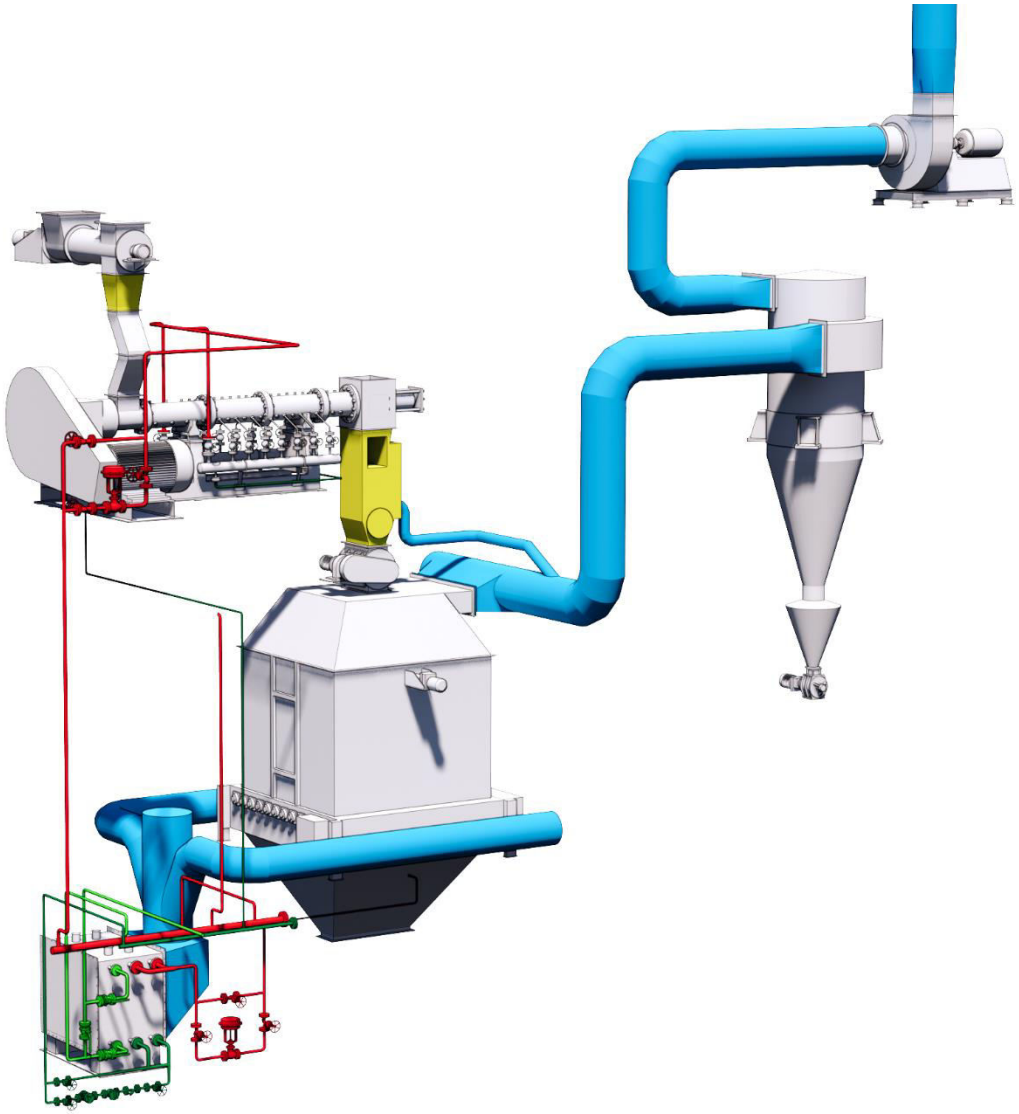
- 2-pass shell and 4-pass tubes for improved performance.
- Flat-sided vessel and full face covers design for easy cleaning.
- Gravity flow without pump.
- Save about 1 kg/ton steam.

