

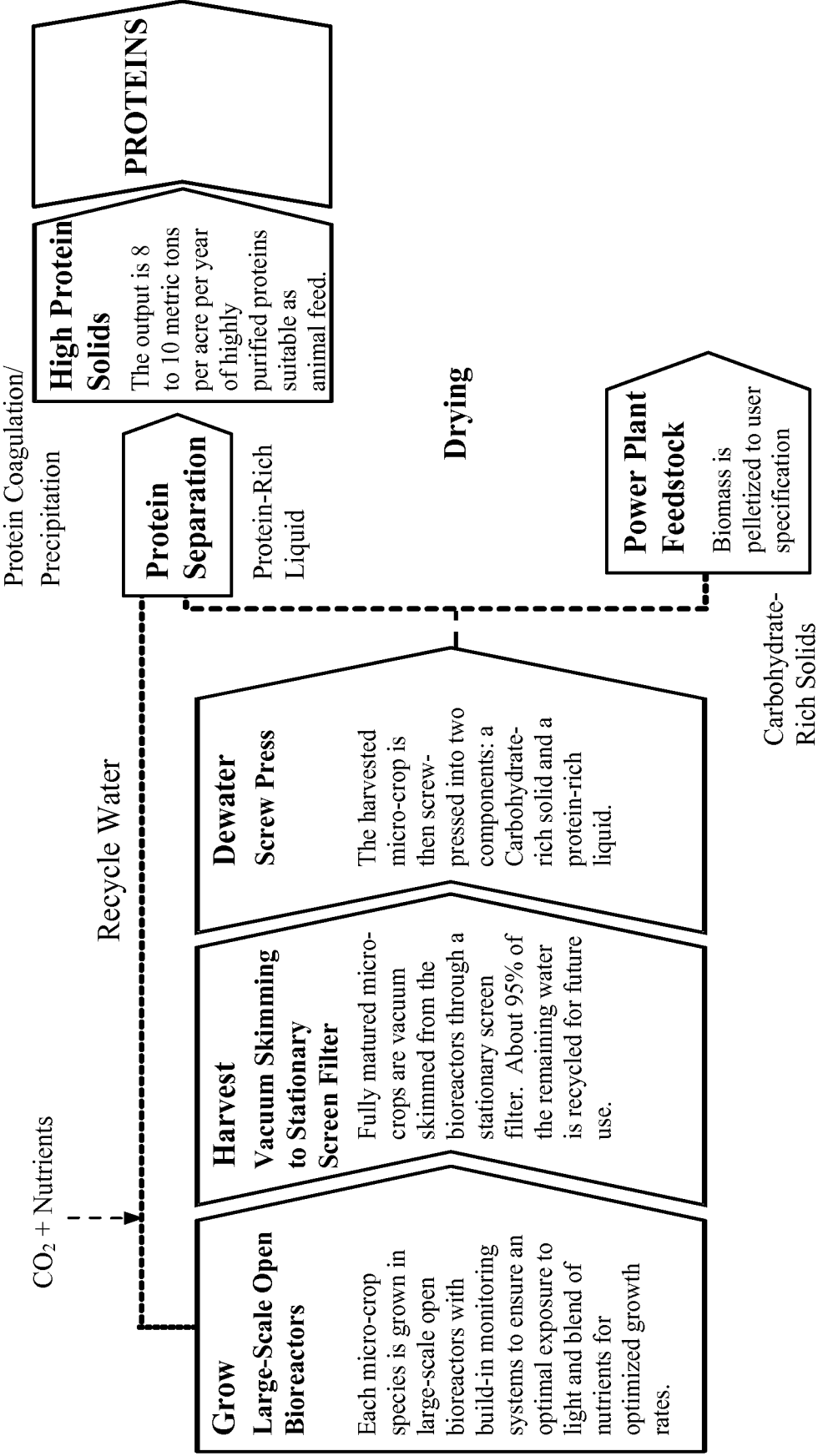


Figure 1A

Figure 1B

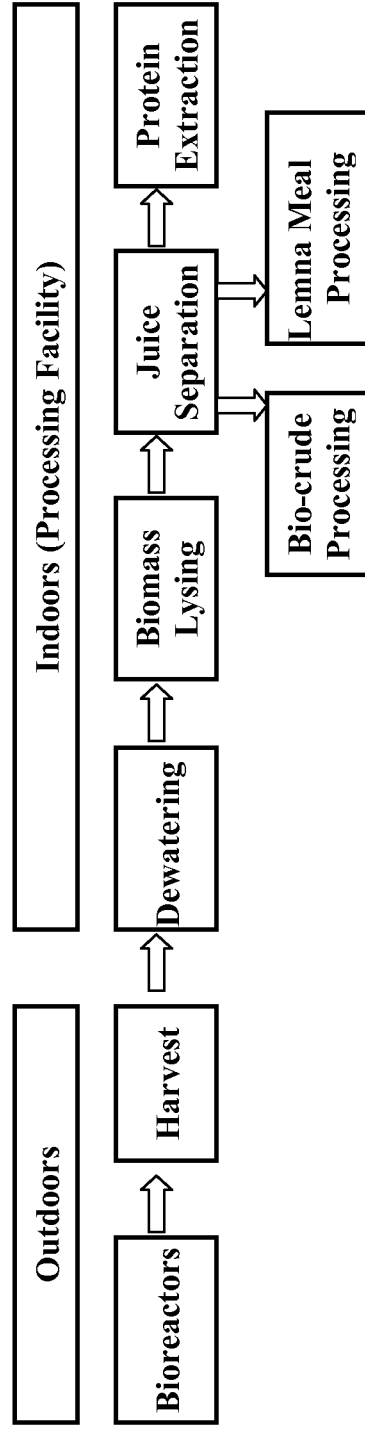


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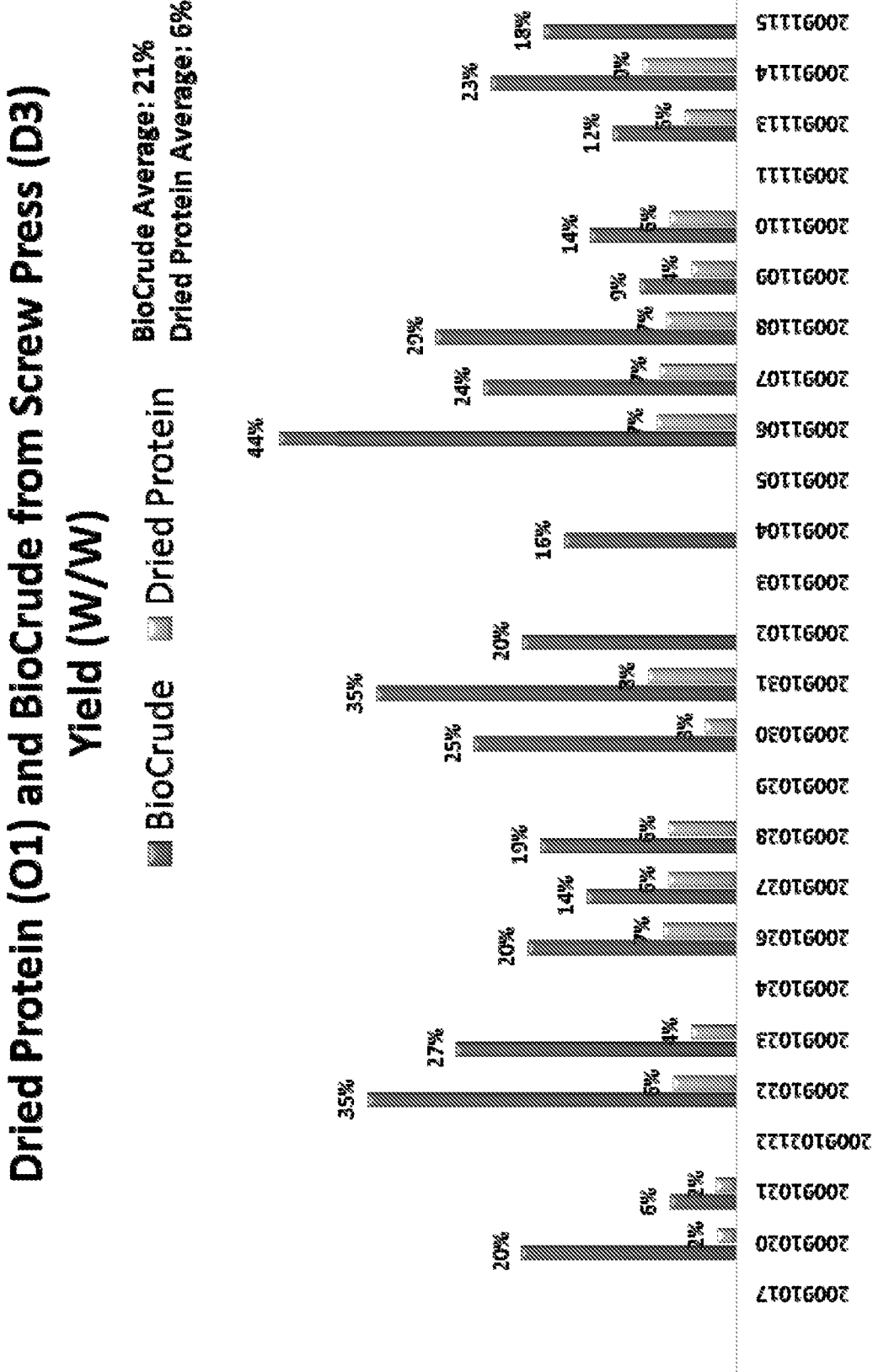
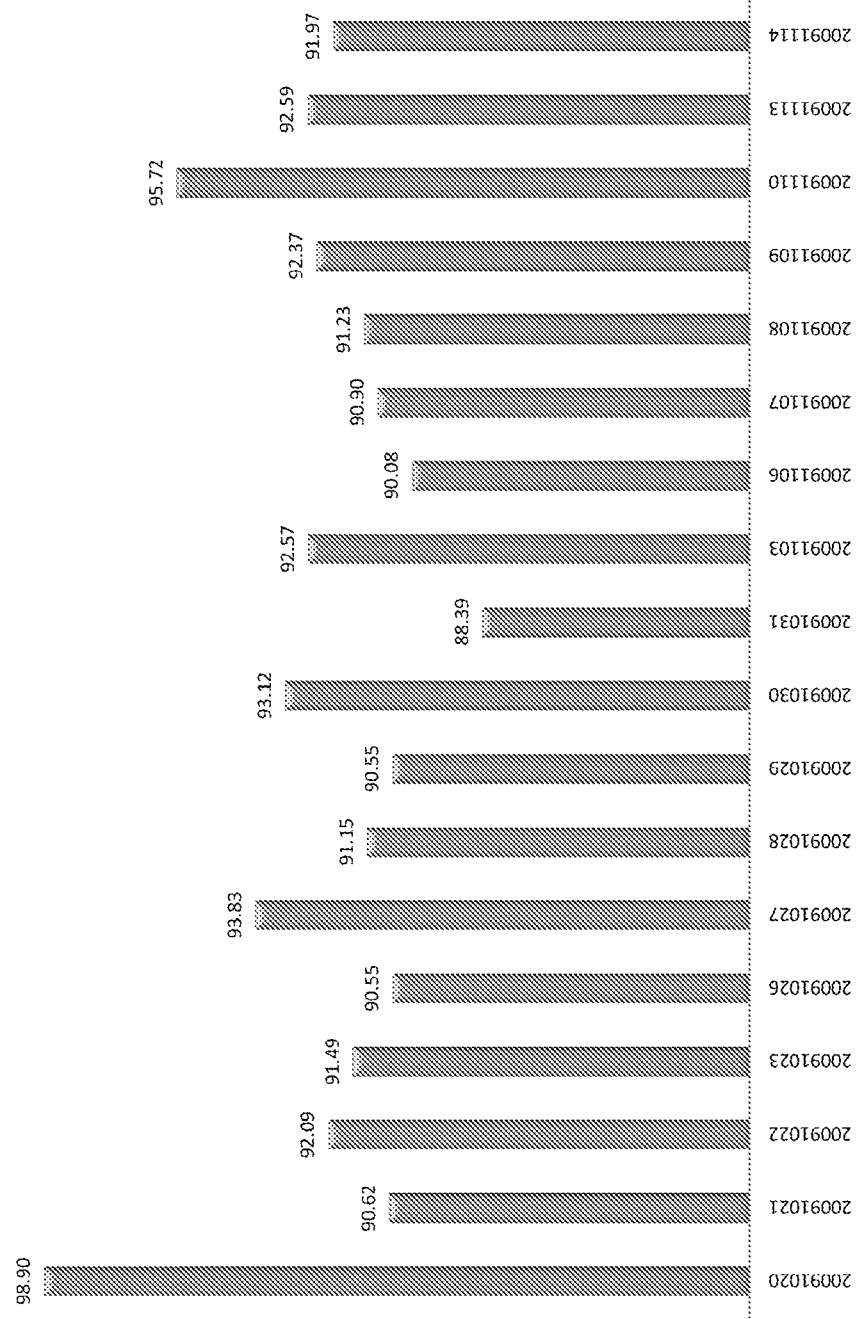


