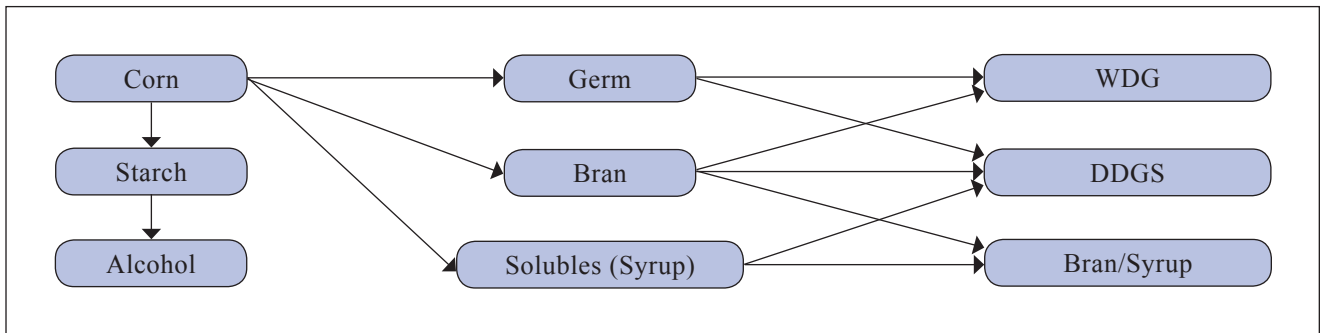


Corn Coproducts

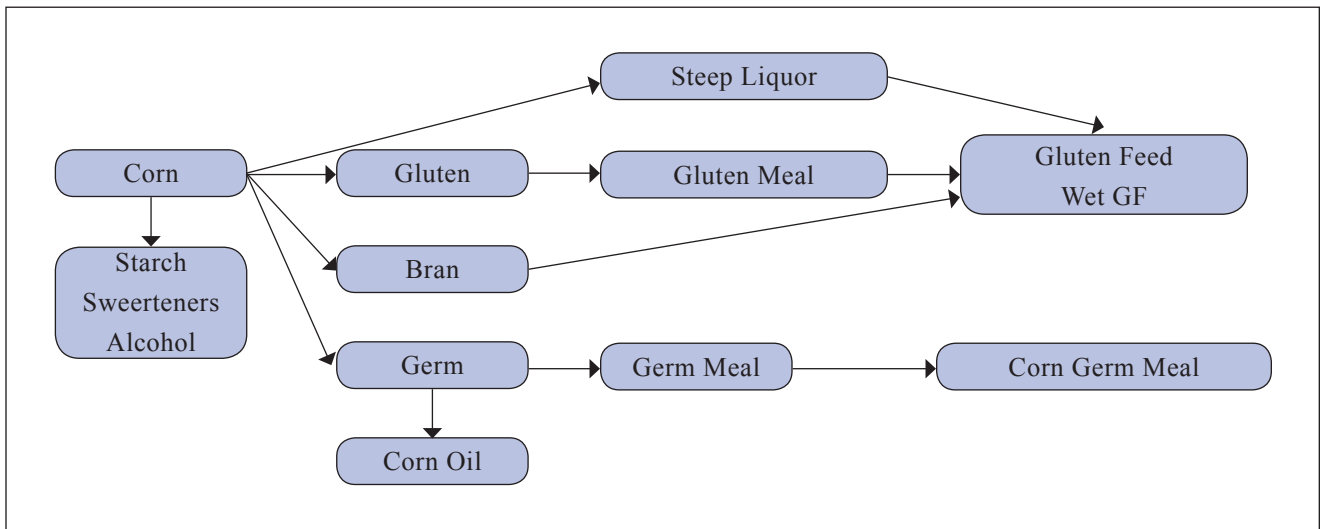
The Midwest is the center of the corn processing industries. The area is home to corn processing plants that produce ethanol, corn oil and corn sweeteners using both the wet and dry milling processes.

Several coproducts are available to the animal feed industry from these processes. Below are flow charts showing the coproducts produced by the different processes.

Dry Milling Process



Wet Milling Process



We cannot rely solely on book values when incorporating coproducts into diets. The table below shows range in nutrient values for some of the unusual wet and dry corn coproducts. *Routine analysis is recommended due to the variation that exists with coproducts.*

Nutrient value of some unusual wet and dry corn products

	Steep liquor	Solubles syrup	Bran/syrup mix	Bran	Germ
Dry matter	50	24-38	54	88	88
Protein, %	35	16-26	14-17	10-11	14-16
Fat, %	2.0-3.0	4.0-10.0	7.5-9.5	4.0-8.0	17.0-20.0
ADF, %	1.5-3.0	5.0-8.0	9.0-10.5	12.0-15.0	6.0-7.0
NDF, %	3.5-5.0	7.0-13.0	25.0-30.0	44.0-52.0	22.0-28.0
Ca, %	0.5-0.9	0.1-0.3	0.1-0.2	0.11	0.10
P, %	1.8-2.1	0.8-1.4	0.6-0.9	0.3-0.6	1.5-1.7
K, %	2.5-3.5	1.8-2.0	1.0-1.9	0.6-1.0	1.7-1.9
Mg, %	0.8-1.0	0.3-0.6	0.2-0.5	0.1-0.3	0.5-0.8
S, %	1.6-2.2	0.6-1.0	0.3-0.4	0.1-0.2	0.1-0.2
Ash, %	1.8-2.6	7.0-9.7	4.5-5.0	2.5-9.0	6.3-6.6
Lignin, %		0.6-1.0	1.1-1.4	0.9-1.1	0.7-2.3
Starch, %		14-17	19-21	25-30	27-30

All values expressed on a dry matter basis.



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