P-8, Conditioning tower



- On the top of conditioner, set 1~3 heating trays use hot water to replace the steam.
- Air heater of conditioner use both hot water and steam.
- Dehulling suction air circulation design.
- Air heater of dehulling use both hot water and steam.

P-9, Expanding cooling-dryer



- Air heater of cooling-dryer use both hot water and steam.
- vent air from the fan can be reused.

O-10, Others

- Hot condensate can be used to heat air directly, miscella or hexane.
- Hot condensate can be collected and storage in a flash tank, or by a heat pump to produce flash steam, which can be used to heat the water etc. or to DT.
- Hot oil from degumming can be used for the oil/miscella economizer or wastewater pre-heater.
- Hot pressed oil from expeller can be used for the oil/miscella economizer.
- Hot vent air from cooker can be used for the conditioner.

… …

Solvent Consumption

Collets

Hexane
Solvent

Wastewater

Oil

Hexane

Miscella
(liquid)

Meal

Hexane

Spent meal
(Solid)

Emission to ATM

Evaporation

Condensation

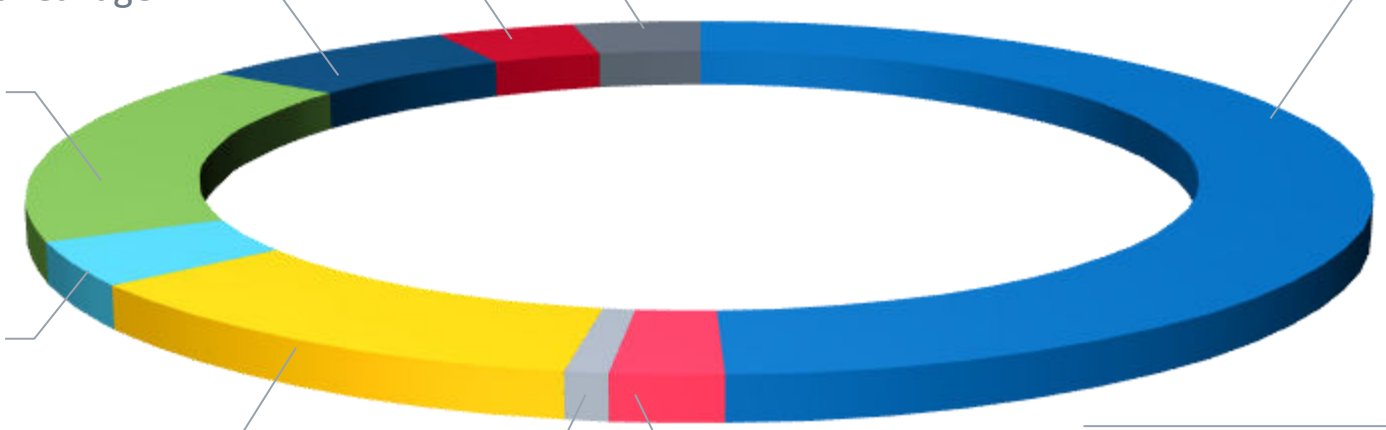
Crude oil

Hexane

Desolventing