Figure 4

I1 - Wet Protein Concentrate from H1

Ø I1 - Wet Protein Concentrate from H1



% Protein Purity by Lot

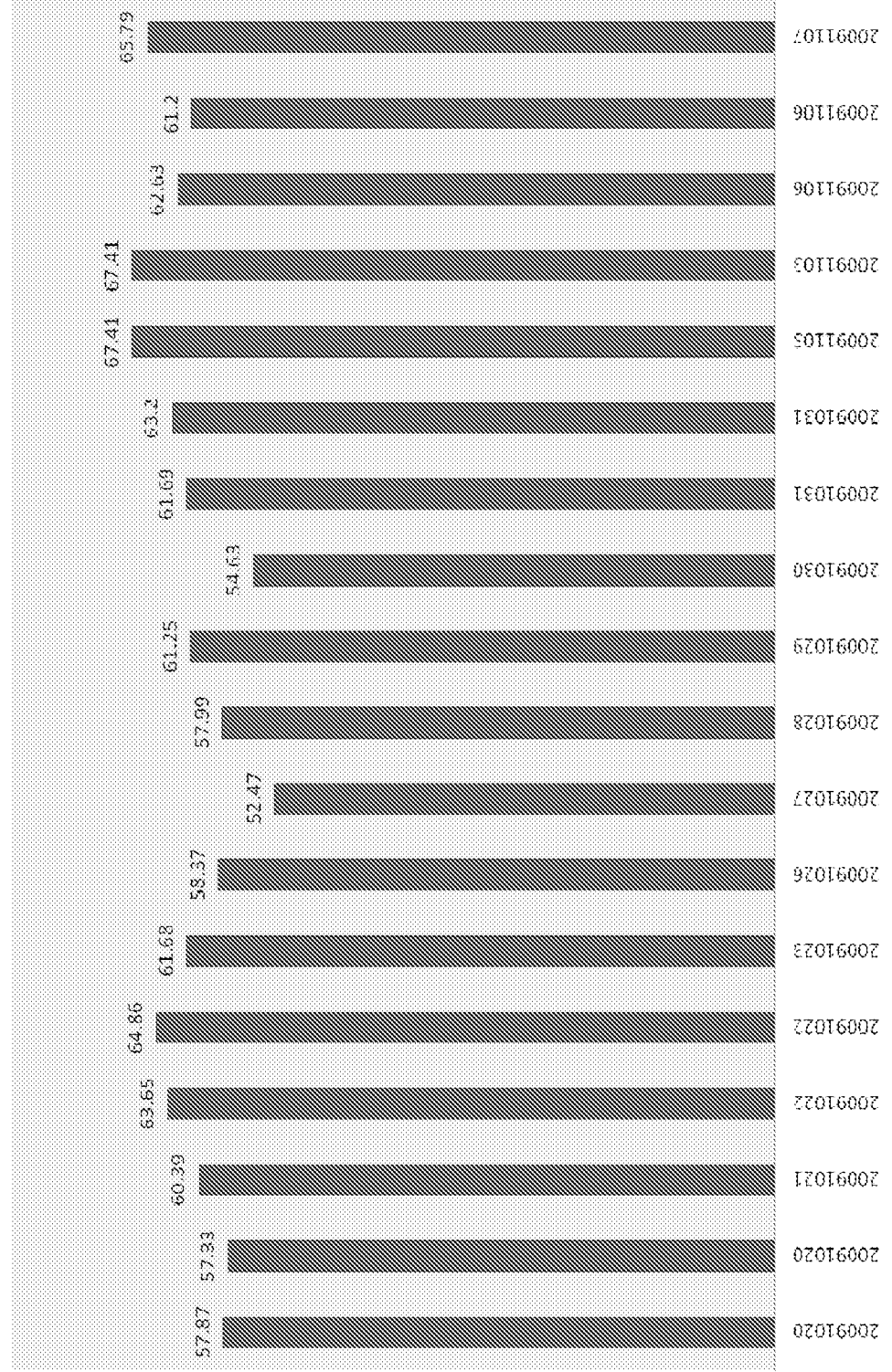


Figure 5

Figure 6

D3 - Wet Bio-Crude % Moisture

Wet Bio-Crude from Very Large Screw Press

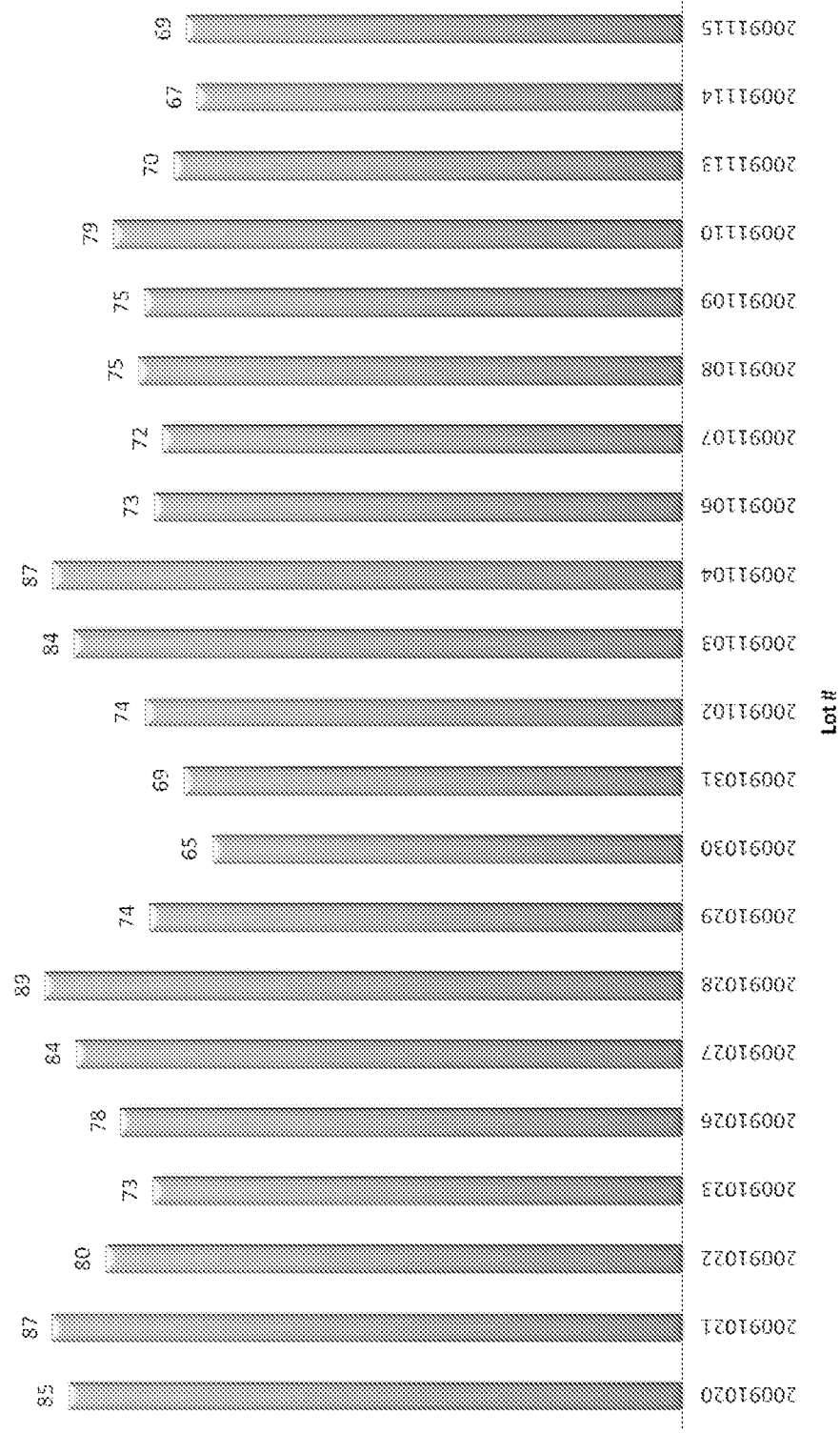


Figure 7

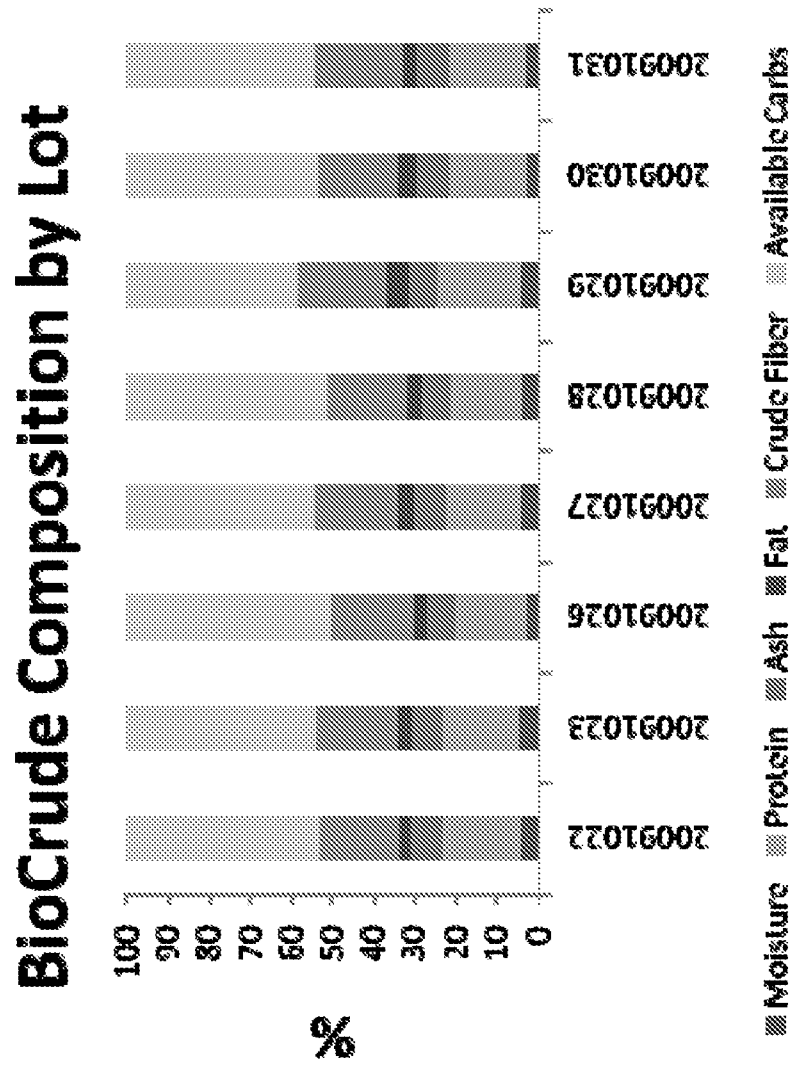


Figure 8

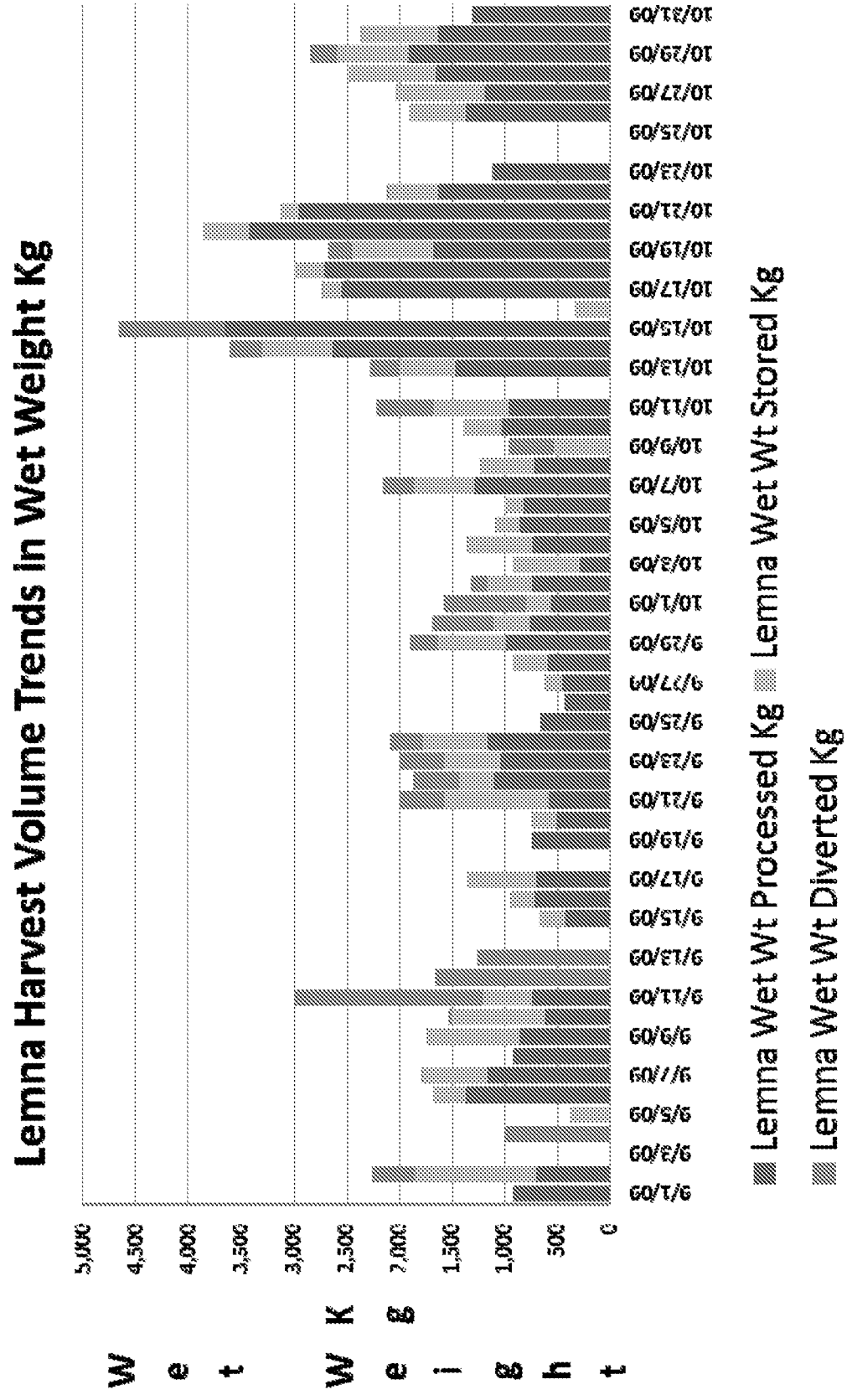


Figure 9

Solid Split in Belt + Screw Press+Belt Filter

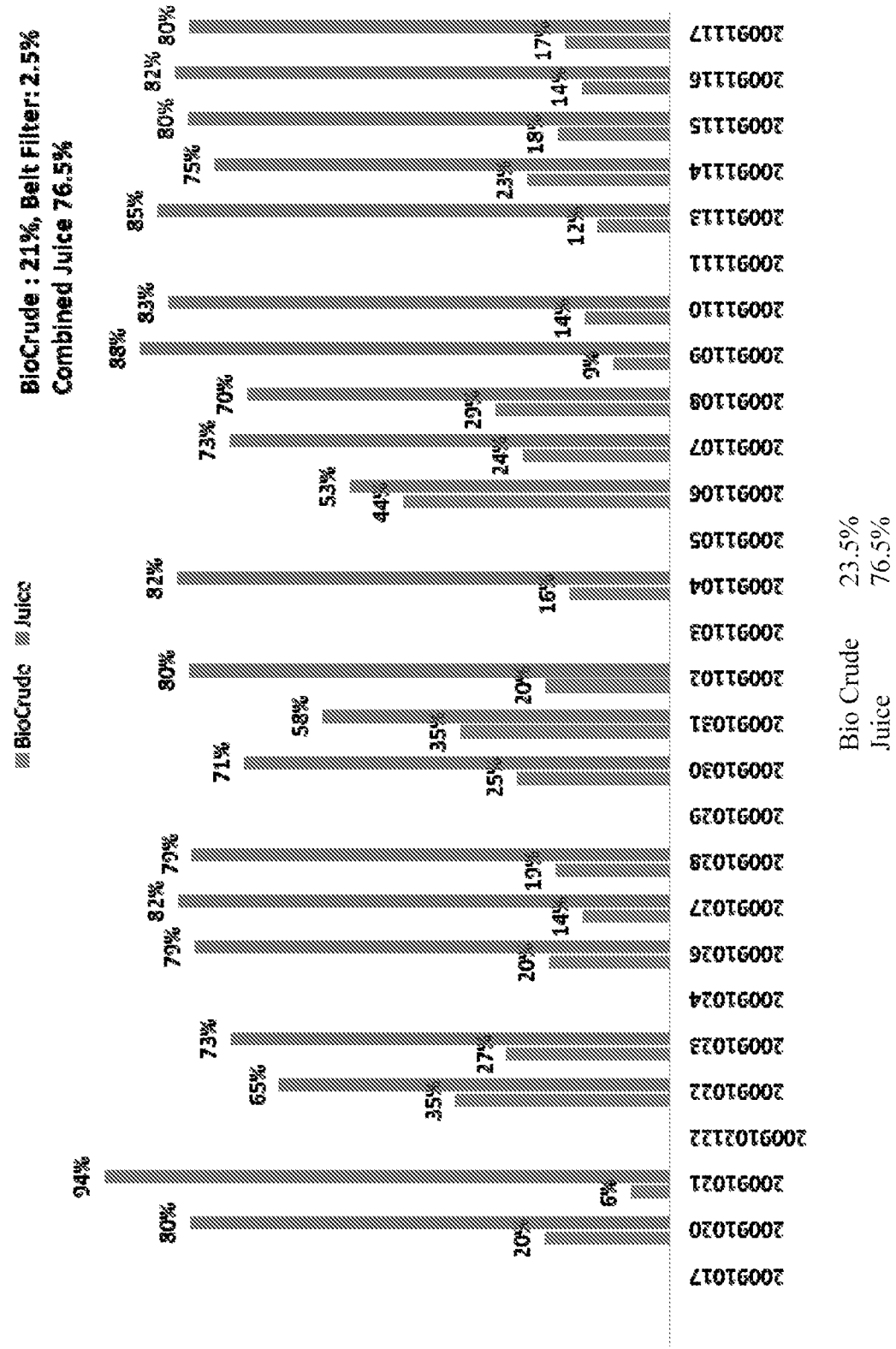
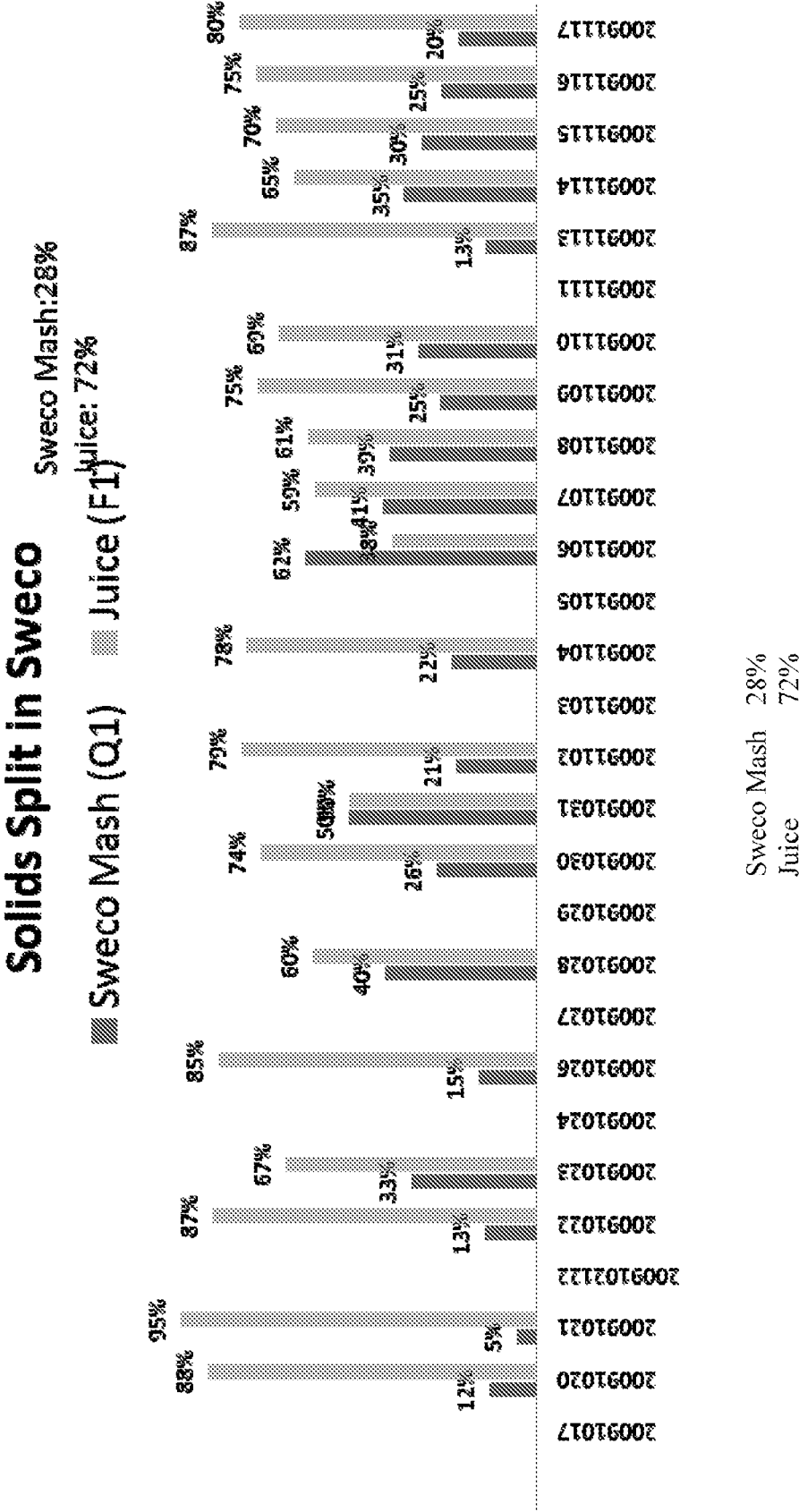


Figure 10



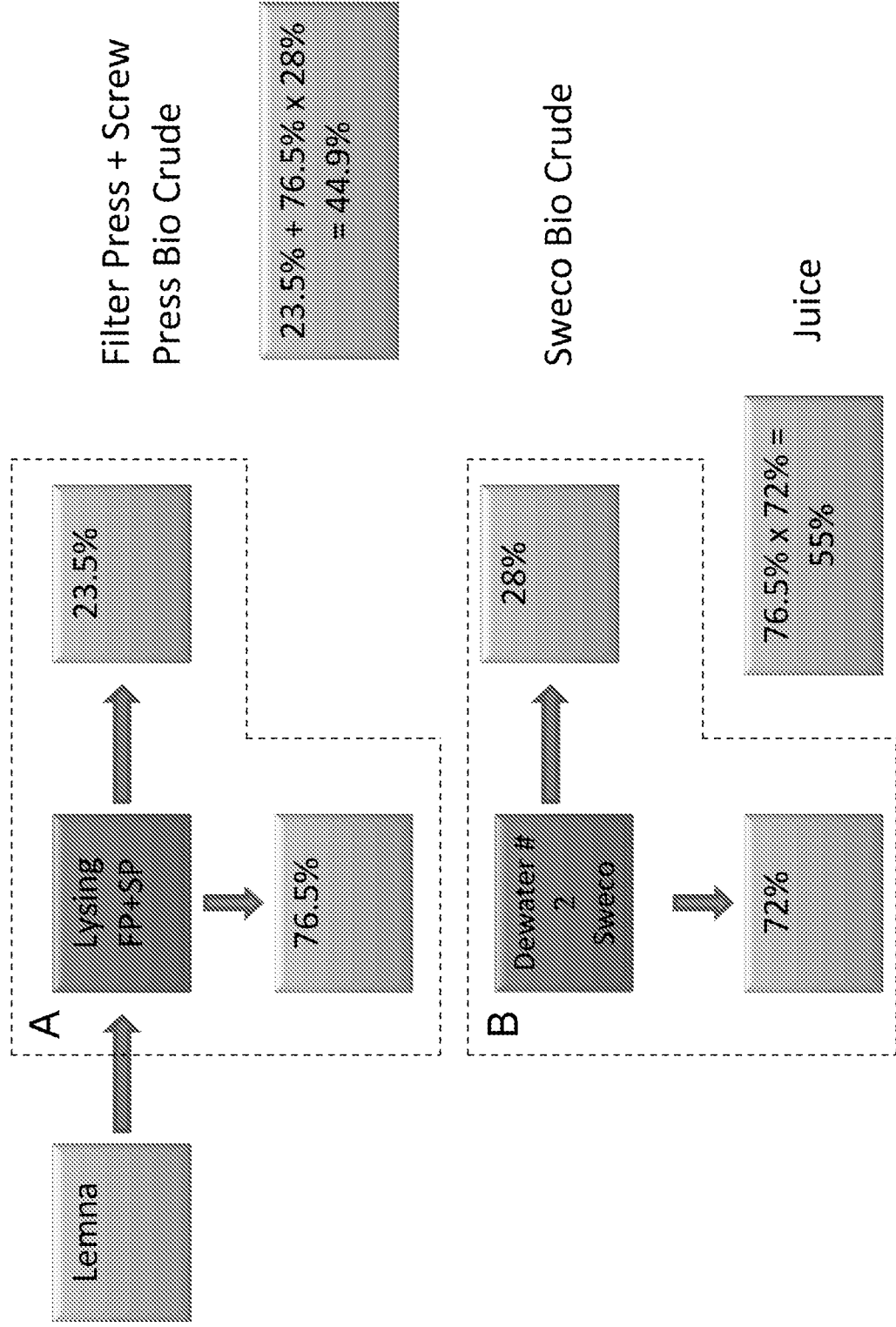


Figure 11

Figure 12

Solid Split in Clarification Centrifuge

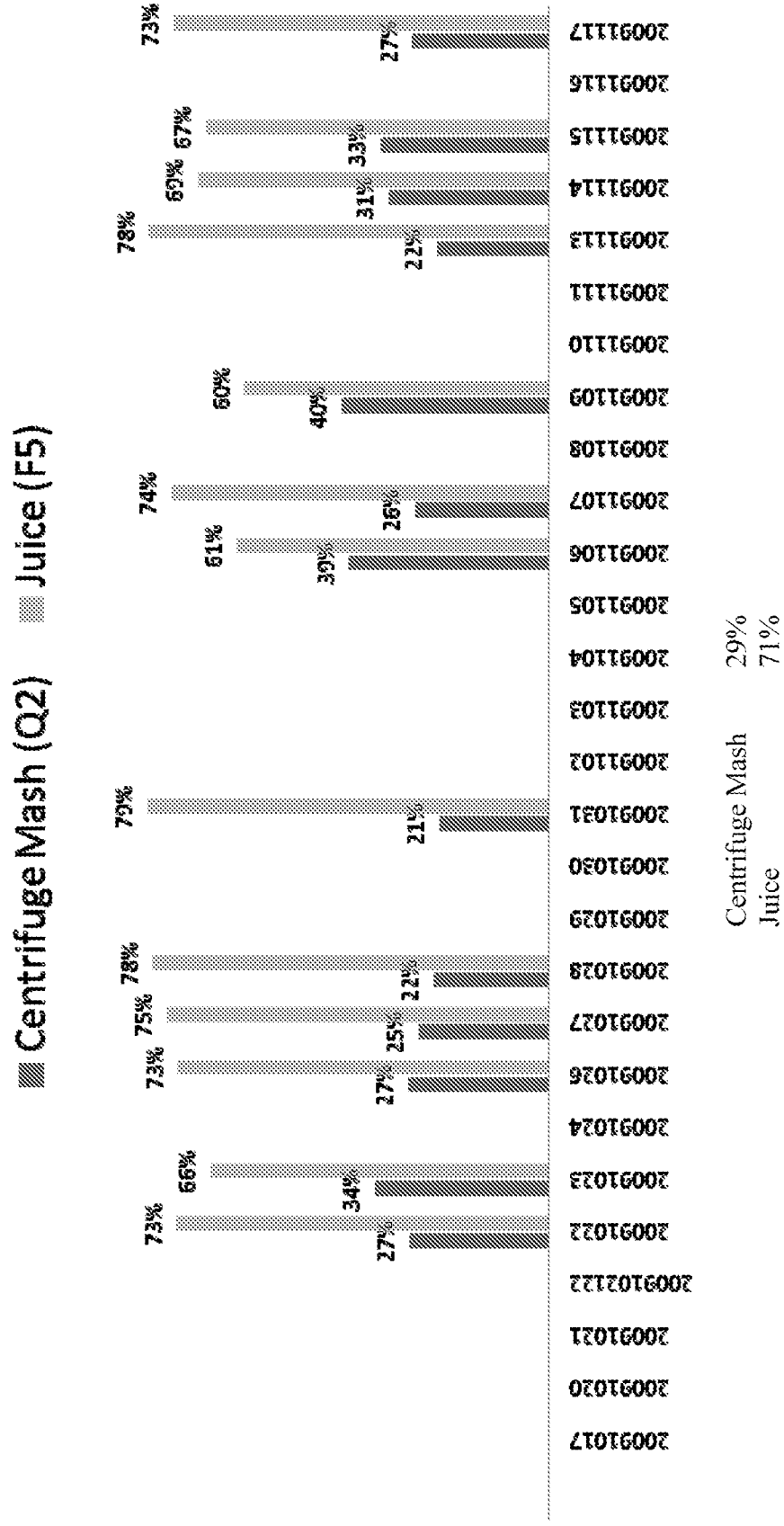


Figure 13

Solids Split in Pasturizer

Loss Broth (H1)