Toasting
Drying
Cooling

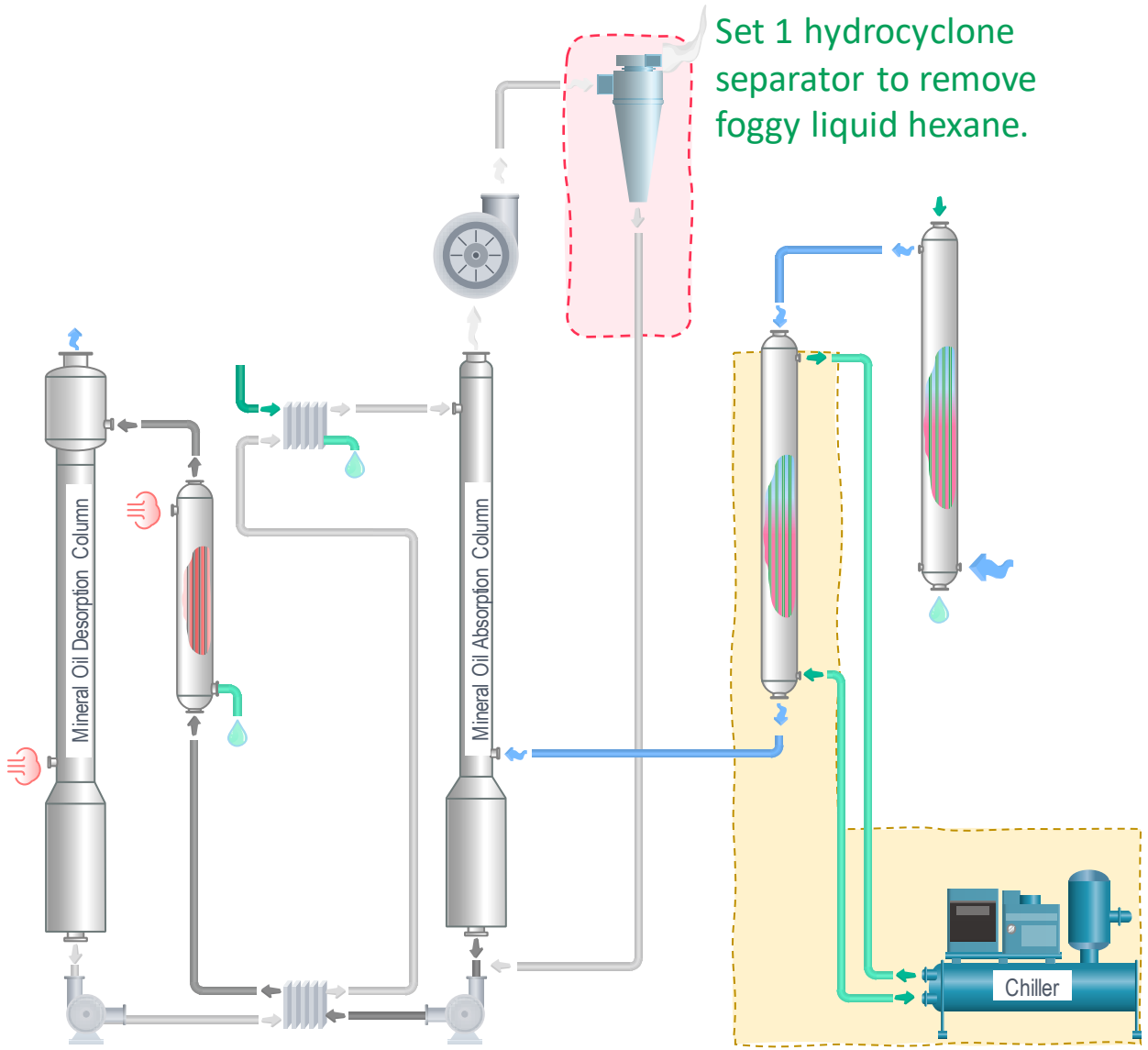
Meal

Solvent Consumption Distribution



Items	PCT	Notes
Hexane take out by the meal	**49.50%**	Based on hexane residual in meal is 320 ppm
Hexane take out by the crude oil	2.20%	Based on hexane residual in oil is 60 ppm
Hexane take out by the W-water	0.90%	Based on hexane residual in water is 100 ppm
Hexane take out by the vent air	11.30%	Based on hexane residual in vent air is 10 g/m^3
Hexane out from hexane storage tank	3.80%	Normal operating of breather valve
Workshop equipment vapor leakage	17.00%	Based on can't smell the hexane
Workshop equipment liquid leakage	7.50%	No obvious solvent leakage point in workshop
Start and stop	4.00%	No frequent start and stop
Shut down period	3.80%	for mantainence
Total	100%	

S-1, Vent air control



Most of solvent consumption is based on meal, vent gas and workshop vapor/liquid leakage. Therefore, in order to reduce the solvent consumption, we should first solve the basic, non-technical problems leakage in the workshop, and then reduce the technical factors such as meal residue and exhaust emission.

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Question ?

Thank You

Contact us:

FAMSUN OILS&FAT ENGINEERING CO., LTD.

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PAKISTAN OILSEEDS SUMMIT 2019

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Canola Market Overview

December 7, 2019

Pakistan Oilseed Summit

Lahore, PK

52 BY 2025

KEEP IT COMING

canolacouncil OF CANADA

Who is the Canola Council of Canada?

Growers

Exporters

Life Science

Processors

canolacouncil OF CANADA

Our Core Funders

ADM

ALBERTA CANOLA PRODUCERS COMMISSION

BASF We create chemistry

BAYER

BUNGE

CANTERRA SEEDS

Cargill

CORTEVA agriscience
Agriculture Division of DowDuPont

DL seeds

G3 Canada Limited FORWARD, WE GROW

LDC. Louis Dreyfus Company

Manitoba Canola Growers

Nutrien Ag Solutions

P&H

Providence GRAIN SOLUTIONS
A Division of Providence Grain Group Inc.

SaskCanola

syngenta

VITERRA

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We are Involved in:

- Market access and competitiveness

- Sustainable supply

- Brand health and development

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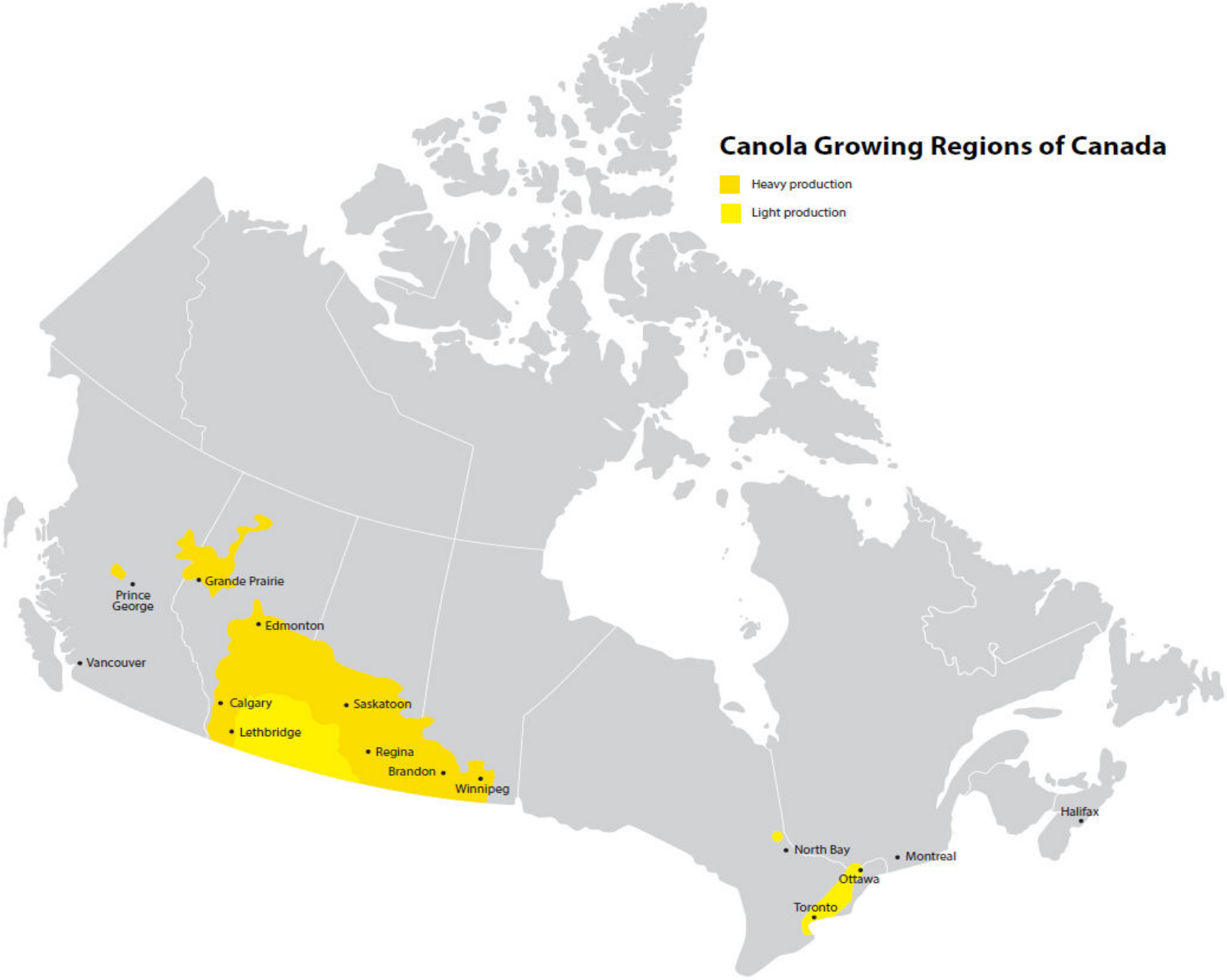