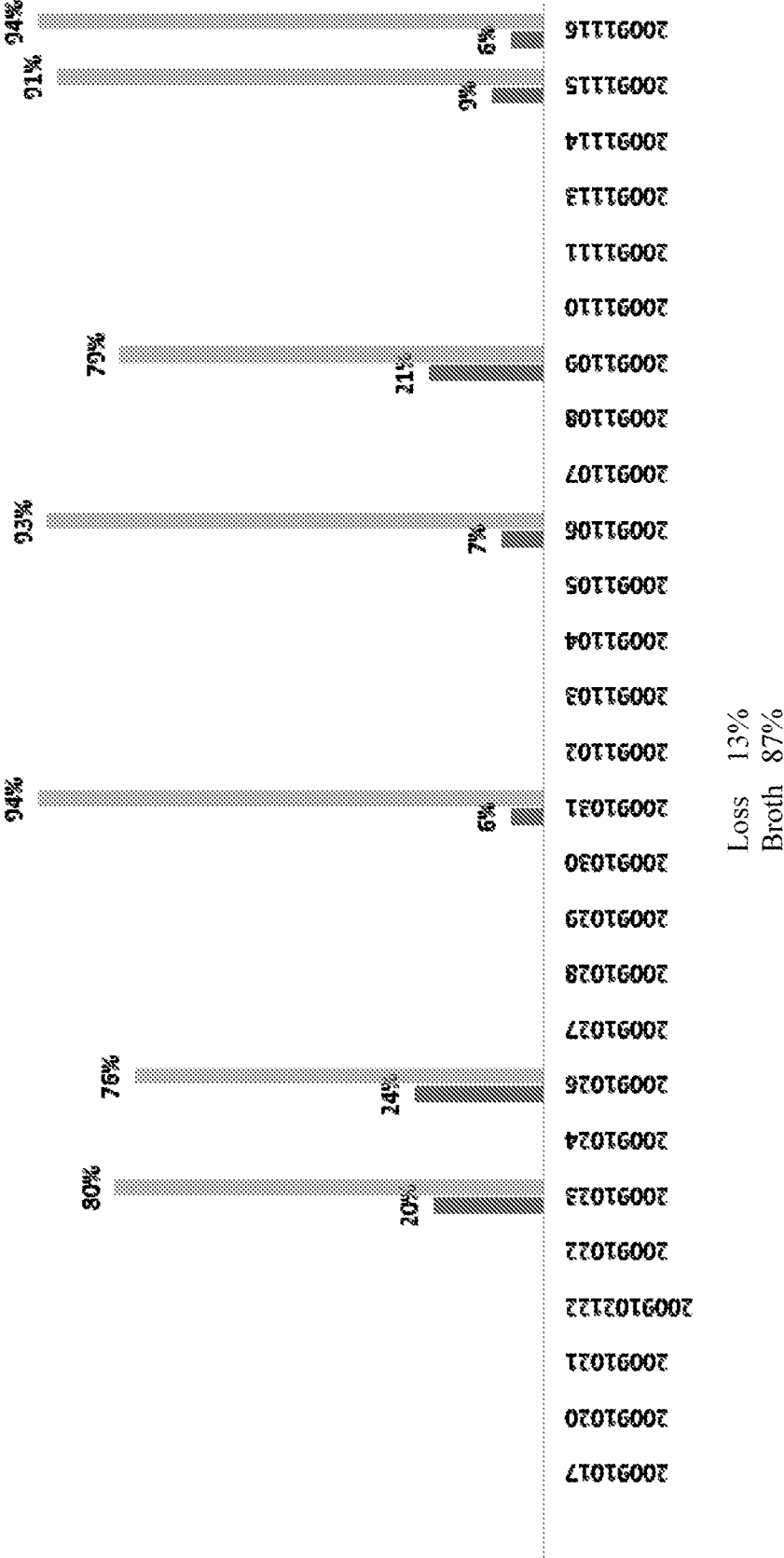


Figure 14

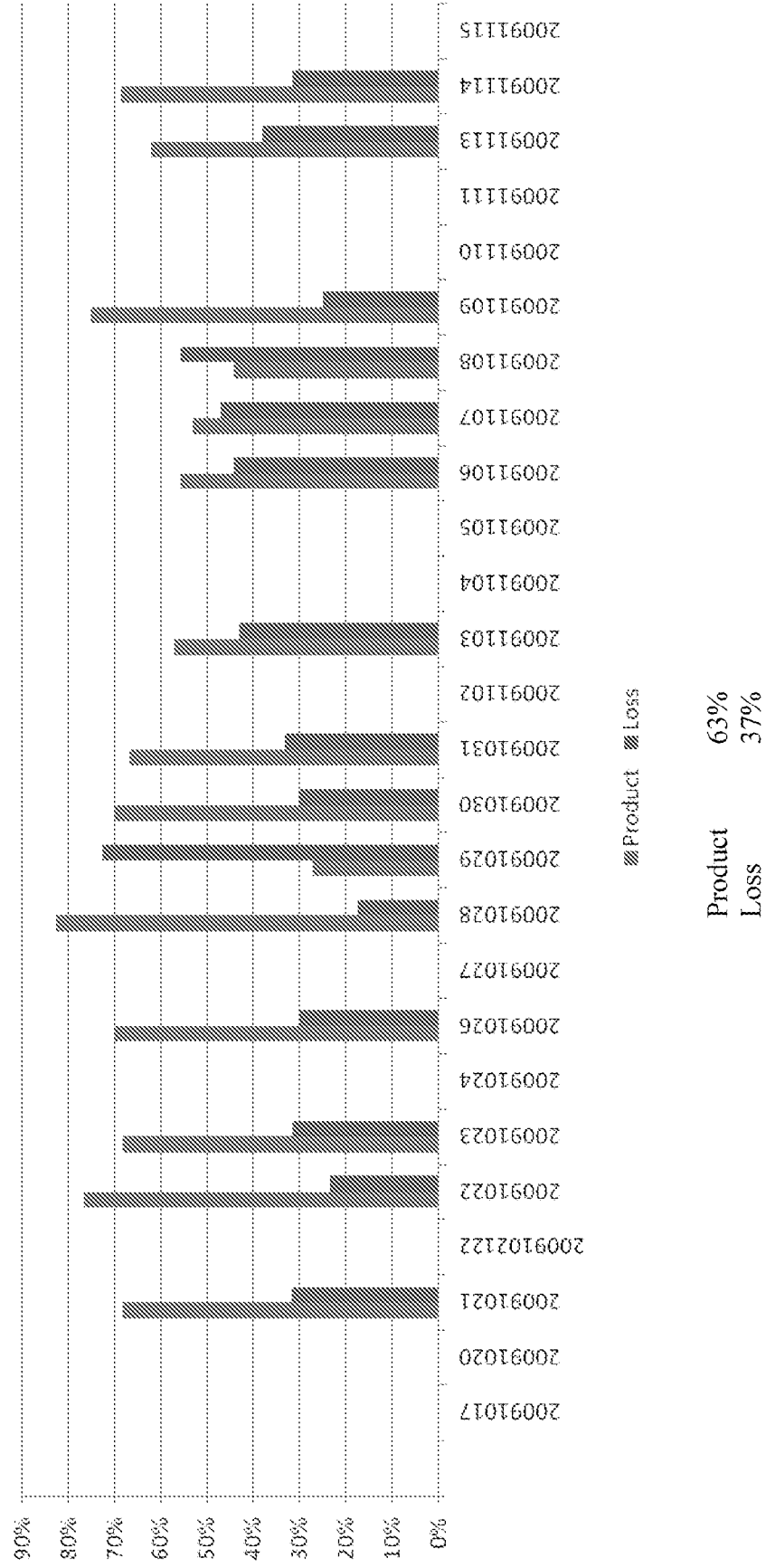


Figure 15

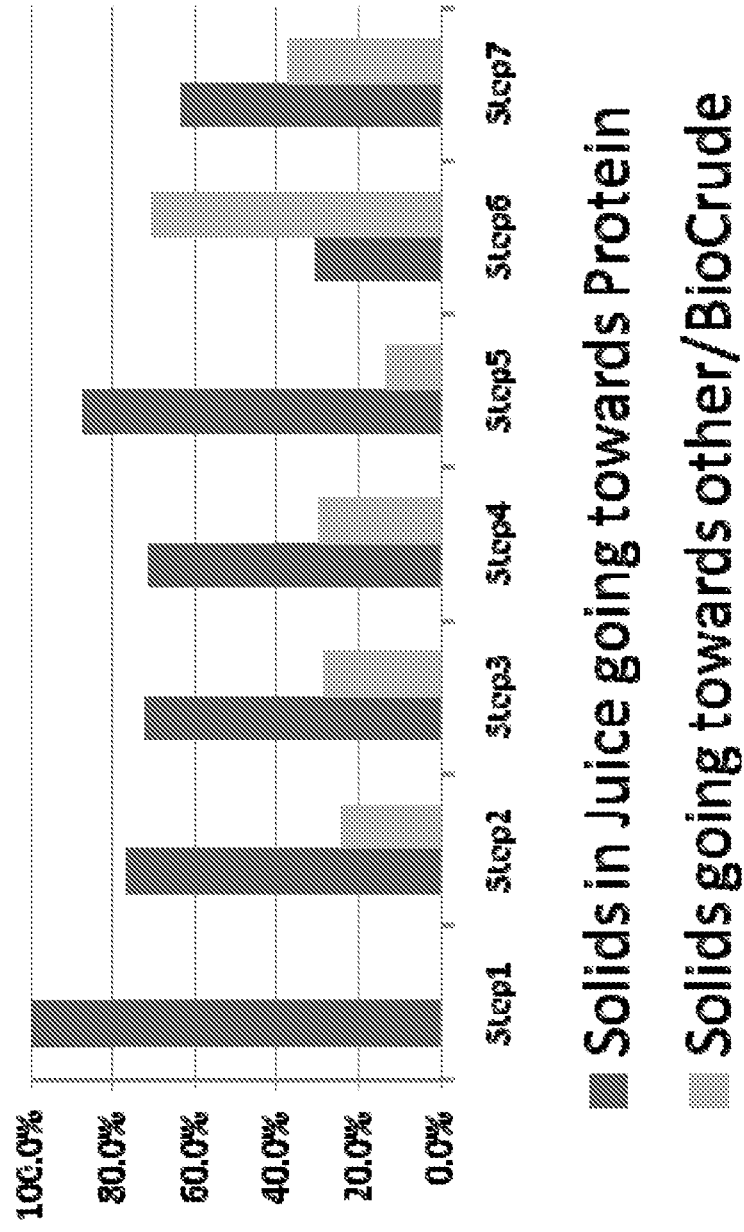
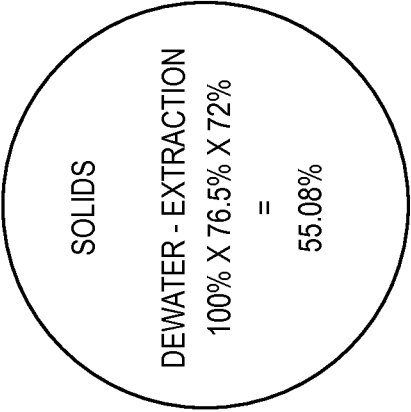
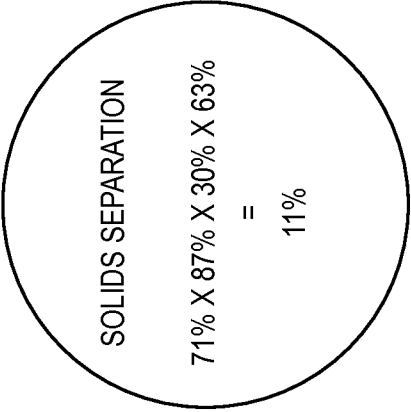