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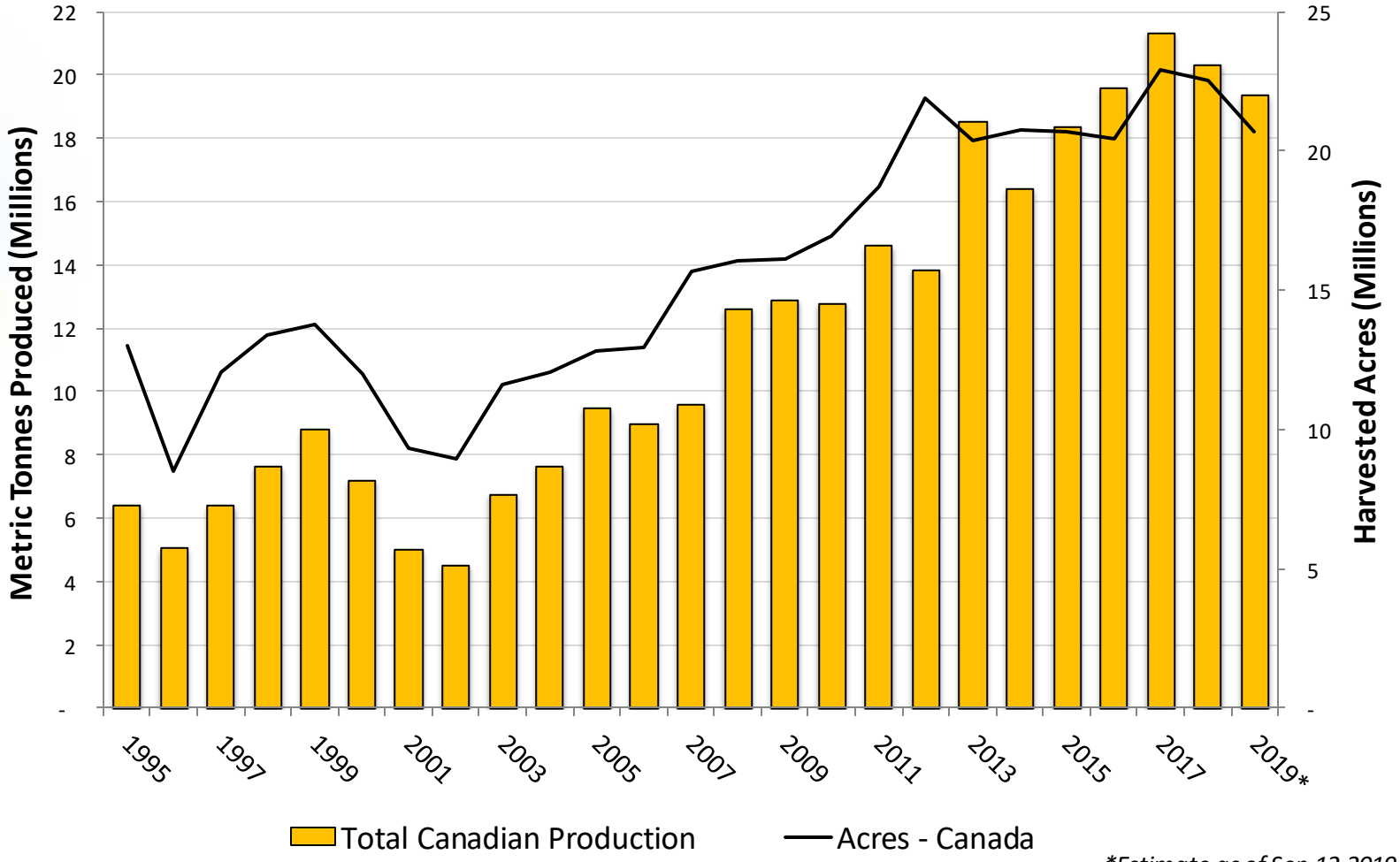
Harvested Acres & Production

Source: Statistics Canada, Table 32-10-0359-01



**Estimate as of Sep 12,2019*

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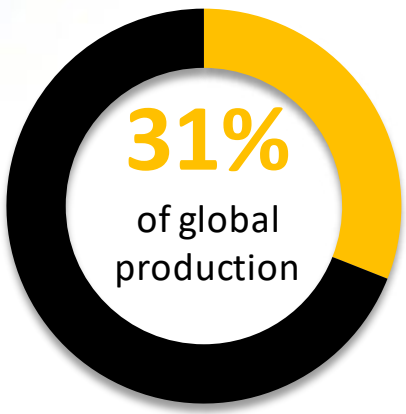
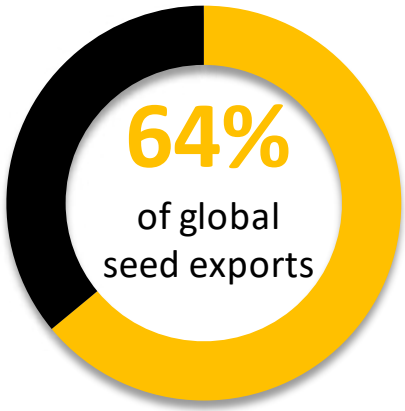
A World Leader, Canada Contributes:





Canadian Grain Commission | Commission canadienne des grains

2019 - Quality of Western Canadian Canola
Preliminary report

Véronique J. Barthet

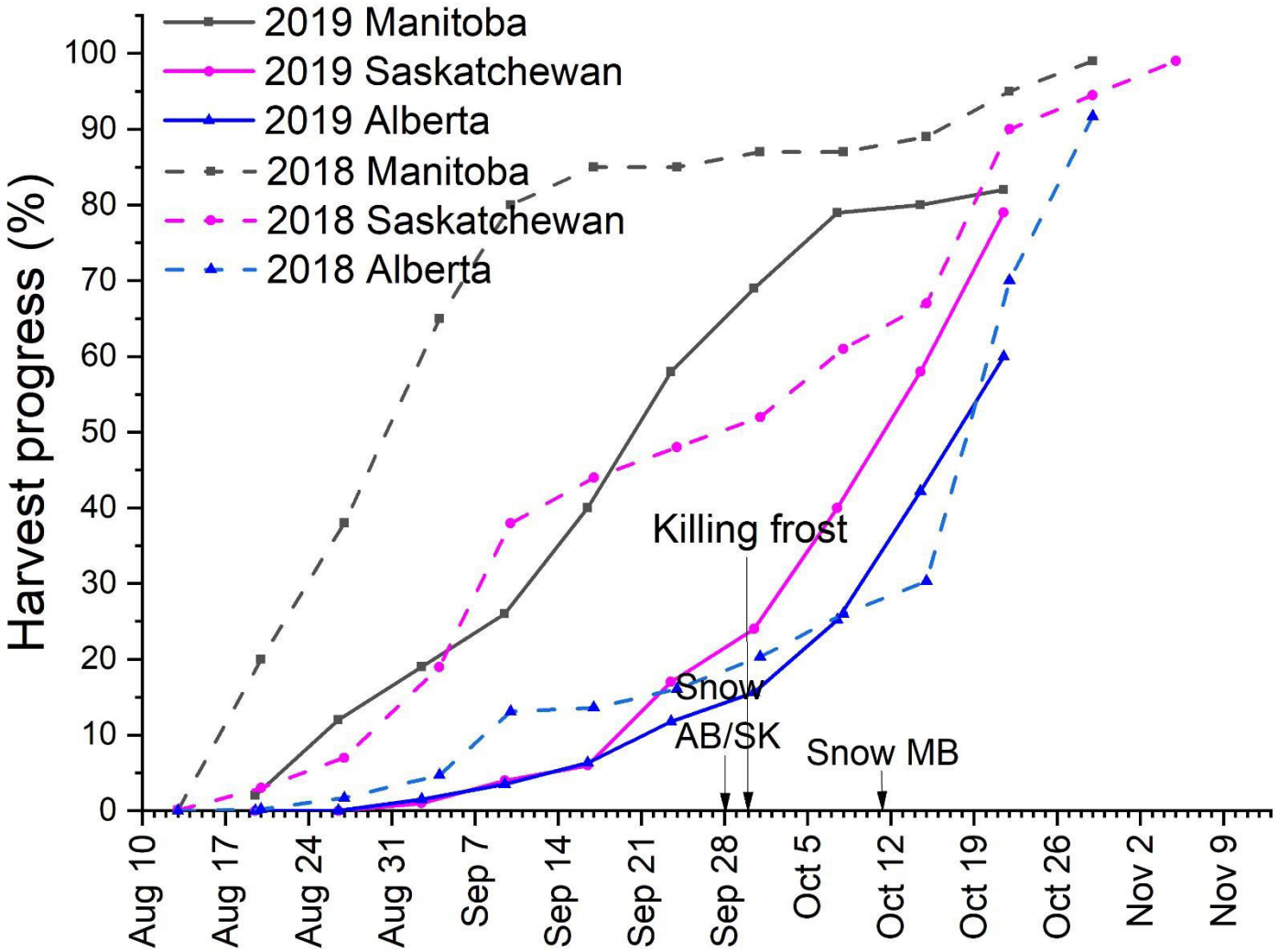
Grain Research Laboratory, Canadian Grain Commission, Canada