FIGURE 16

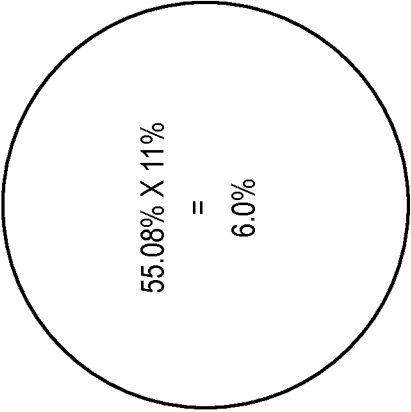
EXAMPLE CALCULATION OF PRODUCT YIELD



X



=



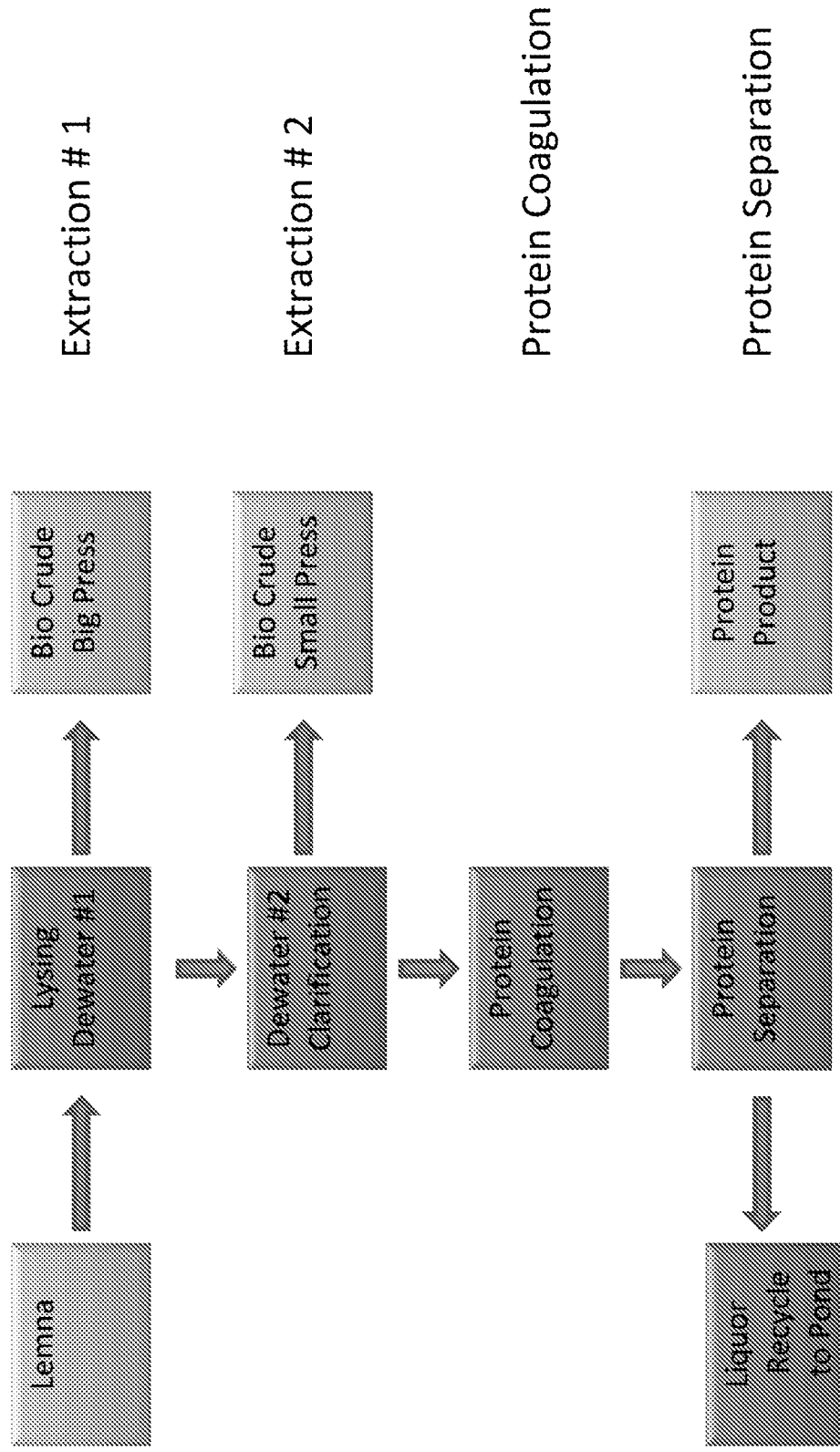


Figure 17

FIGURE 18

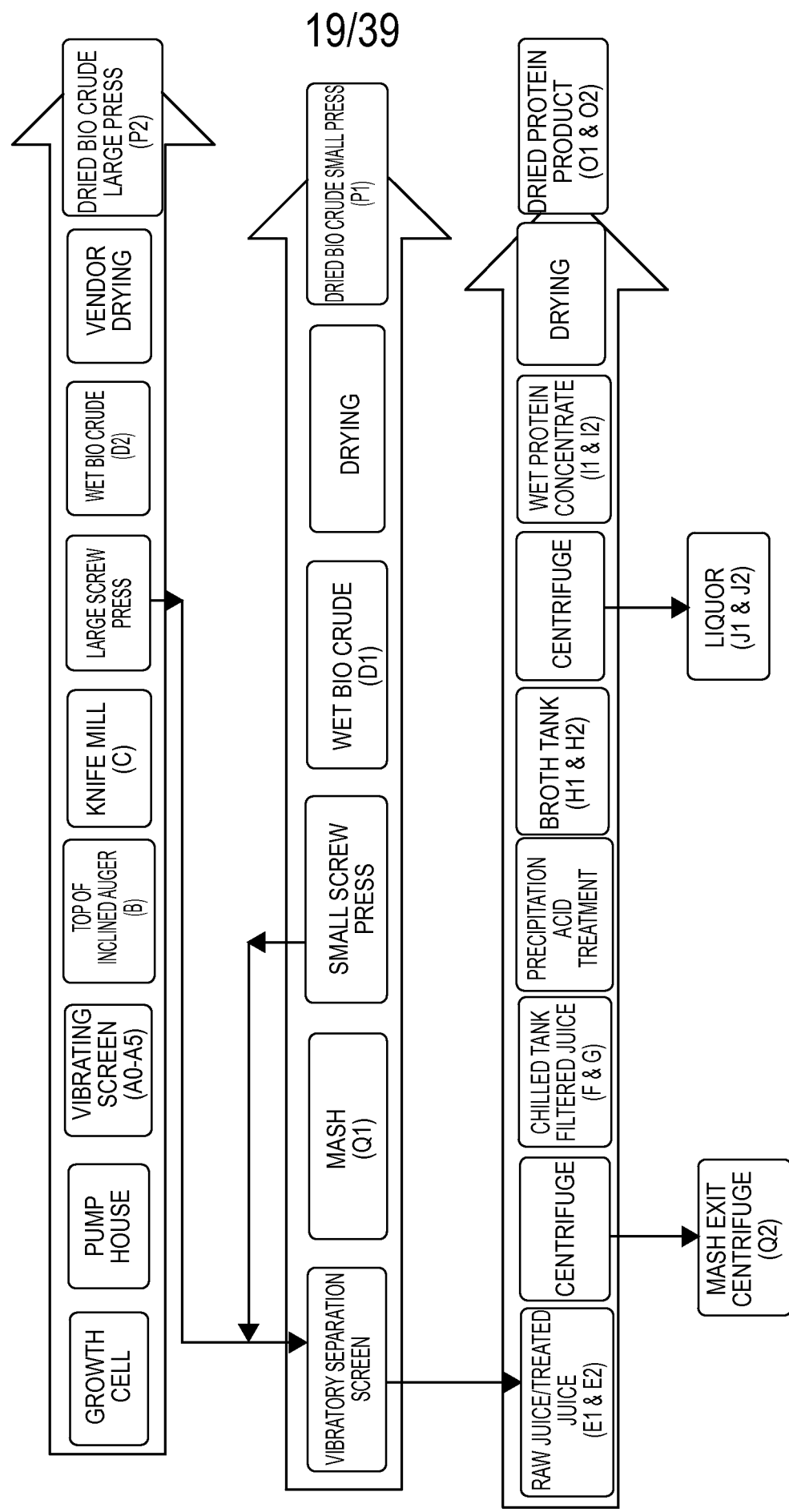


Figure 19

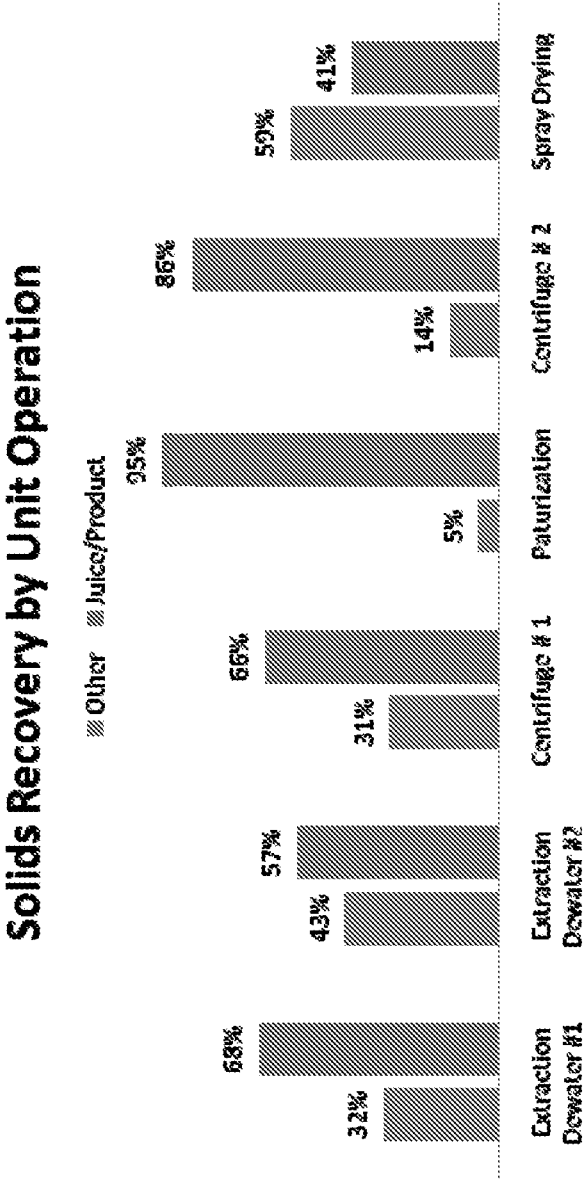


Figure 20

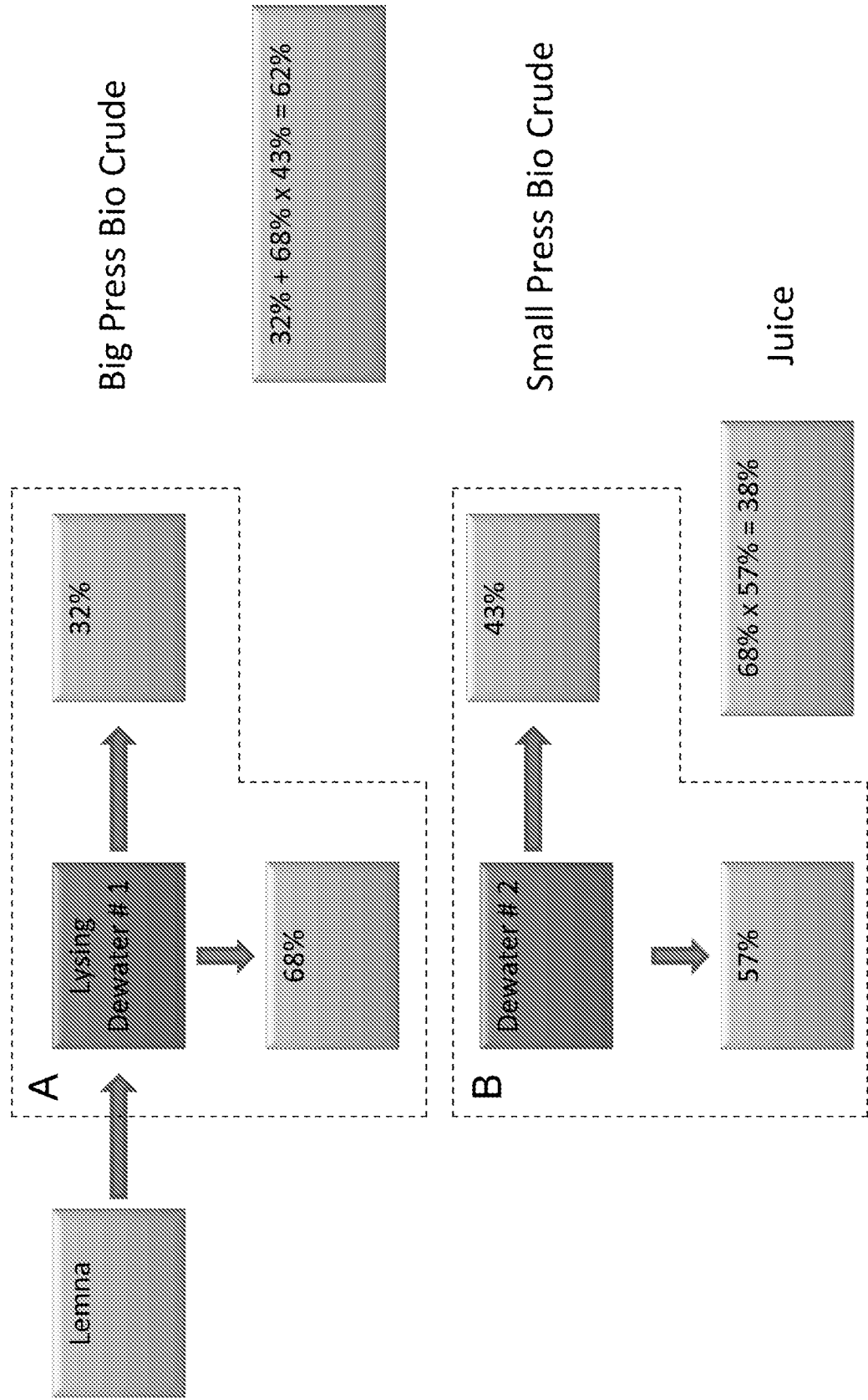
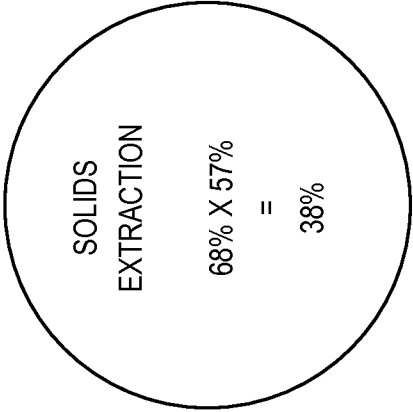
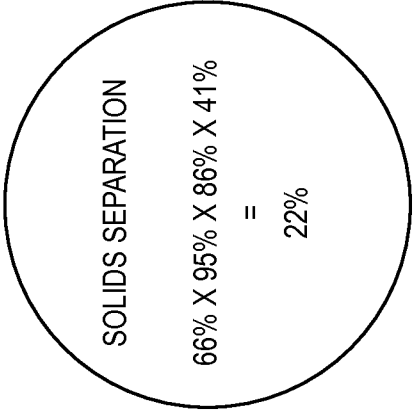


FIGURE 21

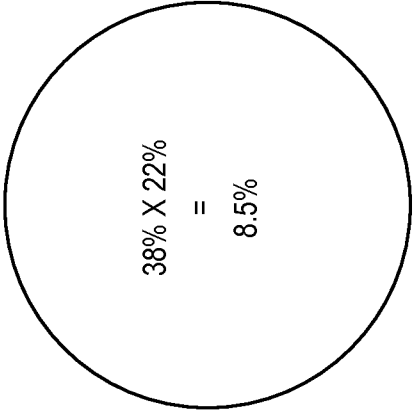
EXAMPLE CALCULATION FOR PRODUCT YIELD



X



=



Protein Recovery by Unit Operation

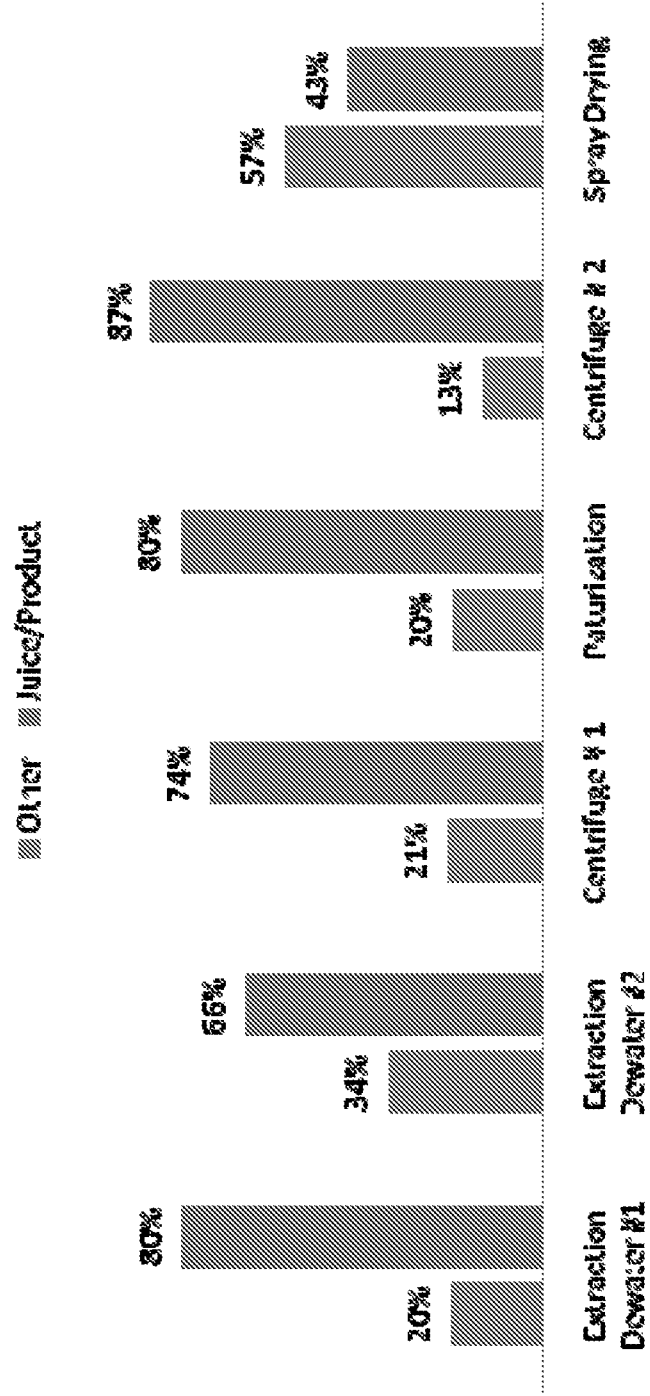


Figure 22

FIGURE 23

EXAMPLE CALCULATION OF PRODUCT YIELD

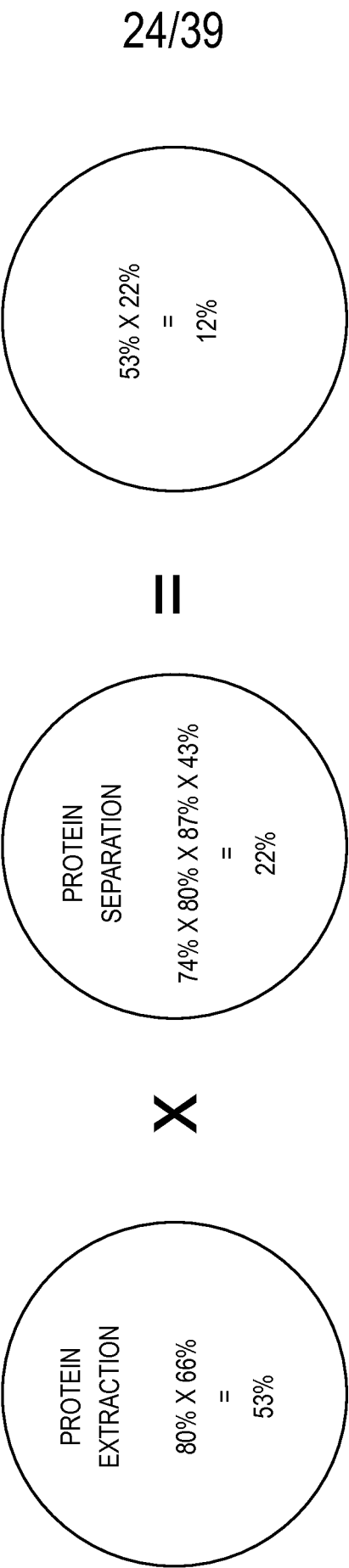


Figure 24

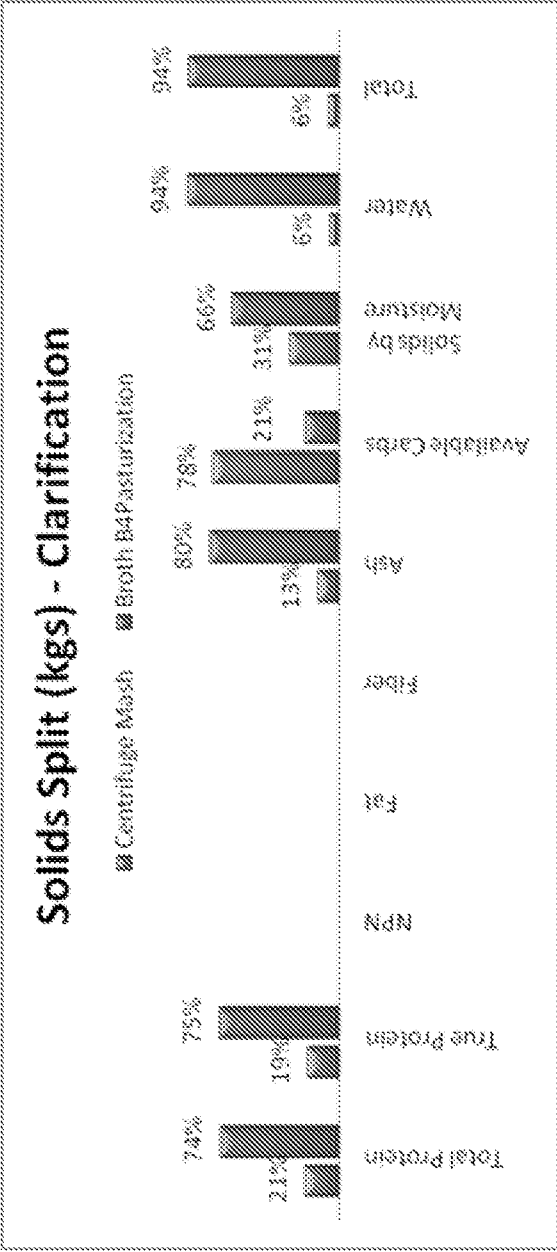
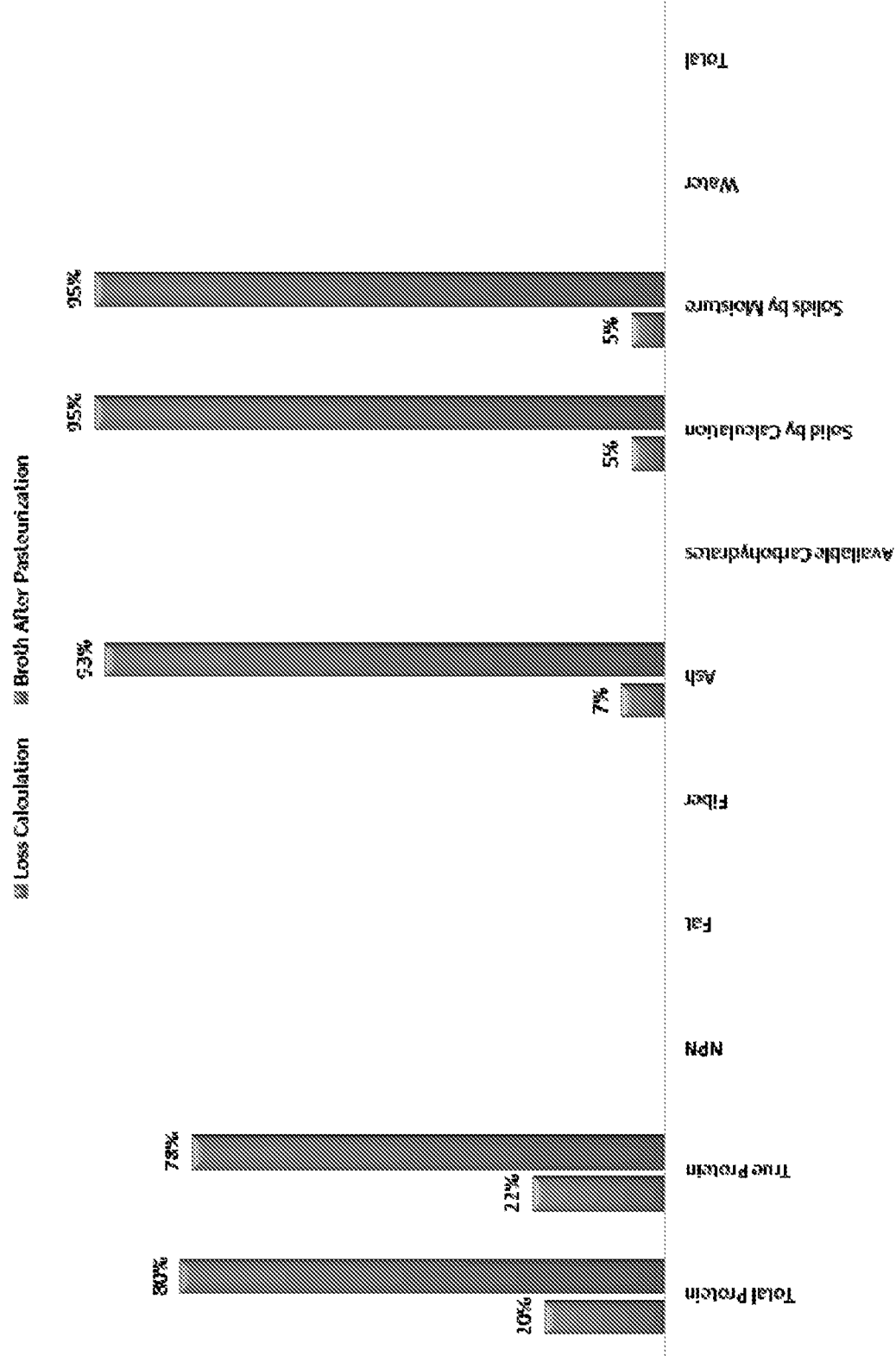