Quality meeting – October 30th, 2019
Data up to October 28th, 2019

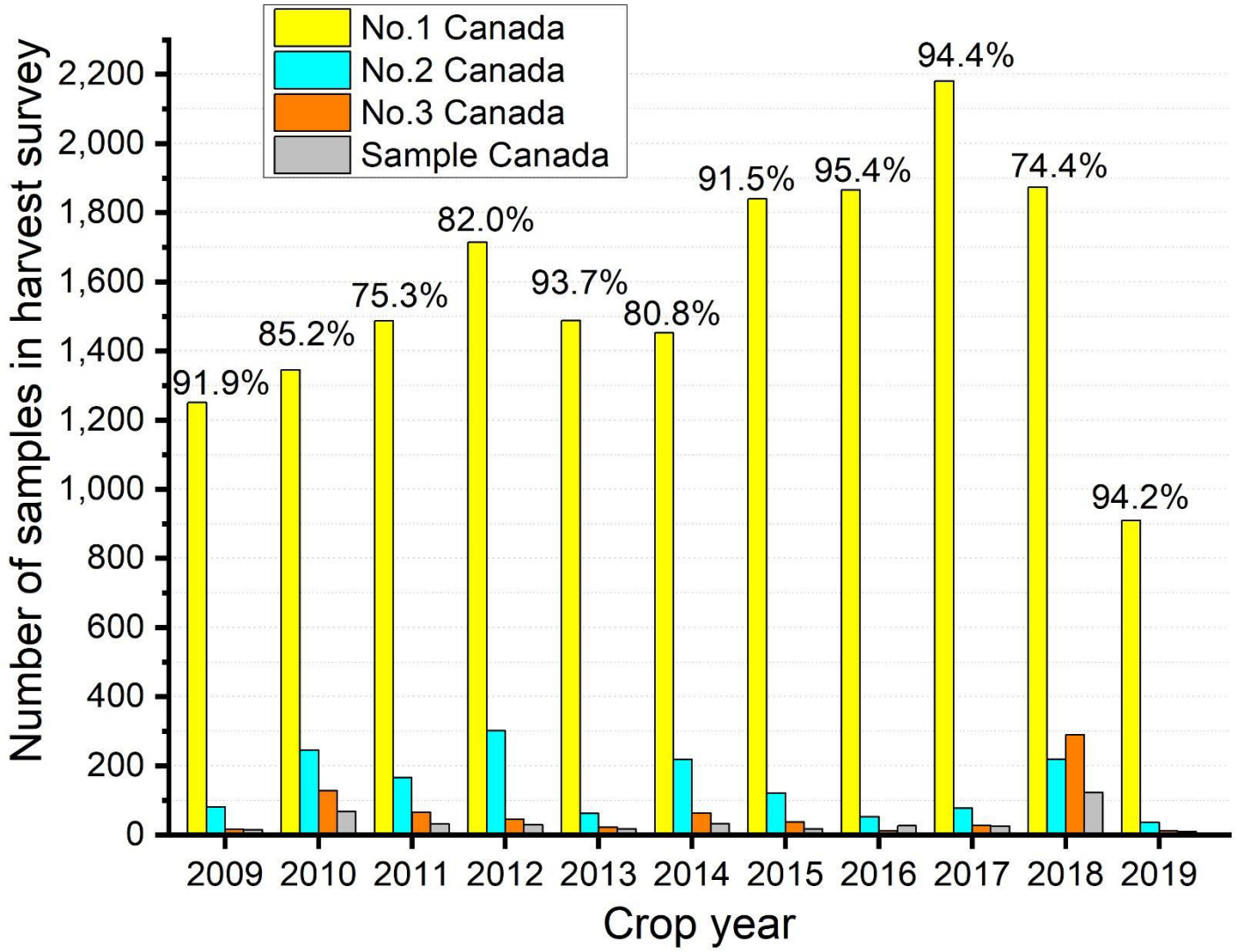
Canada

2018 & 2019 Canola Harvest Progress

October 22nd, 2019



Grade distribution - October 23rd, 2019



Oil content Canola No.1 Canada (%, 8.5% moisture)

2019		2018	
Average	Range	Average	Range
44.9	37.0 – 51.0	44.2	37.9 – 50.1
44.4	5 year average		
44.4	10 year average		

Protein content Canola No. 1 Canada (%, 8.5% m.b.)

2019		2018	
Average	Range	Average	Range
20.2	14.5 – 27.8	20.9	15.1 – 28.9
20.4	5 year average		
20.3	10 year average		

Glucosinolate content - Canola No. 1 Canada (µmol/g seed, 8.5% M.B.)

2019		Average	
Average	Range	2018	2017
9	4 – 17	10	12
12	5 year average		
13	10 year average		

canolacouncil OF CANADA

Canadian Supply and Demand

	18/19	19/20	2025
Area harvested (million ac)	22.536	20.557	22.000
Yield (bu/ac)	**39.8**	**40.0**	**52**
Production	**20,343**	**18,648**	**26,000**
Crush	**9,295**	**9,250**	**14,000**
Exports	**9,141**	**9,200**	**12,000**
Ending stocks	4,094	4,030	
Stock/Use	**22.21**	**21.57**	

52 BY 2025

KEEP IT COMING

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