Figure 25

Solids Split - Pasteurization



Solids Split - Centrifuge # 2

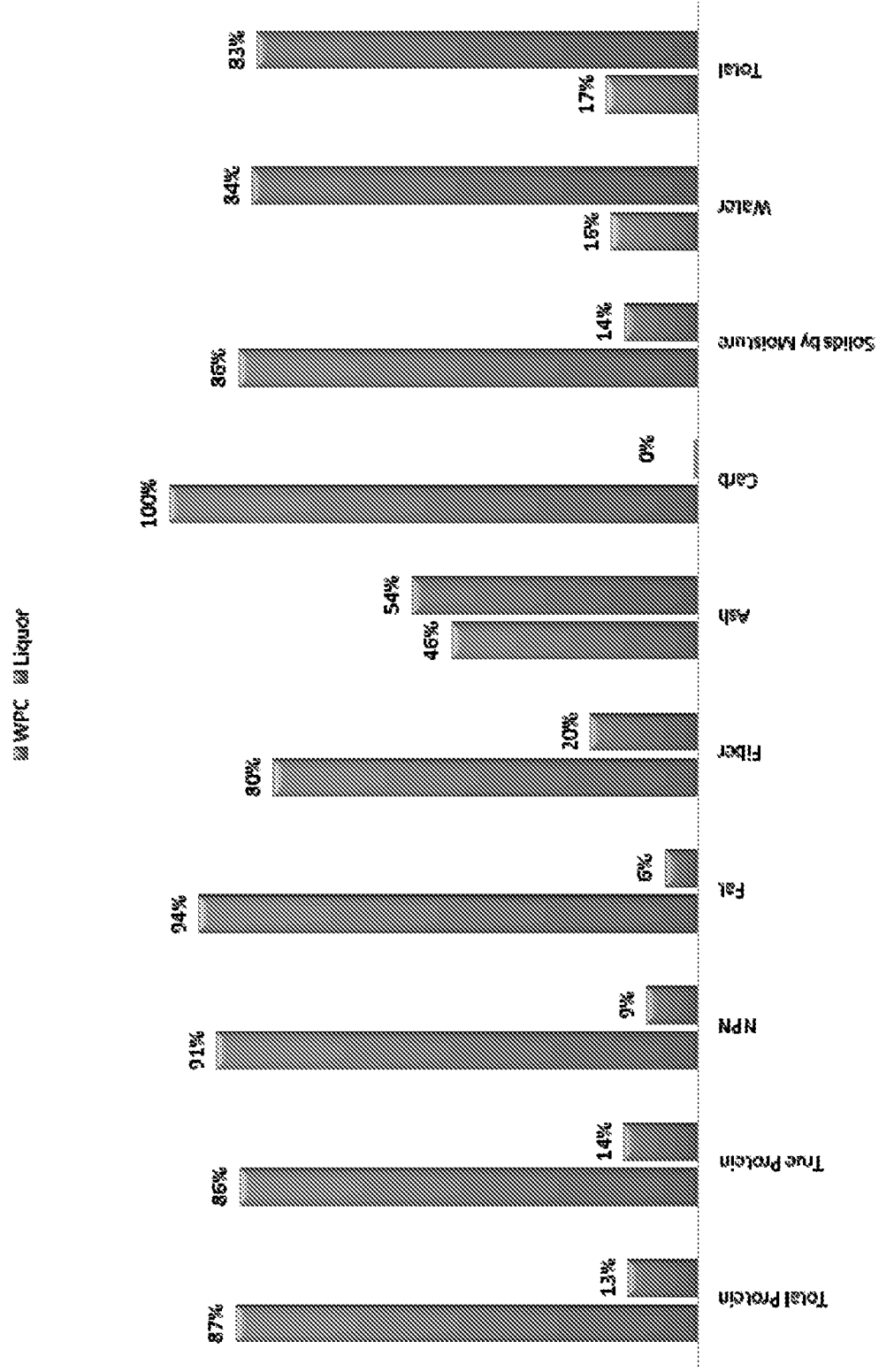


Figure 26

Solids Split - Spray Drying

■ Dry Protein ■ Water + Loss Cal

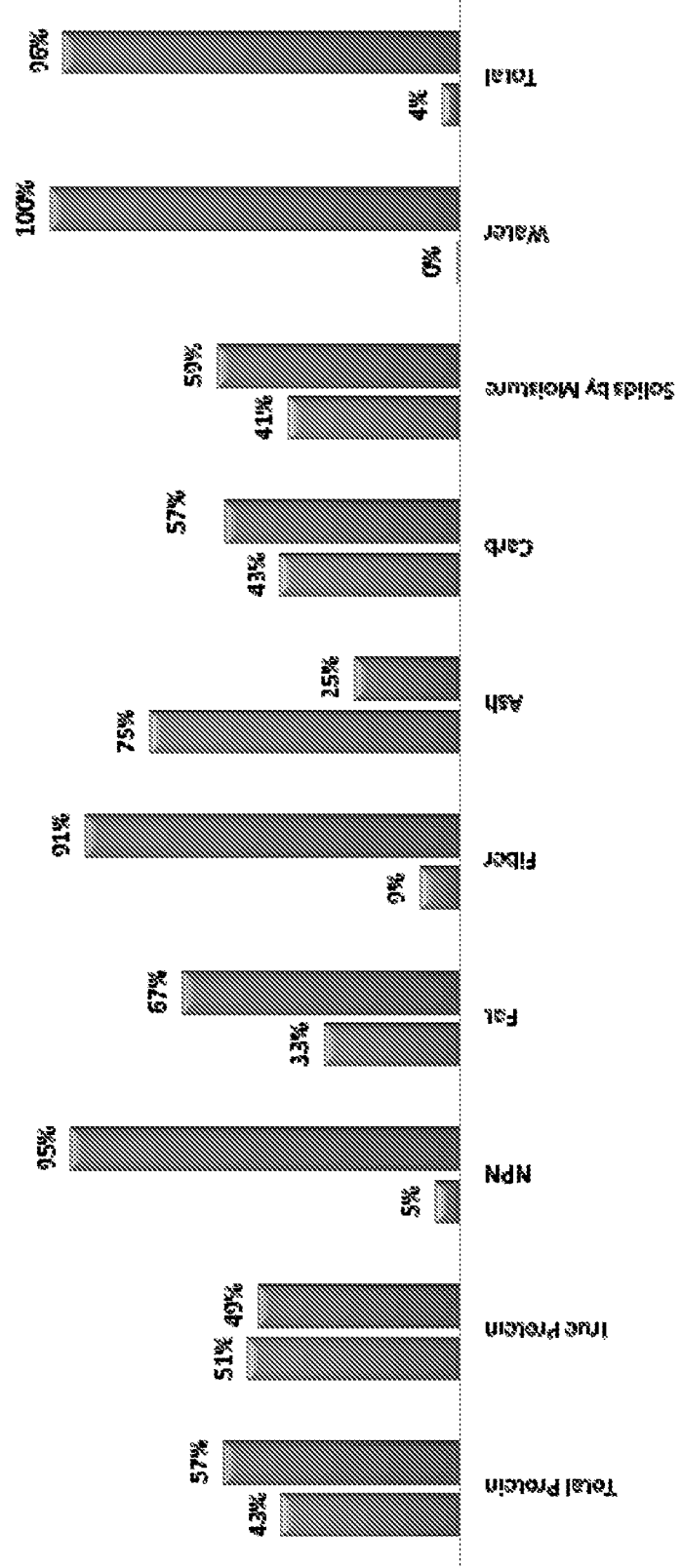


Figure 27

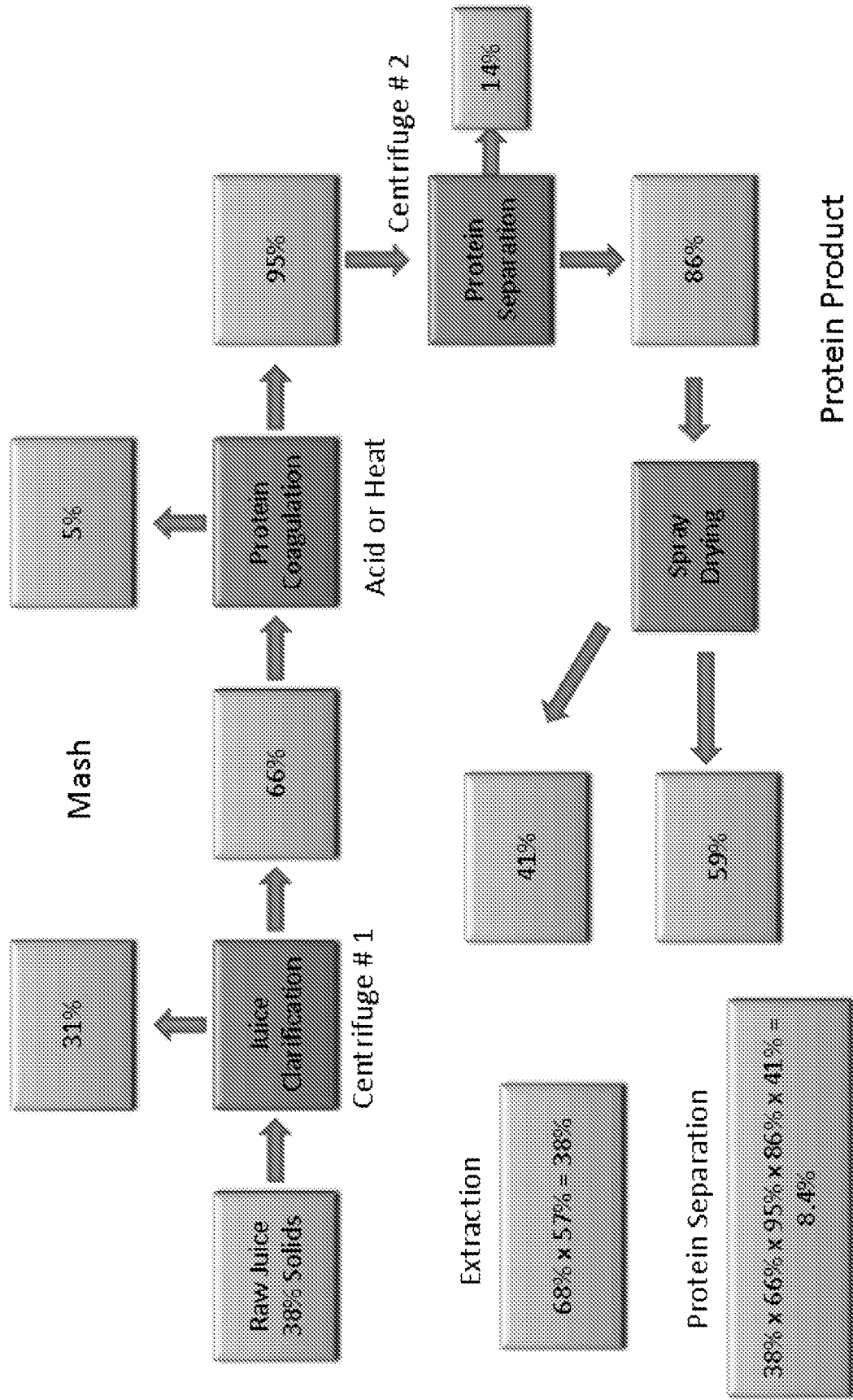


FIGURE 29

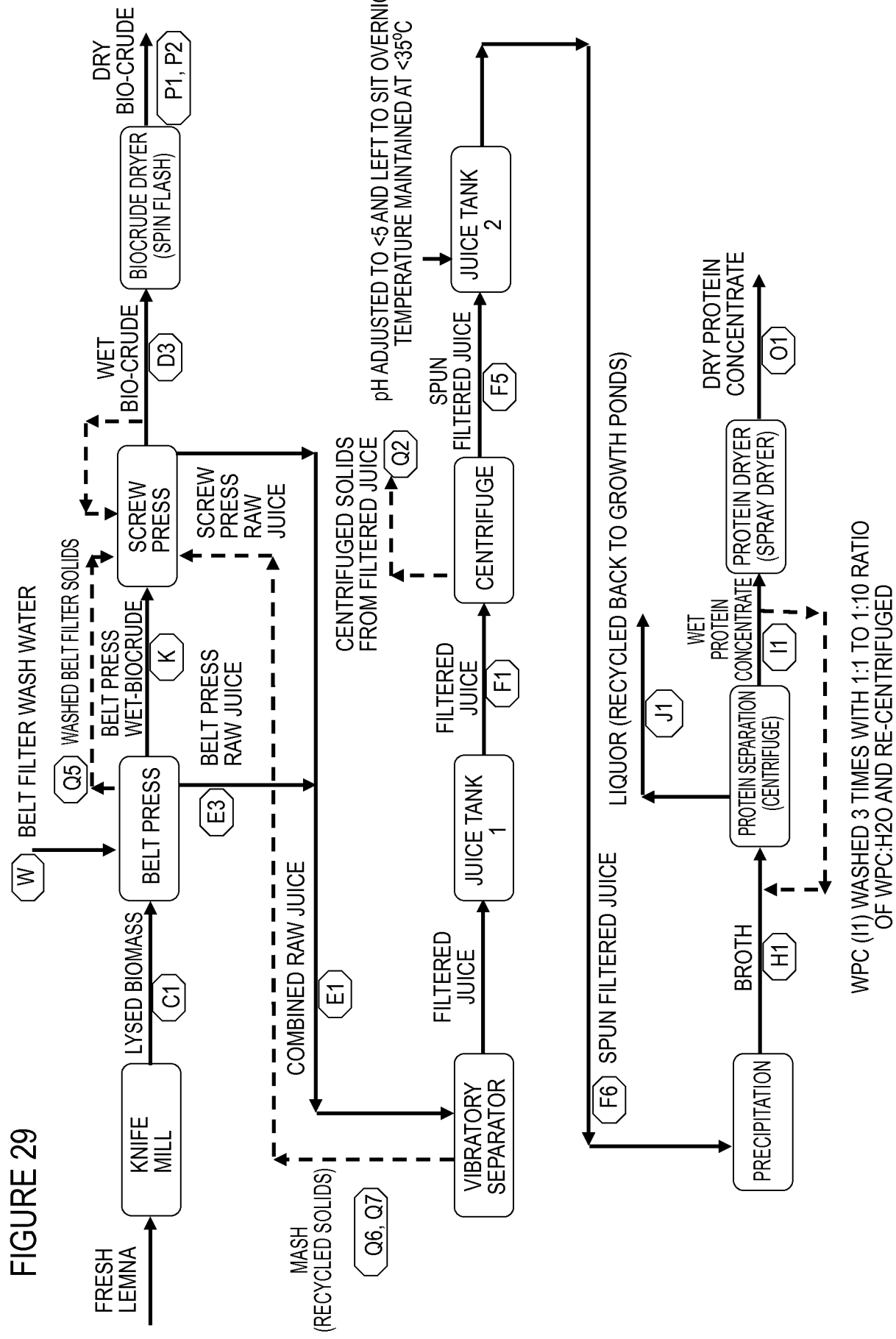


FIGURE 30

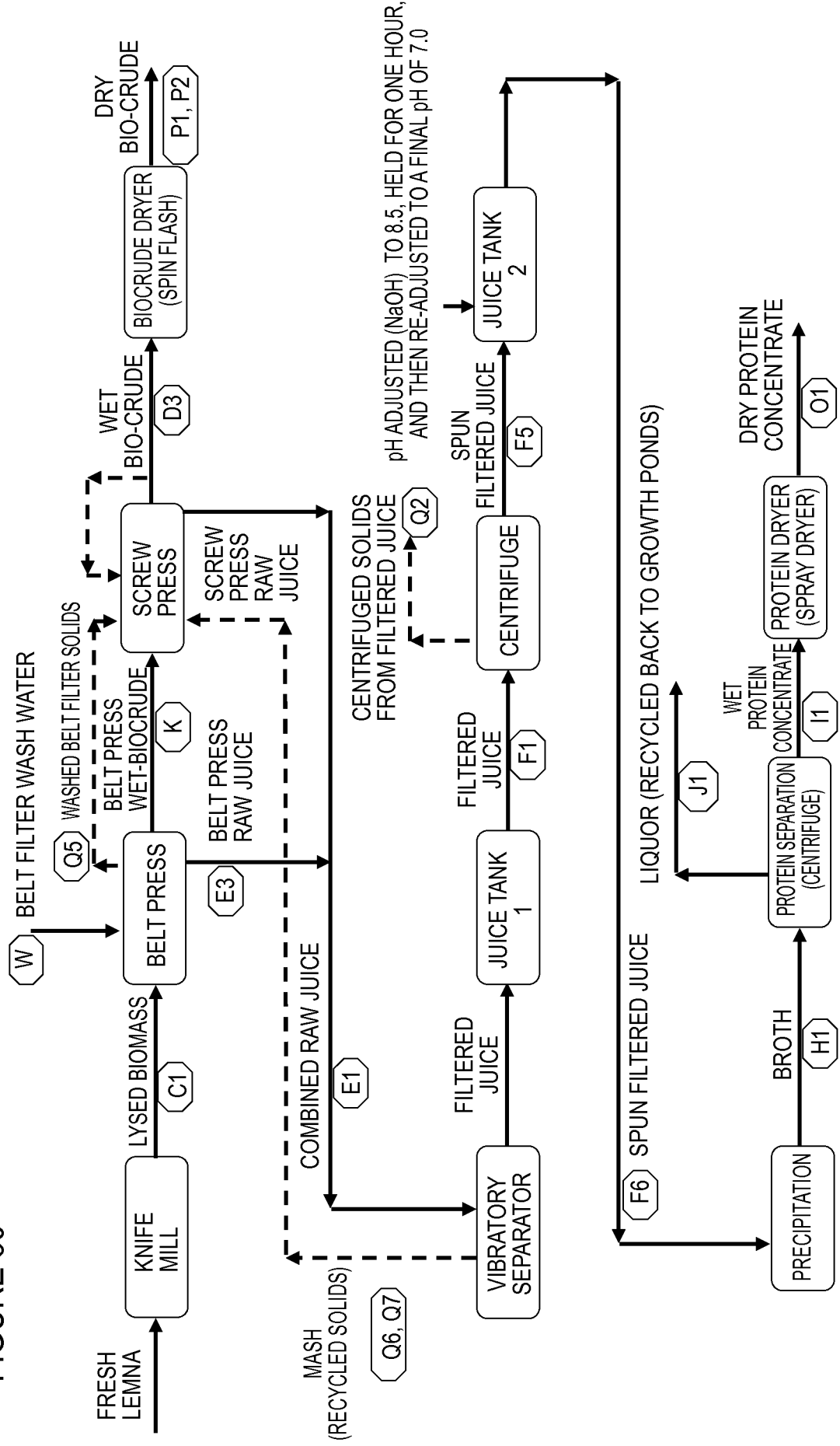


FIGURE 31

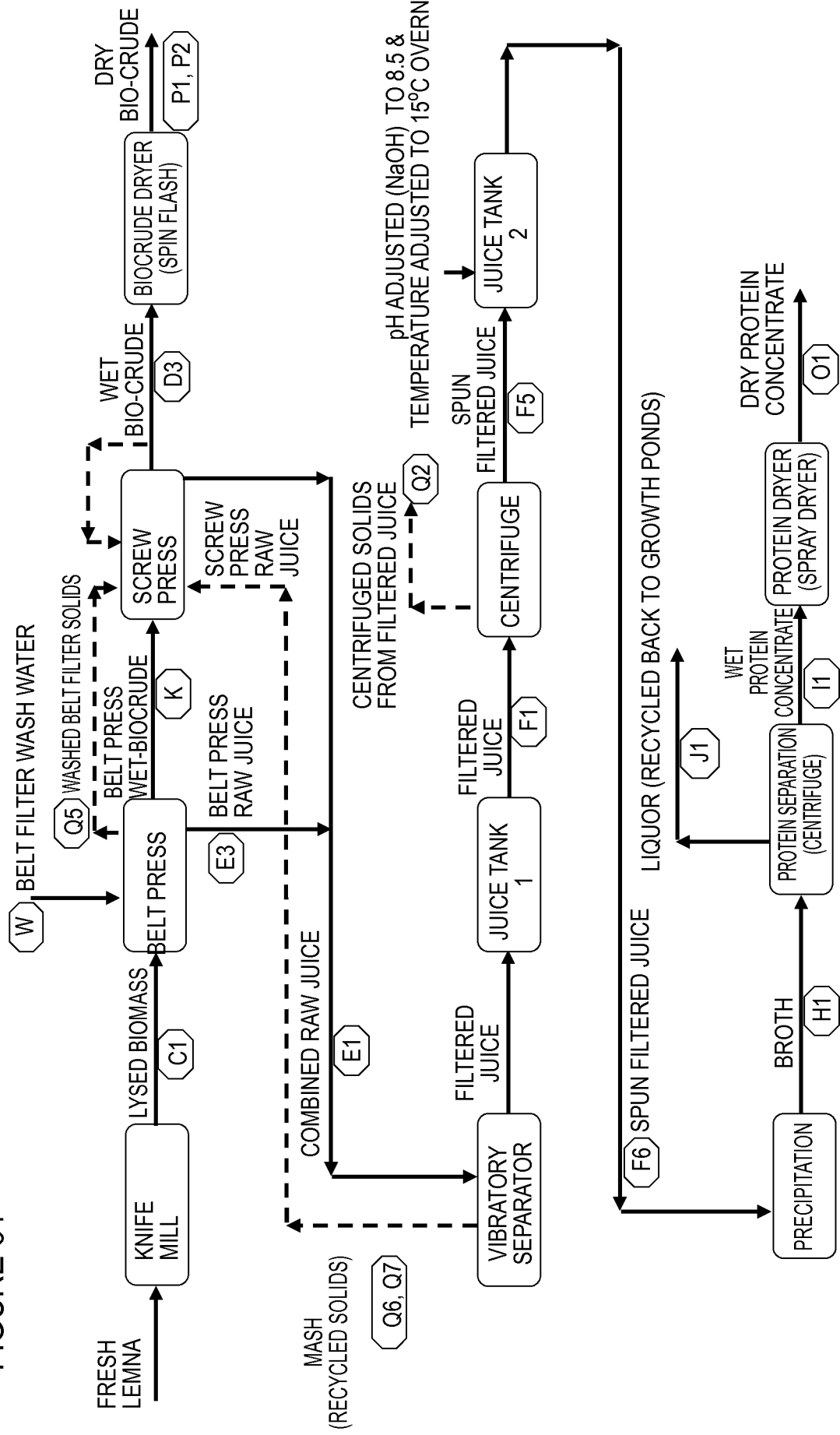
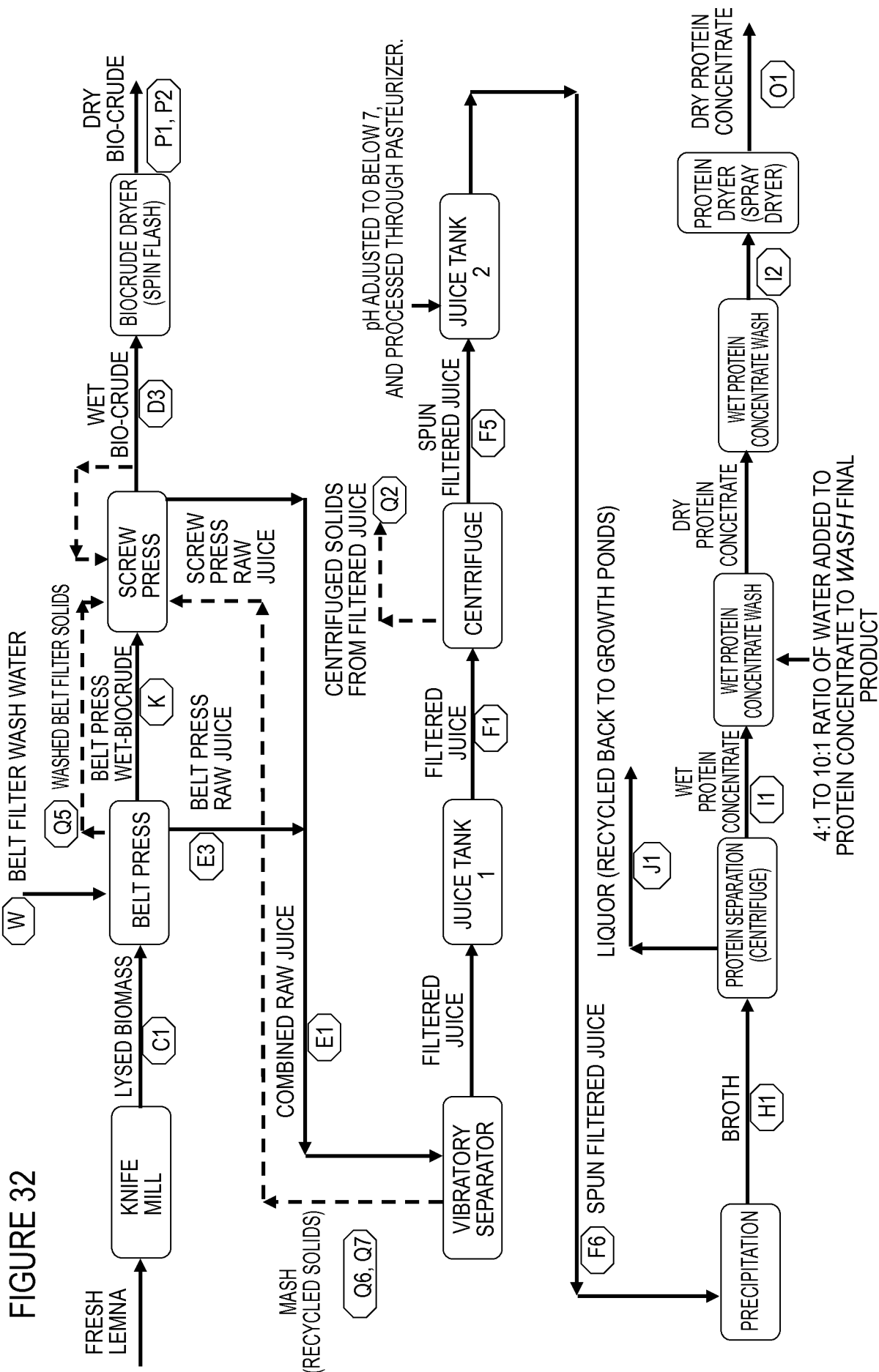


FIGURE 32

```
graph TD
    FreshLemna[FRESH LEMNA] --> KnifeMill[KNIFE MILL]
    KnifeMill --> C1[C1] --> BeltPress[BELT PRESS]
    W[W] --> BeltPress
    BeltPress --> Q5[Q5] --> W5[WASHED BELT FILTER SOLIDS] --> BeltPress
    BeltPress --> E3[E3] --> ScrewPress[SCREW PRESS]
    ScrewPress --> K[K] --> BeltPress
    ScrewPress --> D3[D3] --> BioCrude[BIO-CRUDE]
    BioCrude --> P1P2[P1, P2] --> BioCrudeDryer[BIOCRUDE DRYER (SPIN FLASH)]
    BioCrudeDryer --> DryBioCrude[DRY BIO-CRUDE]
    BeltPress --> E1[E1] --> CombinedRawJuice[COMBINED RAW JUICE]
    Q6Q7[Q6, Q7] --> CombinedRawJuice
    CombinedRawJuice --> VibratorySeparator[VIBRATORY SEPARATOR]
    VibratorySeparator --> F6[F6] --> SpunFilteredJuice[SPUN FILTERED JUICE]
    SpunFilteredJuice --> Precipitation[PRECIPITATION]
    Precipitation --> H1[H1] --> Broth[BROTH]
    Broth --> ProteinSeparation[PROTEIN SEPARATION (CENTRIFUGE)]
    ProteinSeparation --> I1[I1] --> WetProteinConc[WET PROTEIN CONCENTRATE]
    WetProteinConc --> J1[J1] --> Liquor[Liquor (recycled back to growth ponds)]
    WetProteinConc --> I2[I2] --> WetProteinConcWash[WET PROTEIN CONCENTRATE WASH]
    WetProteinConcWash --> ProteinDryer[PROTEIN DRYER (SPRAY DRYER)]
    ProteinDryer --> O1[O1] --> DryProteinConc[DRY PROTEIN CONCENTRATE]
    WetProteinConcWash --> I3[I3] --> WetProteinConcWash
    I3 --> J2[J2] --> 410[4:1 TO 10:1 RATIO OF WATER ADDED TO PROTEIN CONCENTRATE TO WASH FINAL PRODUCT]
```

The flowchart illustrates the protein extraction process from Fresh Lemna. The process begins with Fresh Lemna being milled and pressed to produce raw juice. This juice is then centrifuged and filtered to produce filtered juice. The filtered juice is then separated into two streams: one for bio-crude and one for protein extraction. The bio-crude stream is dried to produce dry bio-crude. The protein extraction stream is then processed through a series of steps: precipitation, protein separation, wet protein concentrate wash, and finally, protein drying to produce dry protein concentrate. The process includes several recycling loops for solids and liquor.



BELT FILTER WASH WATER

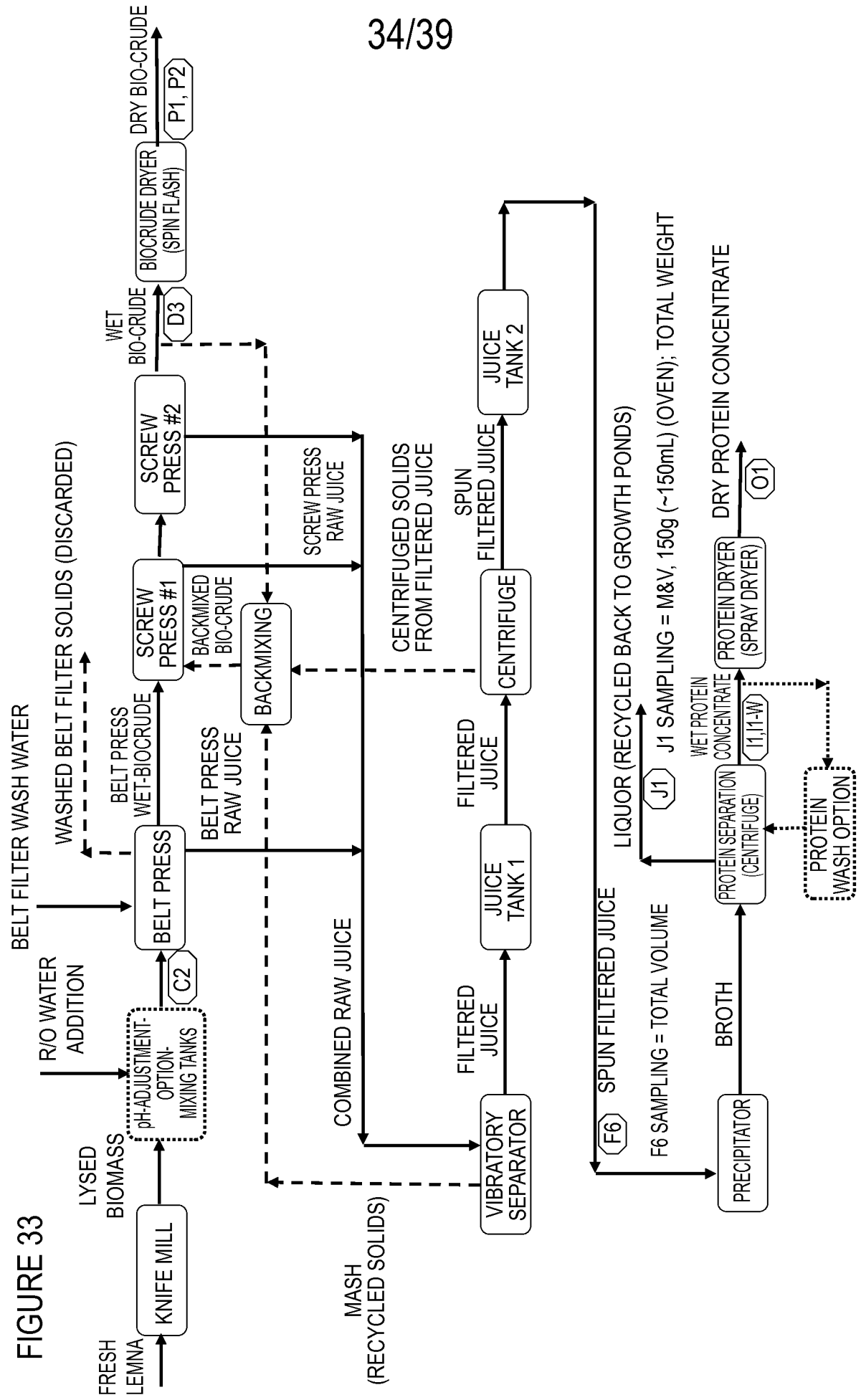
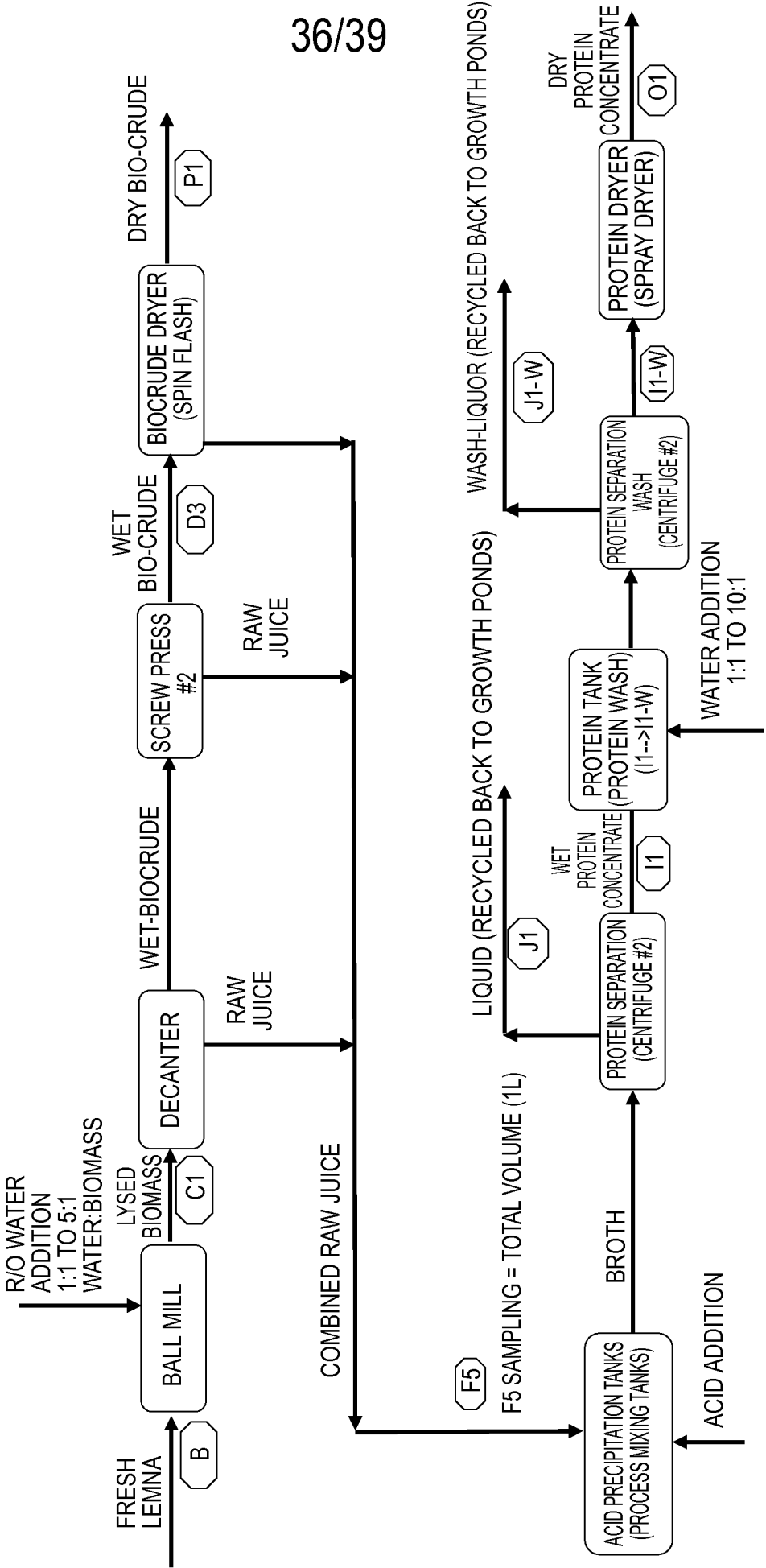


FIGURE 35



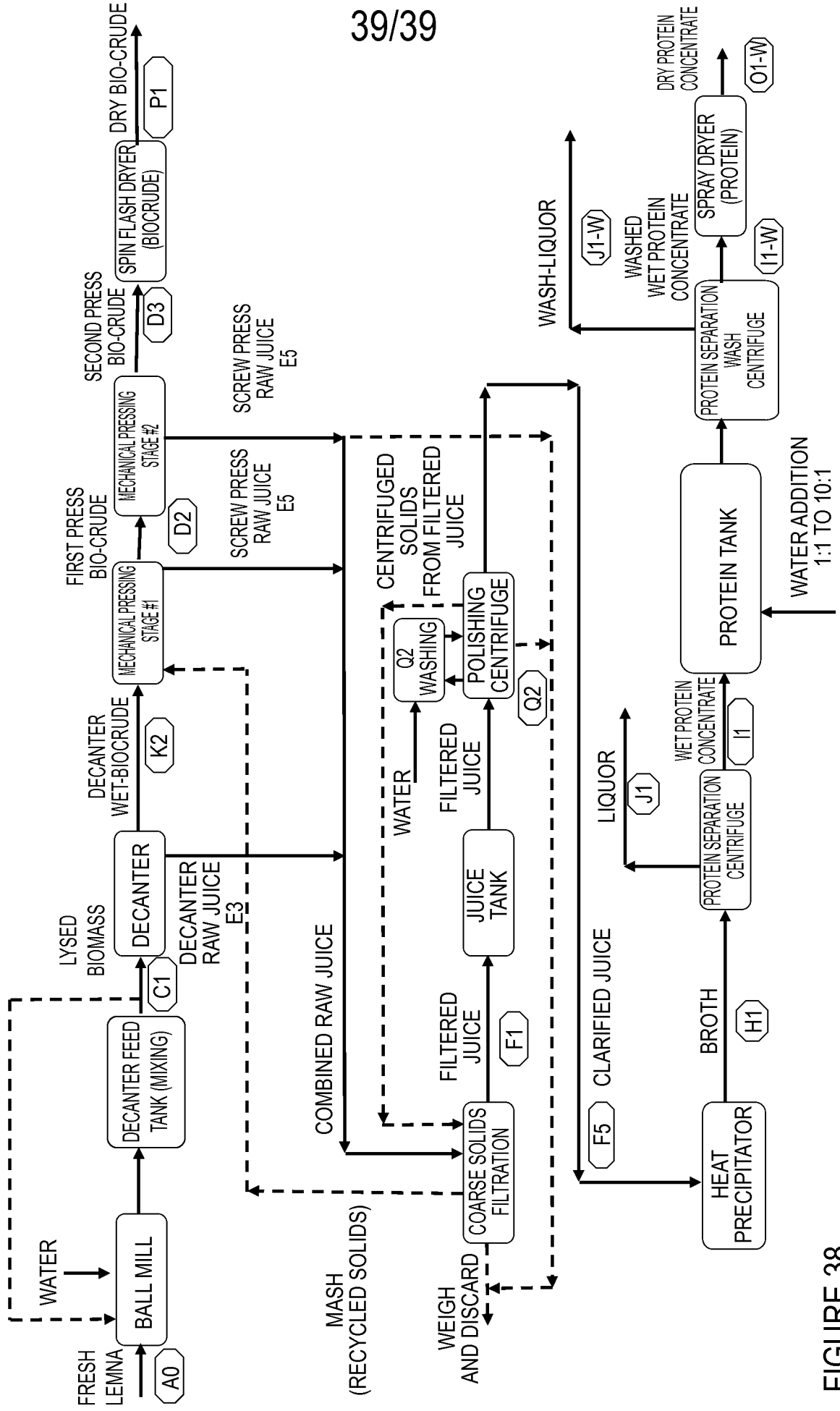


FIGURE 38